Collaboration in the Cloud

How Cross-Boundary Collaboration Is Transforming Business

Erik **van Ommeren** • Sogeti
Sander **Duivestein** • Sogeti
John **deVadoss** • Microsoft
Clemens **Reijnen** • Sogeti
Erik **Gunvaldson** • Microsoft

Collaboration in the Cloud

How Cross-Boundary Collaboration
Is Transforming Business

Erik van Ommeren • Sogeti
Sander Duivestein • Sogeti
John deVadoss • Microsoft
Clemens Reijnen • Sogeti
Erik Gunvaldson • Microsoft

2009
Microsoft and Sogeti

production LINE UP boek en media bv, Groningen, the Netherlands
editing Susan MacFarlane
design Jan Faber
cover photo www.ecardfriends.com
printing Bariet, Ruinen, the Netherlands
binding Abbringh, Groningen, the Netherlands
ISBN 978 90 75414 24 0

Contents

The New World of Business

Collaborative Innovation

Market turmoil shakes consumer and business confidence, diminishes the value of financial assets, and creates uncertainty. History, however, informs us that shifts in the economic landscape also offer unique opportunities for those who are able to look past the near-term difficulties and seek out opportunities. Organizations can choose to retrench, or they can choose to prepare for success and leadership roles. If they take the latter approach, returns from hard-fought cost-reduction battles can be turned into infrastructure improvements, more rational integrated processes, and fundamental changes in market presence or positioning to fill new niches or those surrendered by competitors.

Seeing opportunity in times of turmoil reframes challenges in a way that projects the lessons of history onto the future. Suggesting that organizations seize new opportunities during economic strife does not minimize the significant difficulties they will encounter. Although picturing the future is difficult, turbulent times call for balance against new factors. Balance will always be essential. Organizations that can balance near-term concerns with forward-looking expectations will be better poised to succeed as markets calm; those that retreat risk becoming an anachronism while the world reinvents itself.

Whether one chooses to be opportunistic or defensive in their approach to the turbulent economy, software and information technology has a central role to play as the strategic enabler of success, the conservator of scarce resources, and the accelerator of recovery.

The transformative impact of Software + Services and a new generation of social computing technologies are profound and ongoing. These innovations enable people and organizations to share information, collaborate on projects, and build virtual communities, irrespective of time and geography. In the process, they have made command-and-control hierarchies unnecessary as mediating mechanisms for the flow of information.

Collaborative software unites the blended workforce and makes the experience of working together as natural and productive as working in the same physical location. Now, more powerful, integrated applications and services for social computing – including RSS feeds, wikis, blogs, and social networks – are joining the arsenal of collaboration tools available to businesses as they become more secure and manageable in the enterprise. Use of these tools is growing. Facilities such as project workspaces, document repositories, team access to contact and schedule information, shared project flowcharts, shared task lists, and automated notifications provide a foundation for virtual teamwork by keeping everyone's status and work visible. Team members can see shared information in the periphery of their standard work environment, or they can access up-to-the-minute data from any portable device.

Organizations are only beginning to come to grips with the impact of the internet and other technologies on core business functions such as product development, sales, customer relationship management, and operations. I hope that this book can help you along this journey – providing both practical insight and guidance towards realizing business value in this new world of business.

Ron Markezich, Corporate Vice President, Microsoft Online
Redmond, February 20th, 2009

A Pragmatic Revolution

The book that you have in front of you is an important book. Not only does it discuss two of the "hottest" topics of the present-day IT industry, *collaborative software* and *cloud computing*, it also gives the contours of the New Firm that will emerge after the dust clouds of this dramatic economic recession have settled. And it is these contours that will allow you to anticipate the significant change ahead and prosper more rapidly than others in the upturn that *will* eventually arrive.

This gray and gloomy Tuesday morning saw the publication of yet another set of economic data that was again revised downward, illustrating the seriousness of the recession that we are experiencing. What was particularly disturbing today was the rate at which circumstances deteriorated. We would have to go a very long way back to see an economy as depressed as it presently is, which makes it hard to stay somewhat optimistic.

Although such shocks to the economy often lead to apathy and inertia, I am totally convinced that this recession – as is always the case – is actually a sign of deep and fundamental transformation of the nature of the firm or organization. Those organizations that believe that the best strategy is to lay low and wait until the storm is over, are seriously mistaken. To stay with a metaphor, what we are dealing with here is not a storm that eventually will die down. It is much more a shift of tectonic plates, creating a series of violent earthquakes that will change everything forever. There is no premium for laying low and for waiting in an earthquake zone. When you are going through "hell" the main thing is to keep going, as they say! So, the time is now to adjust to this new reality and to start creating and strengthening the competences that will determine success of the New Firm. Failure to do so is risky. It might jeopardize the future of your organization but it will definitely slow you down in the recovery.

Organizations that are able to resist the pressures of operational cost cutting and keep some minimum level of investment going are clearly going to profit much quicker from the upturn than those that are totally fixated on short term survival. That is why the main management challenge of today is to create some kind of intelligent cost cutting, which to many will sound like an oxymoron. Once again the famous dilemma of management emerges:

keeping an eye on what is important while dealing with what is urgent. However, this book should help you argue for investment in collaboration in times when cash is king. It could even help you save money by accelerating the shift towards delivering software as a service.

Although a lot still remains unclear, some basics of this New Firm are emerging. Hierarchical organization will give way to market. Conversations become key and the capability to collaborate within and across organizational boundaries will inevitably determine success. Modern software tools are creating radically new ways of collaborating between people. The pervasiveness of the internet combined with new insights in software architecture is creating new possibilities for delivering this functionality from the cloud, instantly widening the scope for collaboration to a global perspective.

However, some caution is necessary, since we are at risk of technological determinism. Things are not as simple as they sometimes appear to be. This industry has become famous for its overestimation of change in the short term. It is overhyping technology breakthroughs and ignoring the difficulties that organizations will have applying these technologies in their business processes. That is why two chapters in the book are dedicated to keeping this revolution pragmatic. By debunking some common myths around collaborations and giving you the right questions to ask, this book will help you to focus on the matters that are important and to cut through all the hype.

Yes, this recession will cause violent change, but it will not do so overnight. Technology can be considered a platform for social change or a reflection of it; however it is seldom the change itself. It is my sincere hope that the discussions in this book will inspire you to find the true nature of this change and to determine how it will impact your firm.

Michiel Boreel, CTO Sogeti
Amsterdam, February 10th, 2009

Reading Guide and Acknowledgments

This is a book about collaboration and cloud. It is about collaboration between people and between companies, and about how this collaboration is changing. It is also about how markets and companies themselves are changing, or how they will have to change in order to confront changes in technology and society. And it's about software: how we use it and how we are growing towards a mix of "traditional" software and services from the cloud.

This book is written for any reader interested in IT strategy, innovation and trends in business and technology. The book is not technical, and it will show how technology can be used to create business value by improving collaboration. CIO's, enterprise architects and people responsible for IT direction will benefit from this book because it will advance their thinking on the topics of collaboration and cloud computing. Though it is not a cookbook or "how to" manual, this book will provide practical insights and guidance for the creation of your own strategy in these matters.

Specifically, we will hand you a list of questions to ask when getting involved in any initiative relating to collaboration or the cloud. Chapter 9, "Fourteen Questions to Guide the Revolution" provides a pragmatic approach to the topic. Combine that with Chapter 10, where we debunk some common myths, and you should be all set to move forward in this exciting field.

In the **prelude** we will examine the current crisis in the (global) markets, and we will talk about the options companies have when faced with turbulent times. ● The **first chapter** will then introduce the concepts of collaboration and cloud computing and how they are connected. We relate cloud computing to Software as a Service and show the drivers for these trends. We also talk about the nature of collaboration, and we sketch out several collaborative scenarios in this chapter. ● **Chapter 2** talks about the larger shifts in society. It discusses how trends in many areas are combining into large transformations, and it discusses the effect of technology on people. ● Then in **Chapter 3** we introduce the new nature of the firm, where not just competition but especially collaboration is of the essence for survival. We introduce the value chain 2.0. ● **Chapter 4** looks at the effect inside organizations when faced with these changing times. It discusses the consumer-employee, the *consumployee*, as a source of innovation, and goes into how an IT depart-

ment could respond. ● **Chapter 5** shows the different ingredients of collaboration and how they are interrelated. It also talks about email and the email-less organization. ● **Chapter 6** is about the basics that need to be in place for successful collaboration. It talks about trust, culture and rewards. Collaborative culture may be hard to create from scratch, but we will give some guidance on what's involved. ● **Chapter 7** talks about the reality of cloud or Software as a Service, and shows that a mix of both traditional software and cloud services provides greatest flexibility to deliver right-sized solutions to an end user. ● **Chapter 8** goes one step deeper into the areas where social computing for business can be of value, and the chapter discusses some of the scenarios. Here we also put Web 2.0 in a corporate context. ● **Chapter 9** will hand you a list of questions to use to keep your feet on the ground. It will serve to measure the reality of any proposal and guide you when examining cloud and collaboration further, in combination with Chapter 10. ● In **Chapter 10** we debunk some of the common myths around collaboration. ● Throughout the book, between the chapters, you will find real-life **customer cases** that show the reality of collaboration and/or Software as a Service.

Acknowledgements

The authors thank the many clients who provided valuable input for this book through interviews, discussions and (of course) projects. Their often different views on terminology and strategy showed us the range in which both collaboration and cloud computing are used in reality today. Eight of the interviews given have been transformed into the case studies that are spread throughout the book.

This book is the result of a close collaboration between a team of authors from Microsoft and Sogeti. Supporting this team of authors were the many contributors and reviewers from both companies who have helped to create and hone the content.

Special thanks go to Herve Tourpe, Laurent Dieterich, Mike Martin, Per Björkegren, Albert Hoitingh, William Heurdier and Michael Wagner for their input and/or reviews of early versions of the manuscript.

Prelude: Business Reality

The World on Fire

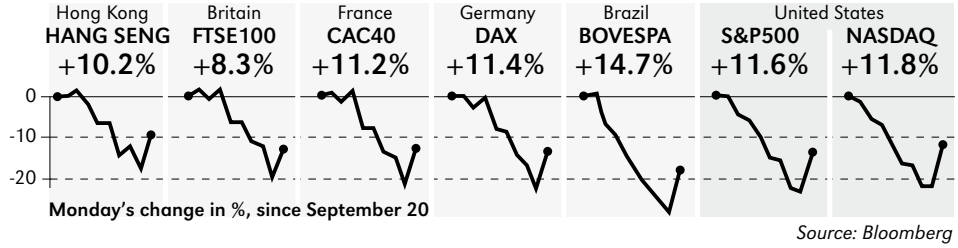
It is September 15, 2008: Meltdown Monday. The world's financial system has collapsed into a global crisis. Stock market indices are dropping by double digits and shareholder value is disappearing instantaneously everywhere. Seemingly healthy companies are forced to ask for assistance. National governments of most countries have to jump in to prevent an even worse catastrophe. Panic and uncertainty are sweeping the globe.

The world has faced financial crises before. Yet never before did a crisis have such a worldwide impact. How can this be? The day after Meltdown Monday, the *New York Times* featured an overview of the major stock markets across the globe. The surprising realization that emerges from the graph is in the pattern the markets follow. These patterns are very similar. The stock markets in different countries are *synchronized*. In other crises, when things were simpler, the markets in different countries might have moved more or less simultaneously (because, for example, the different currencies were all tied to the price of gold) but never was the connection this close. These days, the markets are much more tightly connected by real-time international trade, products and (financial) services, leading us to "in fact, the largest synchronized downturn really in the postwar period"[1] according to Charles Collins, deputy director of the IMF's research department. While we are used to thinking about local business and markets, companies are increasingly operating across borders, turning from "national" into "multinational," from local to global players.

The stock markets are apparently engaged in a close and intricate dance that was not obvious to the outside world before. The crisis, and particularly the global nature of the crisis, came as a shock to all but the greatest doomsday-prophet. Could the crisis have been averted? Is that a rhetorical question in a time when you can find all information on the web? Across the globe we see the same behavior, but people are not capable of making sense out of the

1 NPR news, http://www.npr.org/templates/story/story.php?storyId=99404776.

complexity of events beforehand. Despite all transparency, finding patterns and predicting the future is still impossible.



Source: Bloomberg

Figure 0.1: Overview of Major Stock Markets Around the Globe

Life in a Complex World

The internet is now over 20 years old. Never before has a new technology had such a wide impact on global society. The internet has changed (business) life beyond recognition:

Distances have shrunk or disappeared completely. Technology has made the earth small and flat. Information, work and capital can be spread across the globe at the press of a button. You can contact strangers and create new forms of collaboration in the blink of an eye. At the same time, the problems of the globe also find their way to everyone: everybody knows about the challenges the world is facing with regard to energy, the environment and clean water. Wars and terrorism are global themes. Everybody in the world is connected economically, technologically and socially.

Time itself has changed, or at least our perception of it. We are living in a 24/7 economy. On the World Wide Web there are no closing times or holiday closings. The doors of the virtual stores are always open to anyone – or, more precisely, to anyone with a credit card.

A *transparent* world makes secrets history and drowns us in data. There are no more secrets! Good news and bad news circles the world in an instant. Information is available to anyone anytime. We are continuously connected to the internet. Using computers, laptops, cell phones and other devices, we can access a mountain of data on request. Moreover, this mountain is still growing: everything that can be digitized is being transformed into bits. Maps, old archives, video, music, and statistics are added to the internet

every day. Every object, process and service will be able to communicate and combine autonomously with someone or something else. The internet is changing from a collection of pages to a *database of things*.[2] The question is, how do we transform this huge pile of data into intelligence? And at what cost? Quoting Herbert Simon:

> *What information consumes is rather obvious: it consumes the attention of its recipients. Hence, a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.*

IDC expects that by 2011 the digital universe will be ten times the size it was in 2006.[3] How do we keep it from exploding? How do we stay on top?

And *language*? Is language the spanner in the works? At this moment, language remains a barrier. Half of the world cannot communicate with the other half, simply because they cannot understand one another or even read each other's alphabet. However, this barrier will break down soon. Numerous software vendors are busy working to allow at least some communication across linguistic boundaries. The 100% automated, foolproof translation service is a challenge closely tied to the holy grail of artificial intelligence, but in a couple of years you might be uncertain as to what language the person on the other end is using to communicate.

The above trends not only affect us humans, but even more, they affect the way organizations operate, how society works. Companies can no longer survive on their own in this dynamic world. Any one player alone cannot grasp and properly respond to the complexity of the large interconnected world.

Technology and how it can be used is about to drastically change the nature of companies and how companies create value. The crisis of the fourth quarter of 2008 was, at least in part, made possible by using technology to connect and combine markets. The crisis itself shows that the disruptive nature of these new technologies is inescapable. Every industry has become involved and is feeling the effect.

2 http://www.kk.org/2008/11/web-100.php.

3 http://www.emc.com/collateral/analyst-reports/diverse-exploding-digital-universe.pdf.

Patterns in Complex Systems: The Butterfly Effect

In 1961 meteorologist and mathematician Edward Lorenz executed a simulation on his computer to create a weather forecast. To his astonishment, the simulation showed a completely different prediction when he rounded the number 0.506127 to 0.506 in a series of numbers. In 1963 he published his findings in the New York Academy of Sciences. He described the above result as follows: "One meteorologist remarked that if the theory were correct, one flap of a seagull's wings could change the course of weather forever." Later, the seagull mentioned was replaced by a butterfly, which led to the famous quote, "Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?"

The effect is also called the butterfly effect[4] and it is often used to describe chaos theory. This theory states that small changes in the initial setup of a dynamic system can have a huge impact in the long run, an impact that is impossible to predict. Examples of such complex, dynamic systems are the weather and also the global economy.

In the conclusion to his book *Linked* writer Albert-László Barabási[5] makes a statement about how markets are defined by interaction and connections. He shares the following thought: "The unpredictability of economic processes is rooted in the unknown interaction map behind the mythical market. Therefore, networks are the prerequisite for describing any complex system, indicating that complexity theory must inevitably stand on the shoulders of the network theory." This thought raises questions such as, what is the relation between the network called The Internet and this present-day economy? What is the cause and which is the effect in events that involve both? How can companies and governments handle this increasingly complex world?

Managing in Times of Change

A downturn does make some things easier for a manager. It helps you focus on your clients and makes it easier to prioritize. Managers looking to use this

4 "Butterfly Effect," *Wikipedia*, en.wikipedia.org, 30 November 2008.

5 Albert-László Barabási, *Linked: How Everything Is Connected to Everything Else and What It Means for Business, Science and Everyday Life*, Plume Printing, 2003.

time to change their organization for the better will also be examining their own role in this change.

Marketing guru Seth Godin wrote in his book *Tribes* that the real difference in today's business world is that anybody can create change. Everybody has the opportunity to connect and start a new community ("Tribe"). These communities nurture the leaders of tomorrow, and organizations can choose to embrace these leaders, inside or outside their organizational boundaries.

> *Management is about manipulating resources to get a known job done... leadership is about creating change you can believe in.... Leaders have followers. Managers have employees.*

The Virginia Satir Change Model[6] gives insight into how organizations can change in times of chaos. In this model, a disruption of the old order is a golden opportunity to get things done and reach new levels of performance. On his blog *The Social Customer Manifesto*[7] Christopher Carfi describes the process as follows:

- Things are plodding along within an organization or community.
- There is a "foreign object" (e.g. a new thought, or participant, or strategy) introduced into the organization.
- Things get chaotic while the community figures out how to deal with the new.
- There is a transformational thought, a "transforming idea," and a point at which the group "gets it" and starts to gel in the new world.
- Chaos declines, and performance then stabilizes at a new, improved level.

In the popular and related book *The Black Swan,*[8] written by Nassim Nicholas Taleb, more is said about events that can disrupt the old status quo. He uses a story about the discovery of black swans as an example to illustrate how accidental events can change our perception and our lives. Harry Potter was a black swan, 9-11 and the Meltdown Monday of September 15, 2008 were, too. They are unpredictable, have a major impact… and afterwards we try to make them rational and predictable.

6 http://www.satirworkshops.com/files/satirchangemodel.pdf.
7 http://www.socialcustomer.com/2008/11/satir-ical.html.
8 Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable,* Random House, 17 April 2007.

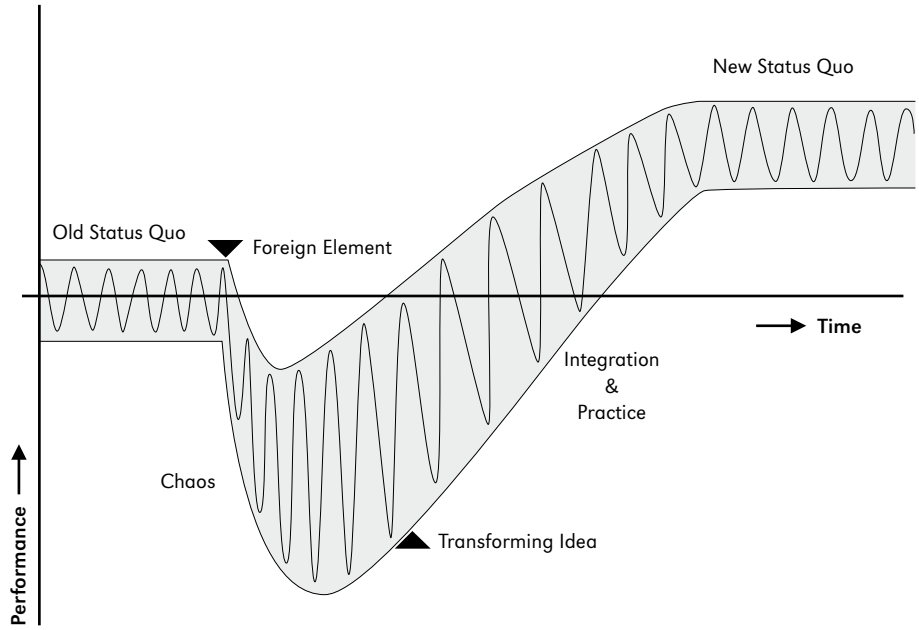


Figure 0.2: Satir Model of System Change

Times of Trouble or Times of Choice

Companies have a choice. Will a company pull back in defense or use the turmoil to reach new levels of performance? Focus on survival only, or focus on the market of the future after the crisis? Are companies able to use the economic downturn to their advantage?

The urge to survive drives companies to cut cost, reduce operations and lay off many people. Yet even survival needs direction: the American car companies are not looking back for survival, they are looking forward. The newspaper industry is not looking at reviving print media, but looking forward. This is the essential insight that will shape the leading companies of the future: focus to survive today's crisis *and* to survive the radical changes that are happening all around us.

Free[9] is heralded as one of the business models of the future. Thanks to digitization, globalization and opening of markets, the global market is

9 http://www.wired.com/techbiz/it/magazine/16-03/ff_free.

becoming more efficient. Lower transaction costs are the direct result of changing markets, and it forces companies to downsize and rethink their strategy. New sources and markets must be opened up in order to survive, and only through collaboration with others can this be achieved in time.

One thing that the current crisis has taught everybody is that change is needed. Companies can no longer ignore the reality of a globally connected, complex and volatile business world. Sticking to old routines will not suffice. A new era calls for new measures.

As for where to look for solutions, Seth Godin recently shared this insight on his weblog[10]: "The dramatic leverage of the net more than overcomes the downs of the current economy. The essence is this: connect. Connect the disconnected to each other and you create value." Organizations can create value in this new economy by connecting and collaborating.

10 http://sethgodin.typepad.com/seths_blog/2008/11/how-to-make-mon.html.

1 Clouds and Collaboration

1.1 Introduction

A promise is a cloud; fulfillment is rain

– Arabian Proverb

The topics of collaboration and cloud computing have a lot in common. For one thing, both are concepts that touch or cross the boundaries of an organization and that are closely related to corporate innovation. Both are relevant to the relation between business and IT. Both play an important role in these financially unstable times. And last but not least, both can be broadly interpreted and can have a major impact on the efficiency of organizations and IT. Microsoft and Sogeti recognized the importance of both topics, and they also saw how these developments accelerate each other. Accordingly, these companies decided to collaborate, research the topic further, and write this book. In it, we will discuss both cloud computing and collaboration in depth. We will start by exploring how these terms are commonly used.

1.2 Defining the Cloud

The term "cloud" originally came from diagrams where the internet itself was represented by an image of a cloud, yet trying to find a narrow definition of cloud computing that everybody agrees upon is not easy. The most specific definition would be that it describes a situation where some computing is taking place "somewhere else," using the internet. But then there is also talk of something called "my cloud," where the "somewhere else" might be right in your own datacenter. Clouds seem difficult to nail down.

Forrester Research in a recent presentation defined cloud computing more in terms of business economics: "Cloud computing is buying IT capacity and applications as-needed from a utility service provider." While this definition does not mention the actual delivery model, it does touch upon the expansive nature of cloud computing and notes that there is another party involved: the utility service provider. Also, cloud capacity can be consumed at a cost.

Payment may be in money or, in the case of "free" services, payment may be made by exchanging advertising value: consumer attention as currency (and some providers offer services for free simply in the hope of creating lock-in and selling upgrades or support). Another analyst firm, Gartner Research, uses different phrasing and focuses on slightly different aspects but arrives at a similar definition: "Cloud computing is a style of computing where massively scalable IT-related capabilities are provided 'as a service' across the Internet to multiple external customers."[1] It is interesting to note that Gartner specifically includes "as a service" in their definition.

Meanwhile, in less formal terms, "cloud" has been widely adopted by many parties trying to market their services as part of this new and engaging concept. Companies are increasingly including internet functionality in their IT portfolios. The internet is slowly but surely reaching into all areas where connecting to some functionality has become more important than owning that functionality. The internet is serving up solutions for situations where it's more important to get things done than to own the hardware or software that is needed to get those things done. It starts with very generic solutions, but increasingly solutions that are more specific become available online. It is in this light that "cloud" has become the label to put on all things that are provisioned over the internet, be it server capacity, complete office solutions or a CRM system.

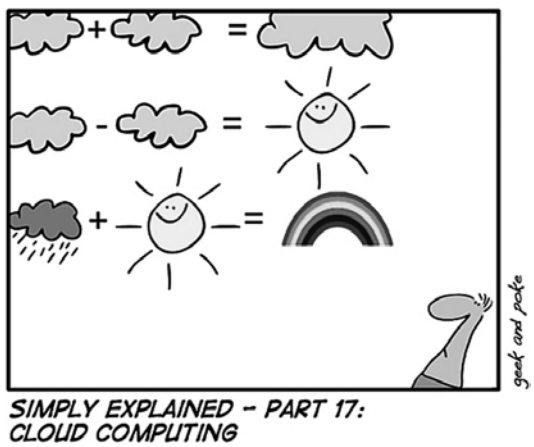


Figure 1.1: Cloud Computing Simply Explained[2]

1 http://devcentral.f5.com/weblogs/macvittie/archive/2008/11/03/cloud-computing-its-the-destination-not-the-journey-that-is.aspx.

2 http://geekandpoke.typepad.com/geekandpoke/2008/05/simply-explaine.html.

Some characteristics that are commonly associated with a "cloud" offering:

- Users and clients connect to the services using the internet.
- The service offered can range from technical services to a complete user-facing, functional solution. It can also offer part of the stack, such as storage, computing power, technical components or partial business components.
- A provider in this scenario will often aim for "economy of scale" by offering a multi-user or multi-customer ("Multi-Tenant") environment to optimize efficiency, where the fluctuations in capacity demand will even out over multiple users. The services offered then only have basic configuration options but may be enhanced with (standard) add-ons.
- The provider will generally charge for use of the service (per user, per day, per load, per call, *etc.*). There are also many providers offering services "for free" while they are still in Beta mode, or which are paid for using an advertising model.
- Services from different providers should be (but are not always!) easy to combine ad-hoc to fit the needs of the client. The term "mashup" defines the situation where multiple services are combined to (easily) create a new solution.

The cloud concept builds on the themes the IT industry has explored when introducing the Application Service Provider concept, outsourcing of datacenters and the introduction of shared service centers. The ASP concept introduced us to the concept of an external-party offering functionality on an on-demand and pay-per-use basis. Outsourcing helped us consider redrawing the boundaries of our own IT for the sake of efficiency. Shared Service Centers helped us look for communality in a broader set of needs. All these themes return in cloud computing.

These developments were then fueled by "Web 2.0" (another one of these hard-to-define terms), where simple interfacing allowed users to configure and combine the myriad of services to suit their needs, while adding a social context: doing this together with others. The resulting explosion of start-ups and innovations created a rapidly evolving market where many valuable services and websites emerged. Examples of these are sites that let people work together on documents or graphics (www.zoho.com) and sites that help people find interesting information online using social bookmarking (digg.com or stumbleupon.com). Also, providers are starting to offer all sorts of technical components online to integrate information or create new combinations online (RSS readers online that allow you to integrate news feeds,

Yahoo! Pipes and MS Popfly, thereby combining feeds and processes into new feeds or services).

Cloud Formerly Known as SaaS?

At this point you might ask: but how does cloud relate to Software as a Service (SaaS)? Both are definitely used in the same space: Software as a Service is the term the IT industry originally used to describe the model where service providers offer a hosted solution for which clients pay based on how much capacity they actually use. Software as a Service is more focused on complete solutions that are accessible over the internet. In a similar vein, there is also the notion of infrastructure as a service, where server or storage capacity is made available. Cloud computing is a broader term, which also comprises Software as a Service, whereas SaaS originally was more narrowly associated with complete solutions from specific Application Service Providers (ASP's).

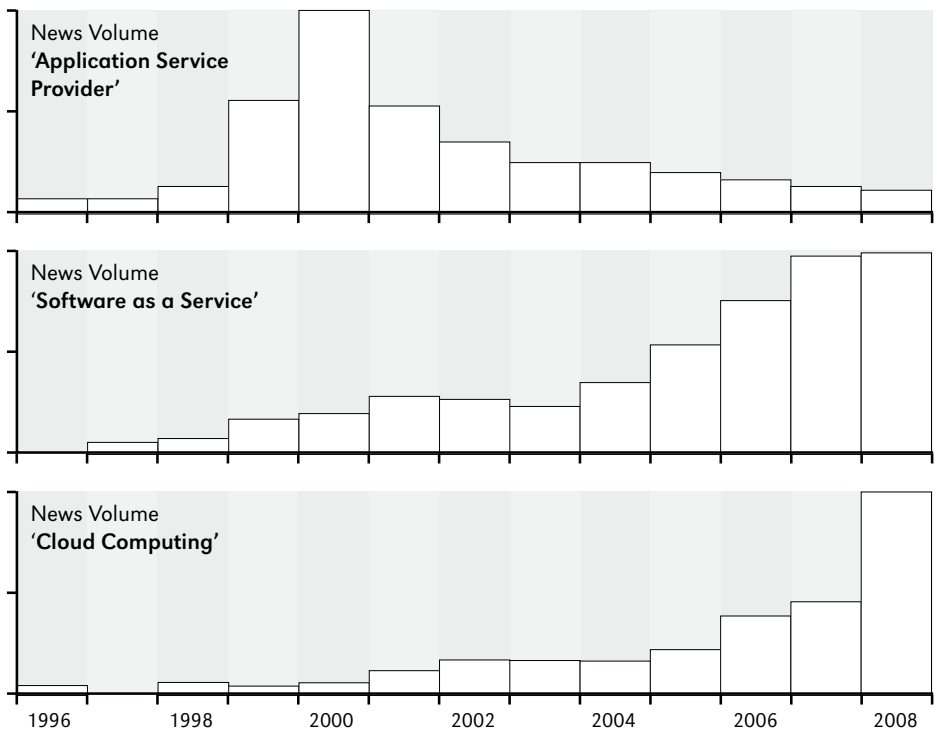


Figure 1.2: Waves of Terminology Hitting the News[3]

3 Source: Google news archives, not to scale.

If you go online today, you will find that many solutions can be provisioned "as a service," not least because it is a very attractive model for software *vendors*. Vendors offering their products as a service have an easier time dealing with the complexities of versioning and roll-outs, and they can craft very lucrative contracts. The focus of the larger providers is primarily to provide economies of scale: offer commodity services at very competing prices (cheaper than on-premise installations) and earn profit by attracting and locking in large numbers of customers. Large providers will be the only ones that can build for scale, so they are the ones able to offer commodity services (email, document management, messaging *etc.*). Smaller service providers cannot compete and must provide value with add-on or specialized services. The good thing is that the commoditized services provide a standardized groundwork on which many other services can flourish.

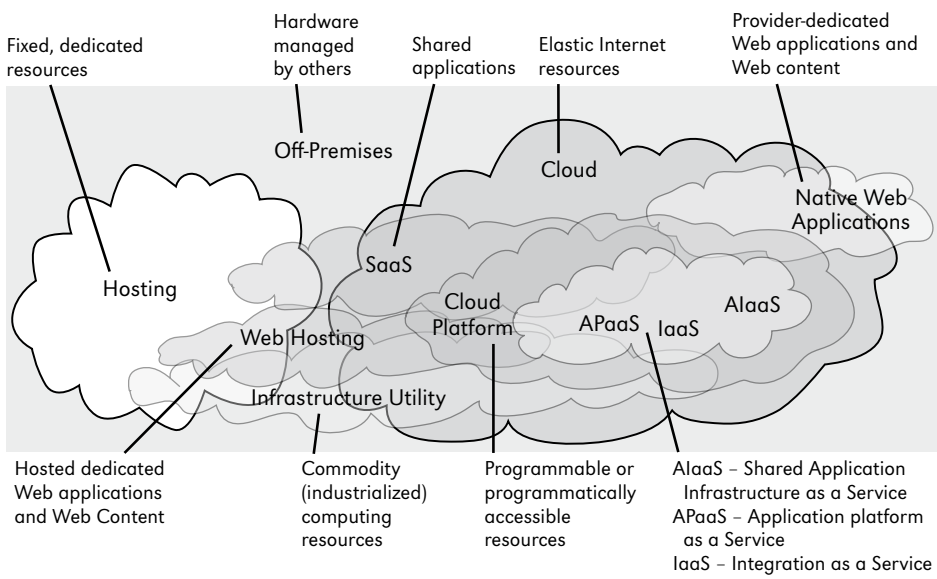
For the (potential) consumer of the service, the attraction often lies in the lower up-front cost, better financial structure (fixed versus variable cost), ease of deployment and easy scalability. It is simple to try a new solution and scale up if it proves successful. Provisioning software from the cloud is generally quicker, which comes in very useful in for example a merger scenario. Overall we could say that Software as a Service means that the CIO has **fewer worries**. The CIO has to worry a lot less about:[4]

- Upgrading the software and technology stack: with SaaS the provider takes care of most of this (sometimes client software still needs to be updated to be able to consume a service).
- Getting stuck using an old version of software for which support has expired: using SaaS you always get the latest services.
- Making sure the software needs and infrastructure match: again, something the provider will take care of.
- Maintaining multiple staging environments (testing, pre-release, development): switching extra "environments" on or off is easy with SaaS.
- Building technical expertise for the software: all you need to know is how to use the service, its contract and interfaces, not its inner workings.
- Shelfware running up a bill for unused licenses: unused services may be free of charge or capable of being turned off.

4 http://buildingsaas.typepad.com/blog/2008/06/more-saas-simplicity-additional-things-that-saas-customers-dont-have-to-worry-about.html.

- Major impact of software upgrades: a service change will generally not affect databases, platforms, *etc*.
- Performance tuning: in case of SaaS, call the provider if the SLA isn't met.
- Vendor attitudes, bad support, bad quality: a service contract depends upon a happy client as opposed to a one-time license sale that is final and finite.
- User acceptance / adapting to new software versions: fewer big releases and more small steps lead to a kind of continual software/service improvement that users can follow more easily. People act as part of the *viral* deployment of new features/capabilities.

On the downside, new uncertainties are also part of the reality of SaaS and cloud. Security and confidentiality of data are often cited as a problem (see also Chapter 10), new governance models are needed to manage a multitude of external parties, backups and archiving need to be approached differently, how we test will change *etc*. Also the question of integration and how to ensure a single user experience will demand some study. Some of these issues are addressed by new standards, some require a new way of thinking and others might simply be the cost of using SaaS.



Size of cloudlets and overlap shown is not to scale
Source: Gartner (July 2008)

Figure 1.3: This diagram from Gartner shows the wide range of terminology used in relation to cloud and SaaS

Whereas SaaS still typically involves complete applications, the options available from cloud seem to be more flexible: offering partial solutions, components, and individual services that can be used to create your own solution. There are many examples where cloud can offer almost anything as a service. Figure 1.3 is an attempt by Gartner to draw some borders around the different clouds.

Quick News Highlights from the Cloud

To give you some idea of what services are being offered from "the cloud," the following are some **random highlights** of recent (end 2008) news announcements involving cloud computing or Software as a Service:

Expresso (ExpressoCorp.com) has launced an online **real-time collaborative Excel** solution as a service that according to their website *assists in the trend toward managed on-line business communities.* ● Jobscience.com is offering new **Recruitment applications** as a Service ● Cornerstone.com has launched a new **Learning and Talent Management platform** that can be used as a Service ● At descarted.com you will find On-Demand **fleet and transportation management** services that are used by among others Home Depot. ● Etelos.com is offering current application vendors to pick up **existing applications** and start provisioning in an As A Service model. ● Zoho.com is offering a complete range of online productivity solutions such as email, document creation and spreadsheets. It is now also offering **SQL as a service**, offering to integrate data from multiple websites ● Sage is offering an **Online Cashbook** called Sage Live Cash. Having embraced the Software as a Service philosophy, the Sage Live team has gone as far as it can to exploit the opportunities of the Web 2.0 approach: integration with Google Docs and built-in link to PayPal online payment solutions. ● Mortgagedashboard has extended their **Loan Origination** System that is a SaaS solution ● Themis solutions is offering a complete solution as a **service for attorneys** to support their practice. ● Demographicsnow has improved their **customer and business profiling** SaaS offering ● Compliance 360 announced the availability of its **claims audit solution** that helps organizations manage a wide variety of claims audits and appeals, including those conducted under the CMS Medicare Recovery Audit Contractor (RAC) program. ● Litebi has launched **business intelligence** delivered via Software as a Service. ● Fi-Tek, LLC and the Northern Trust Company announced the release of TrustPortal that is also available in an ASP model: a fully integrated, straight-through solution for **trust management** that includes investment management with electronic trade execution, compliance, administration, accounting, operations, automated account review, extensive web-based report engines, and with a host of third party interfaces including complete custody reconciliation. ● Phisme is offering a service to prevent **phishing attacks** ● Webroot

announced **E-Mail Security SaaS** that protects against spam, viruses and data leakage, along with additional compliance, archiving and business continuity features. ● Winscribe has launched a **Digital Dictation solution** as a service. It will mainly be used by healthcare professionals. Physiotherapists are using Phillips devices to record their dictations, which are then uploaded to a secure site that can be accessed by secretaries who work in another building. ● Elemica is offering a service that supports **supply chains**.

Service as a Service

It is important to keep in mind that what's new is not simply that computing starts to reside in different places, but that for a user, there is less involvement with the software part of the service. The focus is shifting from the technical features of software to the use, functionality and usability of the services. Don't underestimate the appeal for a business user of being able to set up a portal, website or dashboard without needing to call the IT department. If anything, online services magnify the need for good usability.

For a business user, the important part of "anything as a service" is that it really can be "service as a service." It is no longer about software or technology; it really is about the discovery and the use of a service itself. If, for example, a business user discovers a website offering a simple tool that allows him to keep track of the competition by analyzing their rates or press releases, this same business user can start to use this service and integrate it into his daily processes. If he is then also supported with the knowledge and a simple framework to integrate the service into the other tools he's using (for example, an existing dashboard or spreadsheet), the role of the IT department will begin to shift to providing an infrastructure instead of providing solutions.

There are many vendors playing a part in the current cloud: each offering their own software solution as a service, each providing different models of payment and delivery. Blogger Matias Woloski[5] wrote a thesis on the topic of SaaS. In his research he drew a conceptual map of the SaaS space and related topics (see Figure 1.4). Though again using different terminology than, for example, Forrester Research, the elements he recognized are roughly the same.

5 http://blogs.southworks.net/mwoloski/.

Matias Woloski also created a similar taxonomic diagram showing the names and logos of some companies offering services in particular spaces (see Figure 1.5). Since this is an area that is still booming, this diagram was already outdated the moment it was drawn, but it will give you an idea of where different service providers are positioned.

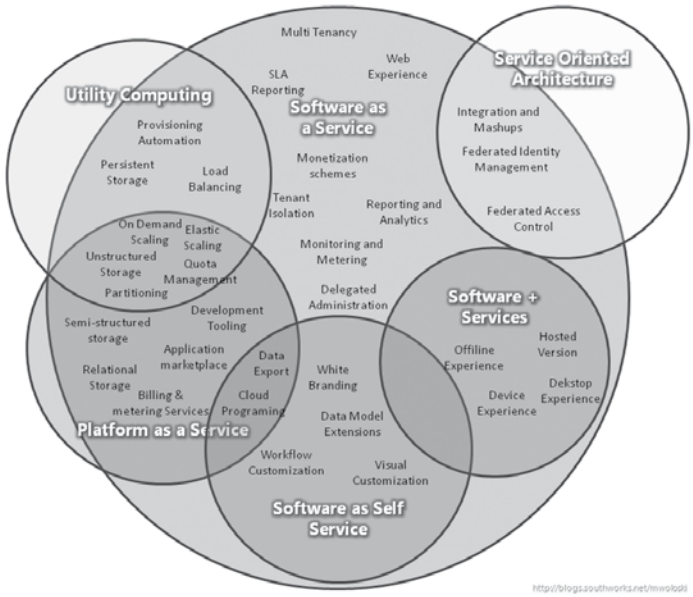


Figure 1.4: Woloski Conceptual Map of SaaS

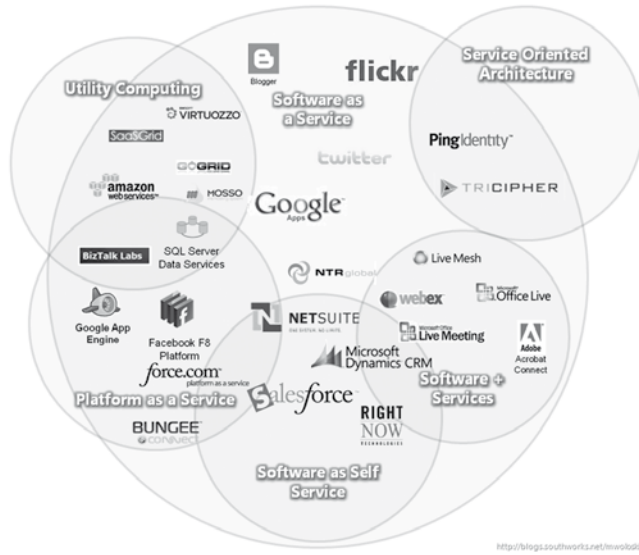


Figure 1.5: Woloski Map of Service Providers

Already from these diagrams and the news announcements above, we see that many of the services offered in the cloud are in some way related to collaboration, either by proving support for web conferencing between groups of people, by creating documents online or by sharing information about clients or enterprise resources with colleagues. So let's take a closer look at collaboration.

1.3 Organization is Collaboration

Business is predominantly carried out by organizations, and an organization is essentially an arrangement of people working together for a common goal. In other words, collaboration is the essence of any organization, and organizations exist to better organize collaboration. Still, businesses have been slow to improve and support this very collaboration as something that could be of importance to the overall success of the firm. Organizations try hard to hire the best people and build teams and departments with the necessary skills. They try to motivate people with bonuses and benefits. But when it comes to actually looking at the interaction between people, and how an organization can best support it, practices are thin. For the most part we have used proven (*i.e.* old) management models, introduced email and mobile phones, and for the rest, left people to their own devices.

An important aspect that also defines an organization is that it is active within an environment from which it is separated by some boundary: there is an "inside" and an "outside" of the organization. Where this boundary is, how large the organization within this boundary is, and how the organization is interacting across this boundary has all changed due to the power of the internet and other market forces. And it will continue to change even more, driven by competitive forces, globalization and, not least, by new technologies. The speed of change is almost real-time. As Ivan Illich once said: "We might already be beyond the age of speed, by moving into the age of real-time."

Now, how can you develop effective organizational strategy in times of change? In times of economic turmoil, there is a tendency to focus on defensive measures by trying to reduce costs and optimize efficiency. Looking at productivity will surely help in that respect. You can make people more effective and efficient; reduce the time spent on meetings, travel or searching information. Help people make better and quicker decisions, create better deliverables or do better knowledge management.

Other companies will use these times for exploring innovation: trying to find a new and future market and developing a commodity that will do well in that market. In times of market fluctuation, it's just as important to hang onto your part of the future market as it is to survive current circumstances. This too is a driver for looking at collaboration: trying to find new solutions, innovations and opportunities that can be achieved by the people who work for you. And here's the crux: even people that are *not* part of the organization can be engaged to work with you, and for you. Thanks to the Web 2.0 tools that are widely available, companies can "tap into the collective intelligence."[6] And when you succeed in engaging these people, they will be your future most loyal customers. On both ends, it pays to examine "collaboration": to optimize existing processes and to create new opportunities by starting an ongoing dialogue with your customers.

Defining Collaboration

Before moving on, it will be interesting to look at your own understanding of this concept: What is your definition of "collaboration"? Which other terms do you associate with it? In what context have you used the term in your job recently? In talking to people from different organizations, a lot of definitions of collaboration surface. Some are broadly addressing business-to-business activities; others are only using the term to talk about the implementation of specific technology. But even then, some use it to describe their conference-calling partner; others talk about their portals and intranet, and still others talk about their project management approach.

To explore your own assumptions and understanding of the concept "collaboration," here are some thought-provoking questions:

- In what context did you last talk about "collaboration"?
- Do you or some of your colleagues collaborate with competitors? Perhaps in an area where you don't compete, or where you provide commodity products or services?
- Is sending an email a form of collaboration? Is using the phone?
- Do you personally collaborate with some people more than with others? With whom do you collaborate? Who else *could* you collaborate with more intensively?

6 Don Tapscott, *Wikinomics: How Mass Collaboration Changes Everything*, 2006.

- How does the culture and management of your organization influence the way you and your colleagues collaborate? Are you personally trained or supported in how to collaborate?
- Do you or some of your colleagues collaborate across boundaries? With other business units? With people outside your organization? With friends? With anonymous people outside your company?
- Is using Facebook, LinkedIn, MySpace, instant messaging or Twitter collaboration? Can you collaborate in a virtual world such as Second Life or even World of Warcraft? And what if you contribute to *Wikipedia*?
- Does your organization have a strategy for "collaboration"? If so, be honest: was it driven by a business need or a technological capability? Is this a strategy for the short or the long term? Is it even possible to create a collaboration strategy for the long term?
- What opportunities would better collaboration inside and outside your organization bring? Could you save money or create added value?

Since collaboration is the essence of being an organization, it is a much wider concept than is traditionally discussed. The word "collaboration" in a business context has somehow shifted towards "how people work together within an organization." Yet when we interviewed clients about how they would define collaboration, we got a wide range of answers. The one thing everybody does agree upon is that for two or more parties to collaborate, you need a common goal or deliverable. After that, all definitions are possible: it might be two people collaborating, or two companies. People can be part of the same company, or crossing company boundaries. It might be done by using paper and pencil, or it might be a completely automated process where different systems interact to reach one goal. In this book we will discuss the essence of present-day collaboration, the importance of and the new modes of collaborating.

For now, we will define collaboration as:
- Interaction between multiple parties (two or more);
- All parties are doing work; and
- With a shared purpose or goal, all parties will get *something* in return for their efforts;
- It can be across boundaries.

The shared purpose or goal does not have to be the sole thing motivating the parties to collaborate; they could also have corporate or personal goals that give them the incentive to collaborate. For example, the shared goal for a

team of people working together might be to create the most user-friendly online banking solution, yet the personal goals of those individuals could be to work with a specific guru, to improve the world, to make promotion, to learn about the topic, *etc*. As long as the personal goals are in line with the shared goal, or the shared goal is part of the personal goals, collaboration can be successful. Perhaps we could say that collaboration needs "a shared goal and/or multiple compatible goals." (We will discuss this topic more in depth in Chapter 6.)

People Working with People, Business with Business

Are people collaborating, or are companies collaborating? Depending on your level of abstraction, both could be happening. Ultimately, it is human collaboration that allows companies to work together: people make the connection and set up the relationship that allows two companies to collaborate. Once the connection has been made, and both parties agree on the specifics of their collaboration, the implementation will move into the realm of technology: systems working with systems instead of people working with people. The boundary between collaboration and combination begins to fade once we look at services being combined by a third party. If someone combines an online mapping service with an online statistical information service, are the mapping provider and the agency providing the statistical information now collaborating? The two services are jointly providing a solution in which they may each perform their intended function without any contact between them. Is this "collaboration" or merely "combination"? And what if the person combining the services works for one or both providers? As you see, the introduction of services that may be used from the cloud has a direct impact on how companies "collaborate" and how collaboration evolves.

No Such Thing as Collaboration

The examples above show that collaboration, like perhaps all relationships, is often a trade: I will do this for you, if you will do this for me. I will provide you with a certain skill if you help me with the skill I am missing. Both parties invest, and both parties get something in return. The more the goal is shared between the parties, the more we would rate their relationship towards the "collaboration" end of the scale (and perhaps no money needs to change hands). The less the goal is shared, the more their relationship tends towards

the "combination" end of the scale, where one party might charge the other for contributing to the joint solution or both parties might achieve different goals through the combination. The situation is analogous to defining another company as a partner (collaboration, shared goals) or a supplier (combination, different goals). The trigger for initiating collaboration, or partnership, in this case is the realization that together something could be achieved that one party alone cannot achieve: such as providing a specific service, creating a more specialized or complex solution, or greatly improving service quality. We generally accept that in collaboration 1 + 1 = 3: I need you, you need me and together we reach a common goal, a higher goal, generate added value.

Basically, within companies collaboration is the natural model (since collaboration is the essence of organization). Inter-company collaboration is a trade for the benefit of all involved.

There are many scenarios for collaboration. In a business context, some are recurring situations: people within projects working together, looking outside the company for innovation, two companies creating proposals together, or multiple companies partnering to form a supply chain.

Colleagues Collaborating on a Project

Multiple people working together under the guidance of an appointed project manager is probably the most traditional form of explicit collaboration within an organization. Teams are formed based upon skills and (ideally) personalities. The project goals are explicit and externally defined, and the roles within the project are usually well defined.

Technical support for the collaboration depends upon the deliverables of the project, but mainly email and face-to-face meetings will be used, with possibly some conference calling if the team members are working from different locations. Conference-calling support is commonly provisioned from the cloud, using "free" conference-calling providers or providers contracted by the organization. In projects that deliver software or some other jointly composed deliverable there will be a solution that combines the contributions of the individuals, in a format designed for contribution. Software versioning systems fall into this category, and are mostly hosted within an organization itself. Other aspects relating to team function are mostly top-down: the project manager uses task assignment and project reporting tools to assume "control" over the team.

In Chapter 5, "The Anatomy of Collaboration," you will find extensive examples of how collaboration works best when supported by all available tools.

People collaborate because they must, because their job requires them to work with colleagues on projects, or as an ongoing process. People collaborate because they are assigned tasks that they can't perform alone, so they are driven to collaborate with others. But there are also other reasons to collaborate. In fact, could it also be a matter of habit? Or could it simply be for fun? Think of the newer generations: the GEN-Y-ers, the digital natives, the people who grew up in a world of the internet, mobile phones and TV on demand (TiVo). They are much more collaborative from the outset: the social aspect of people gathering in an organization is becoming more important as a way to attract and bind talented people. And regardless of financial turmoil, attracting and motivating young people will be one of the challenges businesses face in the coming decade.

Motivations to collaborate can be anything from personal beliefs to a longing for status to a direct need for the deliverable that is subject of the collaboration. People don't only collaborate because they need to; they also collaborate just because it's the natural thing to do and because it's fun. This social aspect of collaboration is where many organizations find a lot of the value of improved collaboration. Giving people new ways to create social bonds within the organization and allowing ad-hoc collaborations gives people the opportunity to create "friends" within the company. It also potentially creates the most problems: how do we manage this, and how do we stay productive (if there is such a thing as productivity that you can measure and manage).

Collaboration and Cloud Come Naturally for Digital Natives

Put a team of recent graduates on a project and within five minutes they will be procuring a portal for collaboration, exchanging instant-messaging ID's and adding one another to their Facebook pages. The team goals are important; the deliverables and communication is important, but the rest of the structure is fairly free and left to the individuals' discretion. Commitments are deliverable-based and the team members will work whenever they feel like it: at night, early in the morning, or during regular business hours.

The new expectations these digital natives bring to the employment market puts pressure on organizations looking to attract the brightest students. When support is not available from inside the company, these digital natives will procure from "the cloud." When "the cloud" is off-limits, and there is no internal alternative, they are very likely to pack up and leave for a place where they CAN work the way they like. A higher dislike for bureaucracy, the experience of growing up during the internet-era with wonderful stories of how startups treated their employees, and an international orientation make this generation difficult to attract and to motivate.

Collaboration and networking are natural – having over 200 friends is nothing special. Approaching one of these friends to get some information is the natural thing to do, and vice versa. Responding to the needs of the network is also characteristic of this generation.

Free Collaboration?

When people have different motivations to collaborate, how is that for companies? People can contribute to projects for many reasons, how is that for commercial organizations? Does it pay to freely collaborate? Perhaps surprisingly, on the internet "free" is often a viable business model. As with individuals, there are many different drivers for companies to offer "free" collaboration; for example, to benefit from the resulting product (e.g. in open source), to gain a marketing position or attract future clients, or to build corporate image by showing you are committed to "improve the world." Many companies don't expect immediate returns but act on a kind of "pay it forward"[7] principle. The collaborative projects the companies enter into can also be on a wide range of subjects, from the creation of software to solving world problems, from creating books to collaboratively finding innovative solutions to industry problems.

Innovation and Creation

Creating a concrete deliverable together is straightforward: split up the task, contribute parts and combine them to construct the complete deliverable. Even this will take coordination and skill to accomplish, but at least it is a concrete and often measurable task. *Ideation*, creating new ideas together or creating "innovation" is a lot less concrete. Ideas are hard to plan, measure or manage. Yet continuous innovation is what makes a company profitable. So how does collaboration help innovation? The answer to this question lies in "crowdsourcing innovation" or "open innovation": involving a larger than usual group of individuals in company innovation.

The idea is that the wider the search for ideas, the greater the chance that good ideas will be found, the greater the chance that good ideas may be prof-

7 http://en.wikipedia.org/wiki/Pay_it_forward.

itably combined, and the better the ultimate product or service. (In turn, a better product may demand a higher price). If I could enlist everybody in the world to help me solve a problem, or even just everybody on the internet, I am sure that someone out there would be able to give me a solution almost instantly. However, there is a catch: involving many more people would only be manageable if I did not have to handle coordinating and interacting with all of them. If I must personally deal with every idea, I will never find the good ideas among the not-so-good.

Crowdsourcing innovation is a unique form of collaboration where anyone with a stake in a product or service can contribute to defining and improving that product or service. Consumers work with producers to create products that best serve the consumers' needs. Employees can be invited to help improve the inner workings of an organization, but will also be challenged to come up with ways to create better value for the end consumer. Almost any creative process can be crowdsourced to benefit from the creativity of the crowd: logo design, chemical research challenges, architecture design, product development, writing and others.

Innovation is not the only thing that can be crowdsourced: the production of deliverables can also be tendered to "the crowd." The most specific example of this may be in software development where on TopCoder.com "the crowd" can build software to requirements.

Collaboration with the Crowd for Innovation

In a scenario where a company is looking to crowdsource parts of their research and development, the aim is to allow the best ideas and solutions to surface almost automatically. The company would achieve this by posting their challenge online and inviting people to post suggestions. Usually this is done by providing a very free-format platform where ideas can be posted, commented on by others then cataloged and rated by the people online. The creators and the people who do the rating may not be the same people, but will be part of the same community.

Depending on the size of an organization, crowdsourcing can also be initiated strictly within company boundaries: not involving the general public but asking employees to take part. While the principles might be generally the same, the implementation will

be different. For one thing, internet scale is different than company scale. If 1% of your internet audience responds, that is a large group of people responding. If 1% of your employees respond, it is less likely that the next greatest idea will be born. The most successful crowdsourcing initiatives involve the internet, invite the general public to contribute, and have a clearly defined "challenge."

The reward for contributing to this collaboration might be anything from "eternal fame" (if your suggestion could become the name of the latest Coca-Cola product, that might be enough motivation to take part) to a monetary award or some other incentive. The open source software community teaches us that financial reward is definitely not essential for an open initiative to succeed.

An interesting example is Talpa Creative (www.talpaCreative.com) where the community is invited to help create new television formats: coming up with new ideas but also taking existing ideas to higher levels. Voting, pitching ideas and competition are part of the platform. The rewards are financial but small, and a part of the attraction is being the one who came up with the next "Deal or No Deal" or "Big Brother" show.

Current crowdsourcing initiatives use fairly basic, text-based tools. User identification and user profiles are important for building credentials, while forums or discussion boards can be used to exchange ideas. At this time the use of features like conferencing, video, and instant messaging for crowdsourcing is rare. This might change over time given the fact that video is gaining ground as a medium of expression over the current text-and-images internet.

1.4 The Cost of Crossing Boundaries

The two aspects that define an organization are "collaboration" and the fact that there is a boundary between the company and its environment. Ever since the internet caught on, there has been talk of it sounding "the end of organizations": The idea is that thanks to the internet, individuals should be able to work together in the same way they could within an organization, but without the need for corporate overhead such as management and legal structures. So far this hasn't proven true, and it doesn't look like it will come true anytime soon.

It is worthwhile to see what is happening to this external boundary: what is "inside" the company and what is "outside." What defines you, and what sets you apart from the competition?

In 1937, Ronald Coase wrote a treatise called *The Nature of the Firm*. In this book, he examines the way markets operate, and focuses specifically on the question whether a certain economic task will be performed by the organization itself, or whether it will be left to the market. For this research and other related topics, Mr. Coase eventually won a Nobel Prize over 50 years later.[8]

The most important question Mr. Coase tries to answer in his book is why organizations exist. Why is it not always cheaper to let the market fill a need? If an ideal free market will set the benchmark price for a commodity according to competition among suppliers, why would any company choose to hire people instead of bidding their needs to this market? Why can't we crowdsource every aspect of every enterprise? Why does it pay to hire people and let them work "within" company boundaries instead of letting a collection of "freelancers" do the work? The answer to these questions lies in the concept of transaction costs: even IF a market were "ideal" (and more and more it seems that not all markets reach the "ideal" state), the cost of the pricing mechanism and other costs will make it too costly to tender every task to the market. Pricing costs are the costs expended to find the correct service, to negotiate a price and to buy and control the service. All this takes effort, and it makes the price of the service consumed higher than the market price of the value provided by the service.

As an example, repeatedly finding a suitable programmer who will update your website with new business functionality, and reaching a new agreement with that programmer every time, will, in the long run, probably be more expensive than hiring a programmer and doing away with the constant renegotiation. The same principle is valid at all levels: the action of "outsourcing" itself is costly, thus challenging the business case for outsourcing.

Ronald Coase also noted that the larger an organization becomes, the higher the "internal" cost of coordination and the risk of mistakes will become, shifting the balance in favor of the market again. He realized that companies will expand until the case for further expansion is no longer favorable. This in turn has led to the formulation of Coase's inverse law, which states that these days any organization will *shrink* as long as the cost to do something inside the company is higher than the cost of doing something on the open market. If some specialized company can maintain your website at a lower

8 http://en.wikipedia.org/wiki/Ronald_Coase.

cost than your own IT department, there will be a push towards moving these activities outside the organization.

There is some debate as to what the impact of internet and information technology is on transaction costs. IT could perhaps add to the transaction costs, by overwhelming the buyer with information to sort through or by making it difficult to consume a specific service due to integration issues. Generally IT is believed to decrease transaction cost, making markets more efficient and making the choice to run parts of your business "as a service" more logical. For some markets, technology will bring more transparency, which will decrease transaction costs almost immediately. It will be easier to find the right service or product, find the right price and determine the right contract. In the case of cloud computing, the argument can also be made that the market will start to offer more and more granular services that challenge the assumption that "internal is cheaper than external" on many new levels.

With changing transaction costs and new services being offered on the market, any organization that needs to be competitive will be asking, "why are we a company" and "should we do this ourselves." This is the reason why companies are partnering and collaborating in value chains: to find the right balance between transaction costs (between the parties collaborating) and internal cost.

Serving Clients Together

A very specific case of collaboration that occurs regularly is when two parties partner to create a joint proposal. The two partners are trying to offer a solution or product that could only respond to the need with the input of both parties. Responding to requests for information or bidding for contracts are situations where, under great pressure, people from multiple companies try to create a winning proposal.

The best proposals are created when both parties share a vision of the end result and there is a tight team working to combine the assets of both companies. Tools used are mostly email (a sad reality is that this is probably still the most-used tool in these cases), portals and conference calls. Usually there is a trigger-and-response system to find the best solutions ("Does anyone know of any solution to this problem…") and a strictly coordinated effort to compose a coherent deliverable ("You are responsible for answering questions 1 and 5"). The process tends to start in a more free-format style (solution visioning) and become more practical towards the deadline. For more complex proposals, a project management tool will be used to track progress and dependencies.

It is interesting to note that the people working together in these joint proposal teams usually work as individuals, all trying hard to create a winning deliverable. Later in the process, the legal department and management will take a more "corporate" role and look at the partnership and contract side of the collaboration: is what we are offering balanced, who gets what, and how will we deliver together.
If both parties are equal partners, it raises the question of who will support the collaborative tools. There is a good case to be made for using a third party provider (in the cloud), thereby allowing both parties equal access.

Competition in Government?

But what if you are working for the government? Are you competing, too? Not surprisingly perhaps, yes. While in any government agency there might be little or no competition at the highest level, at many other levels there *is* competition. There may be competition between agencies to win execution tasks (and corresponding budget allotment), and there may also be competition with the open market. The responsibility for national defense may rest solely with the state, but supporting the HR for the employees who work in defense could be open for competition on an open market. Providing social security might be the responsibility of the government, but printing and mailing monthly statements could be performed by parties outside the government. (And at any time, if the transaction cost of outsourcing becomes too high, the government may decide to start competing: if we can do it cheaper in-house, we will.)

The Reality of Crossing Boundaries

Cloud and cross-boundary collaboration are a natural fit: if information is flowing between companies, using a third-party provider will be a logical step. The old marketplaces and business hubs were precursors that led us to realize that whenever we work together, we do it outside the boundaries of both organizations. If we want to involve multiple parties, the trust and identity issues can sometimes be solved more easily in an impartial forum.

There are some thorny questions related to the cross-boundary aspects of cloud and collaboration. Most of these have to do with the fact that corporate data may also reside outside the corporate domain, leading to questions about con-

fidentiality, corporate governance and traceability. Also, as the maintenance and operation is outside your control, reliability and recoverability demand extra attention. Evidently some data is best NOT left to the cloud, and some scenarios are still best run from your own software. This means that organizations will adopt a mixed model where a combination of software and services is used to create the best, and most reliable, support for the end-user. The decisions as to what may go to the cloud and what should remain on-premises are based upon the issues described, but also upon a more strategic question of an entirely different caliber: namely, what is your competitive advantage?

1.5 Conclusion

Cloud computing has become one of the scenarios for provisioning IT. It is attractive on many levels, but it also has some intriguing and thorny issues associated with it. Collaboration is the essence of an organization, and has been traditionally under-supported by technology. Cloud computing and collaboration offer a combination where the actual use is paramount, putting the user back in control, and where boundaries are no longer obstacles. In the following chapters, we will examine the trends that shape contemporary business reality and we will see how collaboration on a grand scale has an impact on how organizations evolve. Topics such as technological discoveries, competition versus collaboration, and transparency will be covered, and we will discuss the new nature of the firm.

Case: Stimmt's Jump to SaaS-Powered Collaboration Helps Consultancy to "Practice What it Preaches"

Collaborating in the Cloud an Ideal Strategy for Small Consultancy

In no sector has collaborative business supported by Software as a Service been embraced more enthusiastically than among small businesses. A look at the SaaS-collaboration strategy adopted by Stimmt AG, a 15-person Swiss consulting firm specializing in user interfaces, shows why.

The company was struggling with a Lotus Notes platform that had to run on a mix of Windows and Mac laptops, requiring almost constant maintenance. And the fact that Stimmt's employees often work from their homes or from customer sites, requiring time-consuming replication of Notes data, made supporting the Notes infrastructure a bigger burden than a small firm like Stimmt could shoulder. Moreover, there was little hope of collaborating with customers remotely.

When management finally deemed the situation untenable in 2007, it considered two options: a fully managed centralized IT environment hosted by a third party, or a browser-based SaaS approach. Eventually, Stimmt selected the SaaS path for a few reasons. Not only was the pricing more attractive, but Stimmt would benefit from constant, and seamless, updates to whatever tools it selected, and SaaS applications would afford employees the most flexibility in creating their own work environments.

Suite of SaaS tools Delivers Flexibility and Simplicity

With the decision made to standardize on SaaS applications, Stimmt chose a few strategic tools that have become its de facto computing platform. Google Apps are used for email and calendaring; an on-demand version of Confluence Wiki enables internal and external collaboration, data storage, and the creation of real-time executive dashboards; Genius Enterprise Project supports project management; and Longjump, a lower-cost alternative to Salesforce.com (less than one-sixth the monthly subscription fee per user), serves not only as Stimmt's CRM system, but also as an on-demand application development platform that allows the company to build its own on-demand apps. All of these tools are accessible to employees wherever they are through a browser, and access to collaboration workspaces is easily provided to customers.

If it sounds to security-obsessed technology executives like Stimmt threw caution to the wind, to an extent it did – by its own design. Founding Partner Lukas Karrer was confident that once the data was stored in this array of cloud applications, he could trust the selected vendors to ensure the safety of Stimmt's data. With employees given a fixed budget to choose their own hardware and establish their own remote

infrastructures, he didn't feel there was any need to worry. "All they need is a working browser," says Karrer. "I don't care about the rest. I don't really care about the laptops or desktops our employees use. I don't care about the backups of the employees' laptops, because everything is in the cloud."

There were no setup costs for starting the various application subscriptions. It took Karrer and one employee just two weeks last December to complete the whole migration process, extracting the most important data from Notes and importing it into the new tools, then configuring the tools to meet Stimmt's basic needs. Karrer estimates the company invested about € 5,000 and 20 full days of employee time adjusting and customizing the tools to suit the firm's business processes. He continues to devote about one day a month to managing those customizations.

Elegant Environment Boosts Employee Morale, Impresses Customers

The results of Stimmt's SaaS/collaboration strategy have been transformative. The company's newfound mobility allows data access from any location. The scalable business environment makes it a snap to add new people, and subscriptions can be added or canceled on the fly. The company is getting more work completed, and it's doing so more simply and efficiently. And all this added functionality hasn't forced any additional technology spending. "I didn't reduce IT costs, but I greatly enhanced functionality, and I greatly enhanced usability for our employees and clients," says Karrer.

Adoption hasn't been an issue. The staff had grown so frustrated with Notes that team meetings had digressed into a stream of complaints about the company's technology. Employees have embraced the new suite of tools, and the complaining has ceased, causing an ecstatic Karrer to proclaim, "Morale has skyrocketed."

That's not to say there haven't been lessons to learn along the way. Karrer says he's seen that some SaaS vendors seem reluctant to evolve from the shrink-wrapped software mentality. They need to adjust their approaches to service-level agreements, and be quicker to incorporate customer feedback given the inherent flexibility of their products. But he's also learned that SaaS enables him to be much more experimental, as correcting mistakes is much simpler.

Perhaps the best – and most unexpected – result is the feedback from Stimmt's customers, who are all in awe of the elegance of the firm's technology environment. It's an ideal image-builder for a company that specializes in helping clients design usable interfaces. "They can see that it's so easy to work with these tools," says Karrer. "You've got to practice what you preach."

2 The Impact of Technological Revolutions

2.1 Introduction

We have seen that there is considerable pressure on companies to improve performance, especially in this economic climate. In this book we are looking at collaboration, the very essence of organizations, and cloud computing, which is a model for provisioning technology. So how does technology help business, and how does business benefit from changes in technology? In this chapter we will show what the effect is of technological revolutions, and we will demonstrate that these are indeed special times that warrant a closer look at collaboration.

Management guru Peter Drucker (1909–2005) was originally a writer. In 1943, he was asked by the management of General Motors to report on work-floor practices. However, numerous employees kept a wary eye on Drucker. They greatly mistrusted him. They were especially worried about what he might say to management behind their backs. Surely, this could only have negative consequences?

To gain their cooperation, Drucker promised them that all his observations would appear in book form. The tale of the work floor would therefore not be mindlessly filed away in a report. In the end, the publication resulted in his bestseller, *The Concept of the Corporation*, a book in which Drucker elaborates his far-reaching ideas about decentralized decision-making.

Peter Drucker was a visionary, someone who was far ahead of his time and one of the few who had a clear perspective on the future of companies. Many other works have come from his pen over the years. The central concern of his writing remains the manner in which management has to change its decision-making practices by placing progressively greater trust in the observations and decisions emanating from the work floor and streaming up to the organization's higher layers. Such changes in management thinking are often underpinned by technological innovation. Drucker elaborated on

these ideas in his 1993 *The Post-Capitalist Society*,[1] encapsulating them in the following statement:

> *Every few hundred years in Western history there occurs a sharp transformation. Within a few short decades, society rearranges itself; its worldview (paradigm), its basic values, its social and political structures, its arts, its key institutions. Fifty years later there is a new world.*

2.2 The Delicate Balance Between Technology and Community

Technology changes society. This mostly occurs in very small ways, which are nearly imperceptible, but sometimes they are ground-breaking and immense, turning the entire world on its head. Such upheaval occurred with the introductions of the train, car, airplane, steel industry and steam engine. Each had an enormous and revolutionary impact on society.

We are now, once again, standing on the verge of a fundamental transformation, a *paradigm shift* (such as it is elegantly labeled) that will change the world as we know it for good. The internet and its underlying technology are responsible for this radical upheaval.

The way in which we search for information and share it with each other has changed; online search engines and Wikipedia have become the accepted instruments for this activity. Listening to music is now a different experience than it has been in the past. No longer do we collect vinyl records or plastic CDs; now we use online stores in order to place our music collection of thousands of songs on our portable mp3 players. Hyves, MySpace, Facebook, Twitter and FriendFeed are the new ways of briefly communicating with each other. These social networks have replaced what has now become traditional email. We no longer buy books in the bookstore but acquire them from Amazon. We set up our own store with the help of eBay. And some time ago we stopped watching television by sitting in front of a colored screen at a scheduled time; instead we individually click on our favorite programs at YouTube, use TiVo, the TV station's website or download them (often illegally) from peer-to-peer networks.

1 Peter F. Drucker, *The Post-Capitalist Society*, 1993.

The Convergence of Knowledge

Compared to previous technological revolutions, there is one big discernible difference: current technology is causing various areas of knowledge to merge. The exact consequences of this fusion are still unknown, but it is certain that these effects will be felt by people, companies and organizations in general. Our entire society is affected.

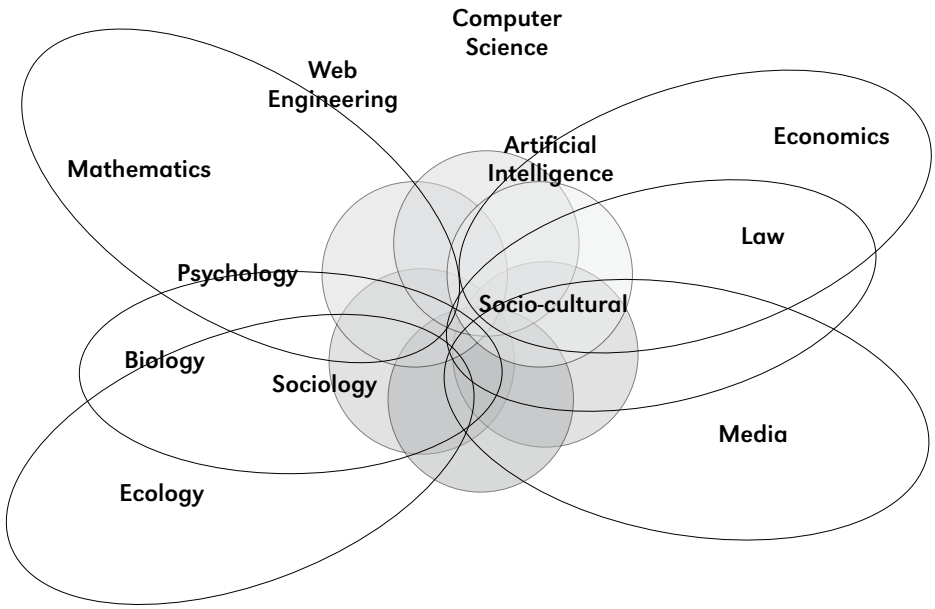


Figure 2.1: Web Science Research Initiative Map of Fields of Knowledge

Figure 2.1 comes from the website of the Web Science Research Initiative,[2] set up by World Wide Web founder Tim Berners-Lee. This organization aims to chart the ways in which the internet is changing our society, and it does so by examining how various fields of knowledge are unifying.

One of the direct consequences of this evolving merger of knowledge is that we are rediscovering people, members of society with whom we lost touch long ago. Long before the industrial revolution, the farmer and the baker knew precisely what they might expect from each other. The farmer worked the land and the flour from his harvested grain ended up at the baker, who then baked the farmer's bread. If the farmer were not satisfied with the taste

2 http://webscience.org.

of the bread, he would complain directly to the baker in order to have him modify the recipe. The interaction was an entirely simple form of collaboration based on direct communication.

The industrial revolution's fascination with maximum efficiency made sure that people only worried about their own tasks and never, or seldom, got together to deal with all the types of problems on the work floor. The balance between technology and community was disturbed so that it tilted to the advantage of technology. As the German thinker Karl Marx astutely states in his book *Das Kapital* (1867):

> *In handicrafts and manufacture, the workman makes use of a tool, in the factory, the machine makes use of him.*[3]

As a direct consequence of this change, people grew distant from one another. This dissociation undoubtedly presented business operators with an enticing opportunity. In gaining control over the new technologies, they could seize power and inflict their whims and fancies on their customers. Companies could impose their will on consumers by claiming to know what was good for them. The first assembly line, enabling Henry Ford to sell an enormously large number of cars, is a perfect example of this thinking. In a sense, he invented the wheel.

Internet technology is shifting the manner in which companies and people communicate and collaborate with each other back to the more even keel that we had previously enjoyed. Consumers are being taken more seriously. Their voices are being heard. Once again, there is a dialogue between both parties, between producer and consumer. The *prosumer* – a term launched by Alvin Toffler[4] to describe consumers who can fill their own needs using technology – is a consumer who counts.

Consumers are Demanding Unique Experiences

For some time now, consumers have no longer been fixated on mere possessions but have become concerned with total and unique experiences. Consumers are demanding a say in the processes that ultimately yield goods or

3 *Das Kapital*, pt. IV, ch. 13. sect. 4.
4 http://en.wikipedia.org/wiki/Alvin_Toffler.

services. *The system is the product*.[5] Consumers strive to play a part in this process of collective value creation. A product, service or brand must be customized so that it contributes to their personal identity.

> *Call them the "weapons of mass collaboration." These changes, among others, are ushering us toward a world where knowledge, power and productive capability will be more dispersed than at any time in our history – a world where value creation will be fast, fluid and persistently disruptive. A world where only the connected will survive. A power shift is underway, and a tough new business rule is emerging: harness the new collaboration or perish.*[6]

We are discussing collaboration and technology. In particular, we talk about the ways in which technology can be used to facilitate collaboration, not just among people but also among companies and even applications.

As indicated above, technology is causing us to enter a new phase in collective interaction, changing our society for good. To properly understand what this new form of collaboration looks like, we will first examine the past and study the consequences that a new technology has for people, commercial companies or any other kind of organization.

2.3 Technology's Poisoned Chalice

The introduction of new technology always generates resistance. In the beginning, a discovery is only embraced by a small group of people. When more and more people adopt the technology, the "tipping point"[7] is ultimately reached and the technology becomes commonplace.

For a technology to be widely accepted it must first overcome several hurdles. The introduction of a new technology renders another technology obsolete. The companies that were profitable as a result of this older technology will not easily give up their market share, sticking to old technology and inhibiting innovation. Every innovation also has its advantages and disadvantages, some of which are not always readily foreseeable and only become discern-

5 http://richardsona.squarespace.com/main/2006/6/15/motorola-q-snatching-defeat-from-the-jaws-of-victory2.html (see also Chapter 3).

6 Don Tapscott, *Wikinomics: How Mass Collaboration Changes Everything*, 2006.

7 Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference*, Little Brown, 2000.

ible at a later stage. One of the first people to reflect on the negative consequences of new technologies was the philosopher Socrates.

Figure 2.2: Thoth[8]

Legend of King Thamus and the God Thoth

About 370 years before the Common Era according to the Western calendar, Greek philosopher Plato (427–347 BC) committed to papyrus his account of a dialogue between his teacher, Socrates (470–399 BC) and a certain Phaedrus. In this dialogue, Socrates discusses the legend of King Thamus and the god Thoth, who was renowned as a great inventor.

According to the Egyptians, Thoth was the founder of knowledge, religion, philosophy and magic. The Greeks later added an even more impressive list of discoveries. According to them, he alone was more or less responsible for the origins of all fields of knowledge, including astronomy, astrology, mathematics, geometry, medicine, theology, reading and writing. All these disciplines were said to have sprouted from Thoth's brain.

Thoth did not want to keep all knowledge to himself. He wanted to share it with humanity. In an audience with King Thamus, he tried to convince the king of the virtue of his latest discoveries. Thoth was especially enthusiastic about writing. According to him, writing would improve both the memory and the wisdom of the Egyptian people. To the god's dismay, the king showed no interest. In fact, he said to Thoth:

> *Most ingenious Thoth, one man has the ability to beget arts, but the ability to judge of their usefulness or harmfulness to their users belongs to another; and now you, who are the father of letters, have been led by your affection to ascribe to them a power the opposite of that which they really possess. For this invention will produce forgetful-*

8 Source: http://www.philipcoppens.com/thoth_01.jpg.

ness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them. You have invented an elixir not of memory, but of reminding; and you offer your pupils the appearance of wisdom, not true wisdom, for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant and hard to get along with, since they are not wise, but only appear wise.[9]

The legend of King Thamus and the god Thoth does not just present the positive or negative consequences of writing. It also draws attention to the possible destructive impact of technology on communities and on humanity in general. A new technology can either provide a community with an enormous boost or bring about its immediate destruction.

Technology is a Tyranny

In recounting this tale, Socrates anticipates the ideas of French sociologist, philosopher and theologian Jacques Ellul (1912–1994), who published a book called *La Technique ou l'Enjeu du Siècle* in 1954 (the English title is *The Technological Society*). In this work, Ellul explains how he regards technology as an element that disrupts society. In his eyes, technology is a tyranny for humanity.

What we are witnessing at the moment is a rearrangement of the world in an intermediate stage; the change is not in the use of a natural force but in the application of technique to all spheres of life.

Technology Leads to Self-Amputation

The prophet of our electronic age, Marshall McLuhan (1911–1980),[10] made a similar pronouncement in 1964 when he coined the maxim "the medium is the message."[11] According to McLuhan, the content of the message is not very important. Rather, the underlying technology (the medium) has far more

9 Phaedrus 274e-275b in Plato, *Plato in Twelve Volumes*, Vol. 9 translated by Harold N. Fowler. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1925.

10 Hans Achterhuis labels McLuhan as the "prophet of our electronic era" in his series of lectures *Mensbeeld en techniek* ("Portrayal of man and technology"), ninth Socrates lecture, 1992.

11 Marshall McLuhan, *Understanding Media: The Extensions of Man*, McGraw Hill, 1964.

significant consequences for the proximate surroundings: "We shape our tools and thereafter our tools shape us."

In McLuhan's view, technology is an extension of the human body. For instance, the car has replaced people's feet. Thanks to the car, we are able to move from A to B much more quickly, while also being sheltered from a heavy downpour. Increased mobility and comfort are certainly two of the most evident advantages of using a car.

Unfortunately, technology also has disadvantages. When a technology is used excessively and even to the point of overuse, it results in a form of "self-amputation" that unquestionably has negative effects. In the case of the car, driving has led to less walking, reduced muscle strength in the legs and correspondingly augmented problems in relation to health and obesity. The number of fatal and non-fatal accidents has also consequently risen due to motor-vehicle use. And the air we breathe is contaminated by the large quantities of exhaust spewed out by the internal combustion engine, giving rise to all types of lung disease. Technology does not therefore only affect us as individuals but it has consequences for the community as a whole.

2.4 Six Technological Revolutions

Technology has a large impact on people and organizations (commercial or any other kind) and therefore on society at large. An uneasy equilibrium exists between technology and community. In the past, the effects of new technologies on society have been studied by various researchers.

One of the first scholars devoted to this field was the Russian economist Nikolai Dmitriyevitch Kondratiev (1892–1938).[12] At the beginning of the twentieth century, he investigated the relationship between the price of goods and investment behavior. His research, based on data from the period of 1789 to 1922, revealed a series of four wave movements in the economy, each with its own peak and valley, boom and bust. Strikingly, these trends displayed consistent features, each of the cycles encompassing a period of fifty to sixty years.

12 See http://en.wikipedia.org/wiki/Kondratiev_wave.

Kondratiev announced his findings to the world in *The Major Economic Cycles*, a book published in 1925.[13] His research clearly demonstrated that the waves were based on the accumulation of fundamental innovations, each underlying a corresponding technological revolution. Technological development was not evolutionary but revolutionary, as it occurred in jumps associated with fundamental transformations of industry and the economy, which affected all of society.

His insights, which were controversial at the time, did not earn him any gratitude. In 1938, Josef Stalin gave the order for the scholar's arrest, and he was executed shortly afterwards.

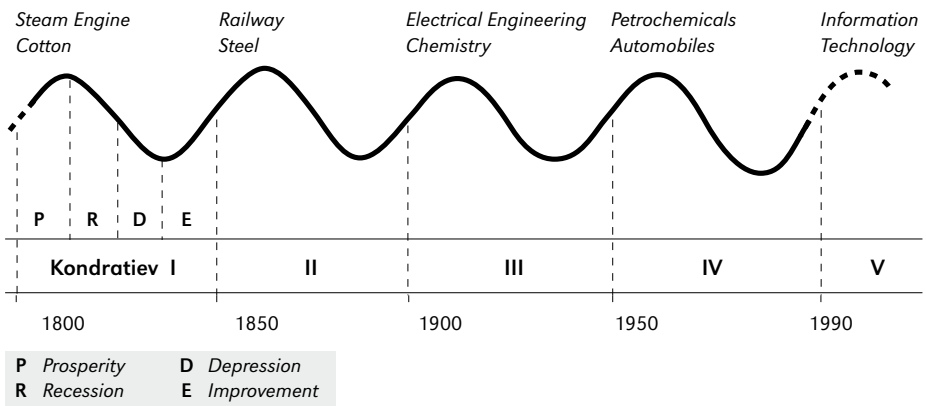


Figure 2.3: Kondratiev Wave[14]

A fifth wave has since been detected, and there are now five identifiable historical trends:[15]

- The first boom period approximately encompasses the years from 1780 to 1815, an era that saw basic innovations in the textile industry, the use of water power, and the construction of ports, canals and paved roads.
- The second peak more or less coincides with the period from 1845 to 1875 and involves such basic innovations as the railway, gas lighting and the telegraph.
- The third upswing roughly covers the years between 1890 and 1916, involving innovations in the electronics and automobile industry, as well as the emergence of chemistry.

13 N.D. Kondratiev, *The Works of Nikolai D. Kondratiev*, Pickering & Chatto Ltd., 1997.
14 Source: http://upload.wikimedia.org/wikipedia/commons/d/d4/Kondratieff_Wave.gif.
15 Source: "ESB no. 4245," p. 171; article by Alfred Kleinknecht, professor of innovation at Delft TU.

- The fourth surge corresponds to the postwar period of 1944 to 1985 with its rapid proliferation of long-lasting household consumer goods.
- The fifth wave, which will likely cover the period from 1995 to 2020, is driven by the innovations involved in numerous IT applications.

Figure 2.4: Five Technological Revolutions in 240 Years

A great more detail about these five technological revolutions is provided by Carlota Perez in her book *Technological Revolutions and Financial Capital.*[16] Her work is strongly influenced by the great economist Joseph Schumpeter,[17] who was well known for his theory about Creative Destruction (the fact that the old ways of doing things are endogenously destroyed and replaced by new ways). Perez even adds a sixth revolution: the approaching revolution that will be brought about by bio- and nanotechnology.[18]

Technology Changes Ways of Collaborating

A technological innovation requires time in order to become commonplace in a society. In the beginning, only a limited group of people will use a given technology. Only time will tell whether this technology will or will not be

16 Carlota Perez, *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages*, Edward Elgar Pub, 2003.

17 http://en.wikipedia.org/wiki/Joseph_Schumpeter.

18 Source: http://www.slideshare.net/connectedurbandev/2-zz-carlota-perez-cud-lect-defdef.

embraced by everyone. That is why all technologies have their own adoption curves.

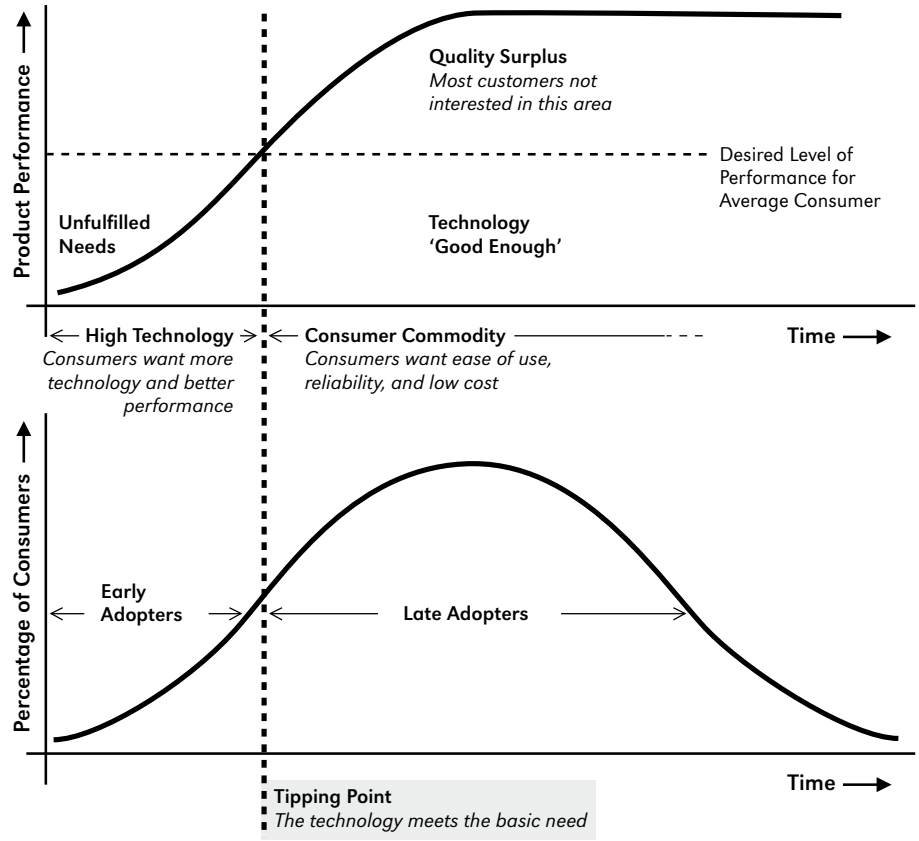


Figure 2.5: Adoption of Technology by Consumers[19]

When a technology catches on, there is a chance that it will transform an entire society. But a technology only has such an impact once every fifty to sixty years. On these rare occasions, it is not only society that is impacted, but the manner in which people are accustomed to working together is also radically transformed.

In "Why the Demise of Civilization May Be Inevitable",[20] Deborah Mackenzie gives some thought to the ways in which society is changed by technology.

19 Source: P. Bosker and M. Boreel, *Van Horen zeggen naar Willen hebben*, VINT 2000.

20 Deborah Mackenzie, "Why the Demise of Civilisation May Be Inevitable," *New Scientist*, April 2, 2008.

Figure 2.6 displays a number of diagrams representing the ways in which collaborations evolve.

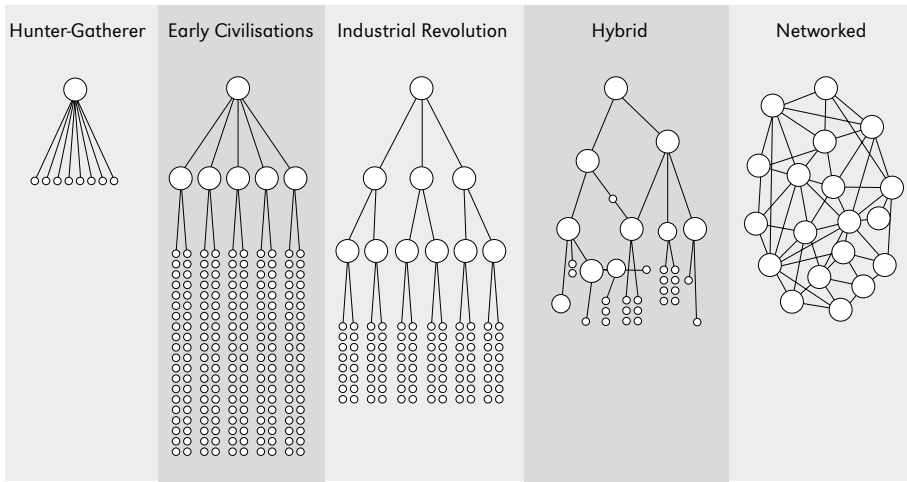


Figure 2.6: The Changing Shape of Society

Figure 2.6 makes it clear that two types of collaboration are dominant. The traditional hierarchical forms, such as those that came into vogue with the industrial revolution, and the network form which is now coming into use as a consequence of the emergence of the World Wide Web. In terms of time, we are currently in a transition phase in which companies are mostly adopting hybrid forms.

To understand the manner in which collaboration has evolved over time and the ways in which collaboration is now being re-examined, the following sections will reconsider two important economists who were responsible for the development of the very first corporate structures and the modes of collective work adopted within the walls of these organizations.

The Invisible Hand of Adam Smith

Traces of an evolutionary theory based on natural selection can already be found in early works on the economy. The magnum opus of economist Adam Smith (1723–1790) entitled *An Inquiry into the Nature and Causes of the Wealth of Nations* uses something akin to natural selection to explain the workings of the free market. This book was first published in 1776, just after the start of the industrial revolution.

In the view of Adam Smith, the interests of the individual do not come before the interests of the collective. To his mind, collaboration occurs automatically. One person works as a farmer, the other as a baker. Together, they help each other earn their livelihood. Working together comes naturally. It manifests the effects of the "invisible hand."

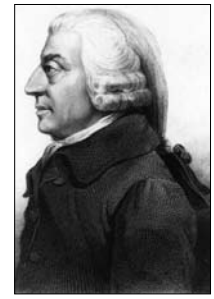


Figure 2.7: Adam Smith

Taylorism

Frederic Winslow Taylor (1856–1915) was the first person who emphatically departed from this manner of collaboration, which people had known for centuries. He let go of Adam Smith's invisible hand and took up the part of the rigidly organized system in which employees were given little latitude.

Money Makes the World Go Around[21]

Taylor was born in 1856 in Germantown, a part of Philadelphia, Pennsylvania. He grew up in an affluent family and was not surprised about the fact that there were different classes of people in the world. When he reached the age of twelve, his father took the entire family to Europe for a trip lasting three years. Such a European tour was not unusual for wealthy people at the time.

Figure 2.8: Frederic Winslow Taylor[22]

During this tour, Taylor learned for the first time about the ways in which money can be employed as a means to influence another person's behavior. In crossing the high mountains of the Alps, the family was stranded in the village of Finsterminz.[23] The local bridge had been largely swept away, preventing access to the pass. Over time, the local population had made a few half-hearted attempts to reach the pass, none of which went very far. The family would have been unable to complete its crossing of the Alps, except that failure was not a part of the vocabulary of Frederic's father. Pulling out his wallet, he was able to motivate the residents of the village so that the entire family and their baggage was on the other side of the pass the next day.

21 Line from the song "Money, Money" in the musical *Cabaret*.

22 Source: http://en.wikipedia.org/wiki/Image:Frederick_Winslow_Taylor.jpg.

23 Source: http://www.pillowrock.com/ronnie/fwtaylor.htm.

I have you for your strength and mechanical ability, and we have other men paid for thinking.

In 1911, Taylor published his revolutionary ideas about management. In his book *The Principles of Scientific Management*, he explains how business processes must be managed in a scientific manner in order to promote standardization and efficiency. His theories presented companies with the means of skewing the balance of power in their favor. The manner in which consumers and "producers" had been accustomed to dealing, and working, with each other was consequently brought into question.

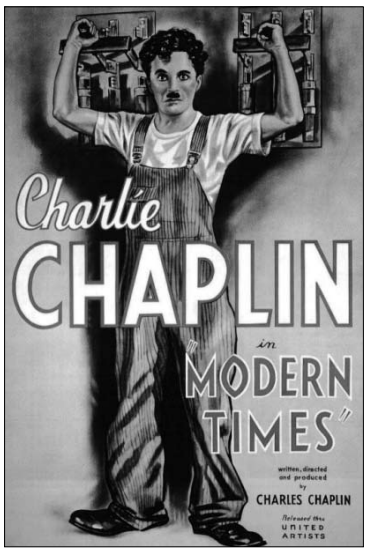


Figure 2.9: Modern Times[24]

The Film Modern Times

Although Taylor's original objectives where quite idealistic, a great deal of opposition was mounted against his theories. Putting them into practice required a far-reaching division of labor with little concern for people's social needs. The result was increasing self-alienation (the top layers of Maslow's pyramid no longer being attainable) and alienation from the end product.

One of the best known critical views of such relentless industrialization is undoubtedly the black and white movie *Modern Times* by Charlie Chaplin. In this movie, Chaplin plays his trademark character the little tramp, who this time is an assembly-line worker being subjected to the torments of the modern machine. It is interesting to note that the idea for this movie was taken from a journalist who told Chaplin about the depressed assembly line workers in a factory in Detroit.

Industrial Revolution

The industrial revolution caused the balance (the market equilibrium) in the demand and supply model to shift in favor of producers. The use of machinery enabled organizations to grow in size and scale, allowing them to serve more customers simultaneously. The process caused employees to lose touch with their end customers. Since they were cut off from direct feedback, they

24 Source: http://en.wikipedia.org/wiki/File:Moderntimes.jpg.

had to rely on others who were closer to customers to coordinate the effectiveness of their efforts and to indicate how they might better satisfy customer wants.

The previous intimate collaboration between producer and consumer began to fracture and eventually fell apart. Producers no longer had their ears attuned to their customers but took control themselves. From then on, producers of goods and services assumed that they best knew what consumers wanted.

Deploying the resources of various mass media (newspapers, radio and television), they imposed their will on consumers and were able to manipulate them into making purchases. After all, producers felt that they knew best. They very well knew (or so they thought) what consumers wanted and how these wants were to be satisfied.

Efficiency

With the growing size of organizations and resultant division into departments and duties, employees became increasingly further removed from the ultimate end product. The entire business process was directed at the most efficient realization of this good or service. As a result, employees had to specialize in order to take responsibility for just one small task. Employees were seemingly turned into nothing more than cogs in a machine, small replaceable parts to be thrown on the scrap heap when expended.

Everything and everyone was placed in service of the end product, while any interests of the individual were subsequently disregarded. This change on the work floor reduced the feeling of responsibility that workers had felt for the quality of the end product. They also became increasingly alienated from co-workers and even from their own sense of self. The overview of the entire business process was more difficult to maintain, making it no longer possible to intervene when calamities occurred. Likely Jacques Ellul, the above-mentioned French sociologist of technology, had this in mind when he coined the term "*soulless efficiency*."

The inescapable conclusion is that the effort to realize the advantages of scale and efficiency caused workers to lose contact with customers. To put it simply, there was no longer any time for collaboration between producer and

consumer. The essential input enabling the craftsmen of former times to be (largely) self-directing was missing, and the corresponding expansion of the management class therefore became inevitable.

2.5 Conclusion

Throughout history, we encounter various forms of collaboration both inside and outside organizations. Technological innovations often underlie the transition from one form to another, these revolutions disrupting the balance between old and new, between technology and the community.

Thanks to the World Wide Web, we have again entered a transitional phase. More and more companies are abandoning centralized, hierarchical organizational forms and are switching to a model that uses decentralized network structures even extending beyond company walls. Another catalyst for this change is the fact that, in contrast with previous transformations, diverse fields of knowledge are now undergoing a process of convergence. For the first time in human history, everyone has nearly unimpeded access to all information. The resulting impact of the internet on society is therefore larger than anything previously experienced and consequently distinguishes the present from all previous phases (*i.e.* technological revolutions).

The following chapter will further explore the effects that the new technology is having on society, companies and humanity in general. A distinctive feature is that all parties are virtually unable to hide anything anymore – NO MORE SECRETS! We are entering an age in which transparency, openness and cross-boundary collaboration will be crucial for the continued existence of companies.

Case: REAAL Verzekeringen Turns to Collaboration as It Contends with Seismic Changes in Its Business

Wholesale Evolution of Channels Pushes Company to Work Differently

After nearly 120 years in business, REAAL Verzekeringen, the €4 billion-a-year insurance arm of Dutch financial services group SNS REAAL, has seen a profound shift in the way insurance is delivered. The traditional approach of relying on brokers as the main distribution channel is giving way more and more to web-based self-service, sales through larger partners who offer complementary services, and growing opportunities as a value added service sold by SNS REAAL's banking unit.

The face-to-face relationship between brokers and consumers is being replaced by electronic channels, and that means the services that are so crucial to an insurance company – such as providing quotes and processing claims – are increasingly reliant on technology for their delivery. Because REAAL acquires Insurance companies to spur growth, it also needs to speed up the process of integrating acquired companies into its infrastructure. That means the technology has to enable the collaborative processes that support such key business activities. Throw in the fact that growing numbers of employees are working from home, and all these processes have to be extended to support coordination among multiple locations.

This fundamental transition has highlighted the need for REAAL Verzekeringen to look for new, more efficient ways to get things done. Specifically, it is injecting collaborative technologies into its business processes. The company needs its employees to be able to more effectively brainstorm new products, coordinate cross-selling efforts and process claims, so the company is supporting its employees in these efforts by making it easy for them to share information and knowledge across organizational and geographic boundaries. It also wants to provide an external collaborative environment where it can work with partners to efficiently pair products and services.

Enabling a "New Way to Work"

To accomplish this, REAAL has initiated a broad initiative to achieve the "New Way to Work." In this initiative, there are many projects that will change and improve the way REAAL works. It will change the way in which people work together, and how the company will innovate. The program addresses anything from the physical environment (buildings, physical workspace, *etc*.) to the social and HR aspects.

A relatively small but important part of this broad initiative addresses the technology used to collaborate. For this part, REAAL turned to Microsoft technologies (SharePoint/ Office Communications Server). It embarked on this three-year effort to establish a

collaboration infrastructure six months ago, when it made an early incarnation of its SharePoint environment available to a strategic project group of 250 employees.
The company has 10-15 people working on a daily basis, in conjunction with consultants and experts from Microsoft, to flesh out the design of an environment that will support all of SNS REAAL's 7,000 employees. Plans call for the first full implementations to start rolling out in the first half of 2009 with pilots centered on departmental groups of 80-100 people. Barring unforeseen problems, REAAL intends to proceed with a larger-scale rollout later in 2009 and into 2010–2011.

Potential Internal and External Benefits Becoming Apparent

Early indications of the impact of this technology haven't done anything to slow the effort, says Kees Tuijnman, enterprise architect at REAAL. One of the benefits Tuijnman sees is that the technology is already enabling improvements in the information flows. The resulting benefits have fueled optimism for what the results of the overall program will do for the company.
The IT department, which was an early adopter of some of the elements of this "New Way of Work," was also among the first to see what can change. For instance, IT relies upon a structure in which employees with similar skill sets – such as software development or design – are grouped together. That makes it difficult to transfer those skills between groups. The new technology and new focus on collaboration helps IT to work in virtual teams in which the various skills are clustered together, making IT projects a more collaborative pursuit.
As the program is introduced throughout the company, the effects are expected to become visible, including cost reduction, productivity improvements, more effective talent acquisition, more efficient knowledge sharing, and a boost in employee satisfaction. The company is not only looking to improve the internal workings of the organization but is also extending their vision to external collaborators. "We have a number of large distribution partners with whom we connect selling processes and work on innovation," says Tuijnman. "We want a better exchange of ideas, and a way to implement those ideas into new products."

3 The New Nature of the Firm

3.1 Introduction

In the previous chapter, the ambiguous role of technology was discussed in light of several converging trends. We saw that these trends spell great changes that only happen every fifty or sixty years. In this chapter, we will bring the discussion closer to the organization and explore what competition and collaboration look like, and how they could change. We will see how collaboration might in some cases even take the place of competition, changing the essentials of survival and competition forever.

Life is one long struggle, wherever you look. Elements of competition are to be found everywhere. The survival drive is not only deeply rooted in the animal kingdom around us but it also permeates our own society. Of course, it is most evident in the area of sport, but we also find it in politics, religion, education, the business community and language (good-better-best). And even in art! Why is one painter a great master and another one not?

In this environment there is always the urge to score or to exhibit that you are better than others, often at the cost of others. There are good reasons behind the impulse to kill or be killed! One of the first persons to study this phenomenon in detail was the biologist and naturalist Charles Darwin (1809–1882).

The Voyage of Discovery on Board HMS Beagle

Charles Robert Darwin first became interested in science during his medical studies in the Scottish city of Edinburgh, which he discontinued after two years. His father then sent him to Cambridge to pursue religious studies. While in Edinburgh Darwin had developed an interest in animal life. One of his great passions was to collect and categorize all types of beetles. At Cambridge, he was given the chance to pursue his passion by taking courses in botany and geology, in addition to studying theology.

At the end of 1831, Charles Darwin obtained a position as a naturalist on the British naval ship HMS Beagle. His task would be conducting geological research on South-American coastal regions. After convincing his father about this unique opportunity, he was given permission to interrupt his study, enabling him to depart on the Beagle from Plymouth harbor on December 27, 1831.

The boat was commanded by Captain Robert Fitzroy (1805–1865), who had been given the task of surveying the southern point of South America in more detail. The commission was expected to take two years. However, the trip lasted longer than expected. The voyage included visits to New Zealand, Australia and South Africa, in addition to South America. The ship didn't return to England until 1836, five years after its departure.

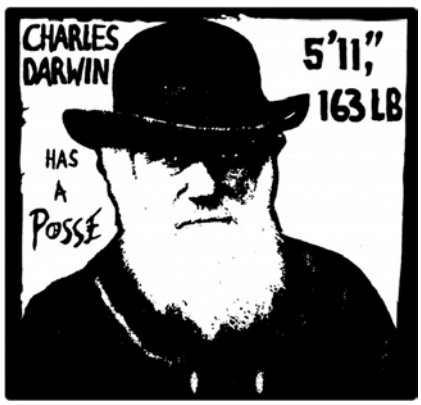


Figure 3.1: Charles Darwin[1]

When he departed, Charles Darwin was only 22 years old. No one could have suspected what an enormous impact he would have on the history of humanity. It was on board the Beagle that Darwin was inspired to formulate his theory of how evolution works via natural selection, which is still considered one of the most important scientific works ever written.

How a Finch Explains Human Evolution

The Galapagos Islands, an archipelago off the west coast of South America, played a crucial role in the creation of Darwin's theory. To Darwin's surprise, different species of finches were living on the various islands. How was it possible that such great diversity could have arisen among these finches when the islands lay so close together?

Since it could be assumed that the birds flew from island to island in their search for food, distinctions among the birds should not occur. Yet, observa-

1 Source: http://flickr.com/photos/cpurrin1/sets/72157594332798029/.

tion proved otherwise. The birds on each individual island had distinctive beaks. Darwin's research demonstrated that the different food consumed by the birds on each island was responsible for the different beak forms.

A Finch Eats What Its Beak Can Fetch

Each different type of beak had developed into a unique instrument designed to consume the available food in the easiest manner. One finch had a sharp, pointed beak in order to pick seeds out of pinecones; another had a short beak to facilitate the plucking of insects from branches. The finches had adapted to the conditions in which they were living. Over time, they had evolved.

The Origin of Species

Three years after the Beagle's return, the first edition of Charles Darwin's *On the Origin of Species by Means of Natural Selection* appeared bearing the subtitle *or the Preservation of Favoured Races in the Struggle for Life*.[2] Darwin first committed his theory of evolution to paper in this book. He explains how natural selection is responsible for the fact that life on earth is divided into various species. In the struggle for survival, the individuals best adapted to conditions around them will survive and reproduce.

The publication of this book exposed Darwin to attacks from all angles. In particular, the Catholic Church took steady aim at his ideas, regarding his book as a specific challenge to the existence of God. After all, Darwin was arguing that humans were not the offspring of Adam and Eve but the descendants of apes. Only after his death in 1882 was the value of his views permanently recognized. His fellow scientists made sure that Darwin received a state funeral in Westminster Abbey. Eight years after his demise, the Royal Society of London even established the prize for scientific work that bears his name (Darwin Medal) and is still being awarded annually. (Incidentally, another award that bears his name, the Darwin Awards,[3] are much more frivolous and are posthumously "awarded" to people who died doing stupid things, thereby proving themselves "unfit for reproduction" and removing their genes from the gene pool at the same time.)

2 Beginning with this sixth reprinting, the book's title was shortened to simply *The Origin of Species*.

3 http://www.darwinawards.com/.

Darwin's theory of evolution has radically transformed our worldview, portraying a world with which not everyone could identify. Captain Robert Fitzroy was literally ruined by Darwin's ideas, which contradicted his strong religious devotion. The idea that he had played an important role in Darwin's life and, accordingly, in the development of his theory of evolution drove him mad, and ultimately to suicide.

The Right of Might

Darwin's book popularized the notion of "survival of the fittest."[4] In fact, the term was originally coined by the economist Herbert Spencer. In his 1851 book *Social Statics*, Spencer states that, as long as the government does not intervene, the best qualified (read: richest) people will ultimately survive, and a super civilization will be created from which the weaker groups have been eliminated.

Darwin adopted this economic "survival of the fittest" theory in explaining how natural selection functioned. He always meant that species adapt to (*i.e.* fit better with) conditions in order to survive. If they are unable to adapt, then they simply become extinct.

> *It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change.*

However, the notion "survival of the fittest" took on its own life after publication of his book. Increasingly often, the emphasis was placed on the fact that survival was only a question of winning a struggle between one individual and another. Might is right, so to speak. Darwin did not, however, have this meaning in mind. In fact, his work demonstrates that evolution does not only operate through survival by fighting, but (and perhaps predominantly) by mutual collaboration among various species.

> *In the long history of humankind (and animal kind, too) those who learned to* ***collaborate*** *and improvise most effectively have prevailed.*

4 Source: http://nl.wikipedia.org/wiki/Survival_of_the_fittest.

Not Fighting but Collaborating

The biologist Lynn Margulis also disputes the notion that a given species can only evolve at the cost of others. Evolution does not just involve competition; it also involves collaboration, interaction and interdependence of organisms. She reflected on forms of collaboration in nature as long ago as 1966, discussing them in her paper, "The Origin of Mitosing Eukaryotic Cells." In it, she demonstrates, among other things, how cells can be created from the symbiosis of various species of bacteria. Since then other theories have emerged as to how multicellular organisms started as complex collaboration between single-celled organisms.[5]

Lynn Margulis subsequently married the world-renowned astronomer Carl Sagan. From this marriage she gave birth to two sons, one of them being the science-fiction author Dorion Sagan. The two of them co-published her 2001 book *Marvellous Microbes*, a work in which she refocuses on the fact that evolution is not driven by competition but by cooperation:

> *Life did not take over the globe by combat, but by networking.*

On Bullthorn Acacias

Living networks not only occur at the cellular level but also at higher levels of complexity among various species. A good example is the story of the bullthorn acacia (*Acacia cornigera*), a plant that grows in the tropical rainforests of South America. The species is named for the large hollow thorns on its branches, but is best known for the symbiotic relationship that it shares with creatures in its proximate environment. In particular, the hollow thorns provide ideal shelter for a species of ant (*Pseudomyrmex ferruginea*), and the material that the plant discharges is an excellent food source for these ants.

In exchange for this food, the ants protect their host against attacks from outside. As soon as other animals attempt to feast on this plant, the ants alert each other by dispersing a pheromone and join in the struggle against the outsider *en masse*. Possessing a long and hard tongue, the insects are even able to frighten off larger animals by giving them venomous bites.

5 http://scienceblogs.com/pharyngula/2008/03/the_choanoflagellate_genome_an.php.

Fittest Through Collaboration

There is a lot of collaboration in nature, and in some instances species that collaborate with (sometimes unlikely) partners stand a better chance of survival. Ants and the bullthorn tree have created an intricate interdependency for the benefit of both. Fierce lions hunt together with other lions. They are partnering to catch bigger game than they ever could alone, but in return they will have to share the prey and obey group etiquette. Zebra like to flock together with giraffes to make use of the giraffes' long necks: if the giraffes run, so will the zebra. They have outsourced the lookout function, so to speak (for free, even).

Whatever the nature of collaboration or cooperation between one or multiple species, there is always a benefit to the survival or reproduction of at least one of the species. Species that collaborate do so to survive a harsh world; or they collaborate to compete for scarce resources. Whenever the environmental pressures are high, when there is great scarcity or a lot of competition, collaboration is a winning approach in the game of life. It all comes together in the term *ecosystems*, where togetherness and interrelatedness are much more important than the element of competition. Could this also be true for the market as an ecosystem of companies, consumers and suppliers?

3.2 A Society of Conversations

The previous chapter suggests that the industrial revolution put an end to the ways that humans had been working together for centuries. The vitality was taken out of work. The individual became only a small cog in the machinery of the assembly line. Everyone had a job to do without having to think too much about their surroundings.

With the introduction of the internet, this type of thinking has slowly begun to change. Thanks to this new technology, people (or consumers) have obtained a platform by means of which they can compel companies to take their wishes into account. Companies must collaborate with consumers if they want to continue in business at all.

In April 1999, four internet pioneers (Rick Levine, Christopher Locke, Doc Searls and David Weinberger) foresaw this turn of events. They formulated their vision into a manifesto containing 95 avant garde propositions in which

they predicted how the business world would be irreversibly transformed in the near future. The manifesto was published on a website named for the manifesto: http://www.cluetrain.com. A transcript was quickly published as a book in 2000 under the title *The Cluetrain Manifesto: The End of Business as Usual*.

A Self-Evident Truth

The very first statement reads, "Markets are conversations." This truism should almost go without saying. After all, everyone has long known that discussion and dialogue underlie all markets. Still, they often forget about this basic fact over the course of time. When we look back on the last century, we immediately see that the twentieth century was dominated by only a handful of men, companies and countries. These were the elite, so to speak. This elite was responsible for transforming markets into mere monologues. They determined the message that people were allowed to hear, acting like a corporate dictatorship.

At the dawn of the twenty-first century, the above-mentioned manifesto made it apparent that a fundamental leap forward was about to occur. The book was the first to proclaim the enormous potential of the World Wide Web. A new world was dawning. And this world would no longer allow itself to be dominated by a small group of people using outdated techniques and strategies. This new world demands a new approach, a new form of management, a new way of doing business, a new manner of collaborating.

Markets Are Conversations

Markets have always been conversations. They are places where demand and supply come together in order to determine the prices of goods or services. In an ideal market, producers and consumers have equal power to affect the interplay of supply and demand. In an ideal market, producers and consumers collaborate. That is the utopian ideal, which is not always what happens in practice.

Traditionally, the interaction of supply and demand is the cornerstone of the value-creation process. In the pre-industrial age, this process of value determination functioned well because producers and consumers had access to

the same information. To put it more strongly, because they mostly lived in small communities (villages), producers and consumers could meet every day for discussion and negotiation. Consumers were able to provide direct and immediate commentary, and the producer could take immediate action. Producers and consumers had an especially intimate relationship, which ultimately meant that they worked together to determine the value of a good or service. A simple handshake was then sufficient to indicate that both parties were satisfied.

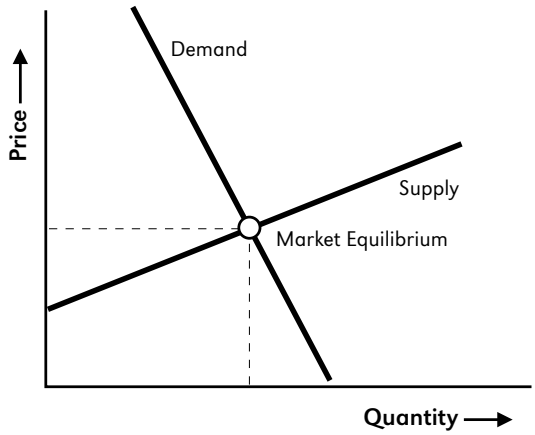


Figure 3.2: Market Equilibrium

Naked Conversations

> *Consumers are in the midst of a conversation that isn't ours. The race is on to grow ears to learn what they are saying.*
>
> – John Hayes, CMO, American Express

With the dawning of the information age, a transition is underway. Information technology gives consumers their voices back. Using all types of communication (blogs, microblogs, forums, wikis, social networks, chatting, *etc.*), they are again able to express their (dis)satisfaction.

In his book *Naked Conversations*, Robert Scoble shows how businesses are being dragged into these conversations, almost against their will.[6] After all,

6 Robert Scoble and Shel Israel, *Naked Conversations: How Blogs are Changing the Way Businesses Talk with Customers*.

companies cannot afford to ignore a discussion when it involves their brand(s). Before they know it, the viral effect of the web can create an enormous thunder of negative voices against which the company's soothing words go unheard.

Robert Scoble focuses his book specifically on the impact of weblogs on organizations. The internet will not stand still and is, in fact, gaining momentum. With the boost of "Web 2.0" technologies a tremendous array of new communication and collaboration options became available for companies, all becoming part of one continuous conversation online. Figure 3.3 of the Conversation Prism, by Brian Solis and Jesse Thomas, shows what the current landscape of communication channels looks like.[7] (For a full-size version of the diagram, refer to Figure 5.5.)

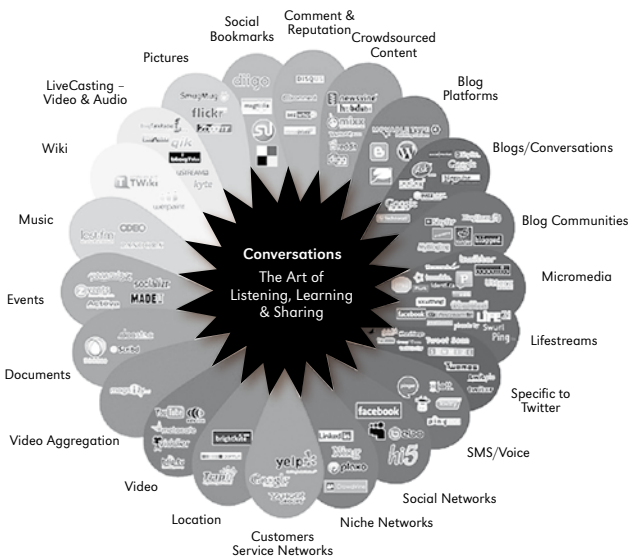


Figure 3.3: The Conversation Prism

It is striking that conversations are now discernibly shifting toward the *lifestreaming* phenomenon.[8] More and more users are employing communication tools to share ("stream") their lives with family, friends and acquaintances. This burgeoning popularity further increases the complexity facing companies that are trying to participate in these discussions. How can cor-

7 http://www.briansolis.com/2008/08/introducing-conversation-prism.html.

8 Jaap Bloem, Menno van Doorn and Sander Duivestein, *Me the Media: Past, Present and Future of the Third Media Revolution.*

porations keep up with this type of fast talk? How can organizations make the transition from "the mechanical age of speed to the digital age of real time"?[9]

Companies are now being forced to play with all their cards on the table. *Transparency* and *truthiness*[10] have become the key terms for companies making contact with their customers. No more secrets! Early warning about the places where web discussions concerning a company's brand are occurring is now essential. Such advanced detection enables companies to participate in this discussion right from the start. The discussions then make their way inside company walls, and collaborations are struck with outsiders, especially those who are most critical of the company. We are moving from a conversation economy into a conversation society.

Nicholas Carr comments on these "naked conversations" in his book *The Big Switch*.[11] He notes that, "By shifting power from institutions to individuals, information processing machines can dilute and disturb control as well as reinforce it." It is therefore very possible that when companies get involved in the new "social" game, they do so in order to recover power once again. Perhaps this even occurs surreptitiously, without consumers catching on.

From Speed to Real Time

We might already be beyond the age of speed, by moving into the age of real-time.

– Ivan Illich (1996)

The fact that the relationships between consumers and companies are fundamentally changing as a result of information technology means that companies have to approach their business processes differently. The struggle for efficiency is no longer as important, while real time is playing an ever-larger role. Organizations must change from unwieldy, rigid, bureaucratic monsters into flexible and adaptive organisms.

Change is the process by which the future invades our lives.

– Alvin Toffler

9 Partial quote by Teemu Arina.

10 http://en.wikipedia.org/wiki/Truthiness.

11 Nicholas Carr, *The Big Switch: Rewiring the World, From Edison to Google*, London: W.W. Norton & Company Ltd., 2008.

What distinguishes our age from all those that have preceded it is the exponentially increasing rate of change. Companies can no longer be complacent. They must respond directly to the changes in their environment. The resulting complexity means that no company can operate on its own any longer. It is impossible to take on this new world alone. The various members of the business community must learn to think differently; they must join hands and work together.

This collaboration can only succeed if each company makes the best possible effort. Every company needs to concentrate on its own qualities and skills – on its own core competencies. When each company is prepared to change its thinking, as described above, then the sum of the parts will exceed the whole.

> *In the mechanical age now receding, many actions could be taken without too much concern. Slow movement insured that the reactions were delayed for considerable periods of time. Today the action and the reaction occur almost at the same time [...]*
>
> *The restructuring of human work and association was shaped by the technique of fragmentation that is the essence of machine technology. The essence of automation technology is the opposite. It is integral and decentralist in depth, just as the machine was fragmentary, centralist, and superficial in its patterning of human relationships.*
>
> — Marshall McLuhan

3.3 Management 2.0

The Future of Management

The emergence of information technology means that companies no longer have to operate in a landscape of continuous change on their own. Collaborating with others makes it easier for them to respond to the continuous changes occurring in the world around them. This world no longer stands still for any length of time. A new market has been created which is open twenty-four hours a day and seven days a week. Company management must therefore adjust their strategies to suit this contemporary around-the-clock time.

In *The Future of Management*, Gary Hamel examines the ways in which managers function inside organizations.[12] He says the following on the subject:

> *Managers focus on the value chain, the flow of producs and services through the activities the company controls or influences. ... Managers should focus on the quality and the experience of co-creation, not just on the quality of the products and services of the company.*

Hamel also examines the ways in which management has been keeping pace with change in recent decades:

> *Compared to the the enormous changes in technology, lifestyle and geopolitics of the last fifty years, management seems to have developed at a snail's pace.*

New Age of Innovation

The most recent book by C.K. Prahalad and M.S. Krishnan, *The New Age of Innovation,* provides a detailed description of the reforms required of management. Prahalad formulates the new ways in which companies will have to operate in the near future as follows:

1. Value is based on unique, personalized experiences of consumers. Firms have to learn to focus on one consumer and her experience at a time, even if they serve 100 million consumers. *The focus is on the centrality of the individual (N=1)*.
2. No firm is big enough in scope and size to satisfy the experiences of one consumer at a time. All firms will access resources from a wide variety of other big and small firms – a global ecosystem. *The focus is on access to resources, not ownership of resources (R=G)*.

Customers are now demanding that goods or services they purchase should be customized to their needs. The individual has become the demanding key figure in the transaction. No single company can service every individual customer on its own. Collaborations must therefore be established around the world in order to satisfy this multitude of needs.

12 Gary Hamel and Bill Breen, *The Future of Management*, Harvard Business School Press, 2007.

The economy of the industrial revolution was characterized by shortages. Due to the "Long Tail,"[13] such scarcity no longer exists. Instead, there is abundance![14] The consequence for consumption is that the focus is no longer on possession but has increasingly shifted to experience;[15] the focus is on the perceptions and emotions that a product evokes. The modern smart phones are outstanding examples of this way of thinking. Ultimately, a product or service has to contribute to a definition of self-identity.

> *In the hypercapitalist economy – characterized by continuous innovation and dizzying speed of change – buying things in markets and owning property becomes an outdated idea, while "just in time" access to virtually every kind of service, through vast commercial networks operating in cyberspace, becomes the norm. We increasingly pay for the experience of using things – in the form of subscriptions, memberships and leases – rather than pay for the things themselves. The bottom line: we are spending more and owning less.*
>
> – Jeremy Rifkin[16]

Unbundling Value Chains

One of the immediate consequences of the new ways of thinking described above is the unbundling of value chains, a process that is now underway.

> *The bundling of the world's computers into a single network is ushering in what may be called the unbundled age.*
>
> – Daniel Akst

Phenomena such as *mashups* and the *cloud* are the very first signs of this change. As Michael Porter has taught us, the concept of the value chain must be given free reign. It is no longer sufficient to examine how an organization has structured its internal business processes. A much stronger focus must be placed on the collaborations among partners in the chain – not only locally, but certainly globally as well.

---

13 The Long Tail theory, introduced by Chris Anderson, describes how the internet creates a market for niche products, that start to compete with mainstream products. See http://en.wikipedia.org/wiki/The_Long_Tail.

14 "But we are shifting, too, from a culture of scarcity to one of abundance": see http://www.buzzmachine.com/2008/08/07/the-myth-of-the-creative-class.

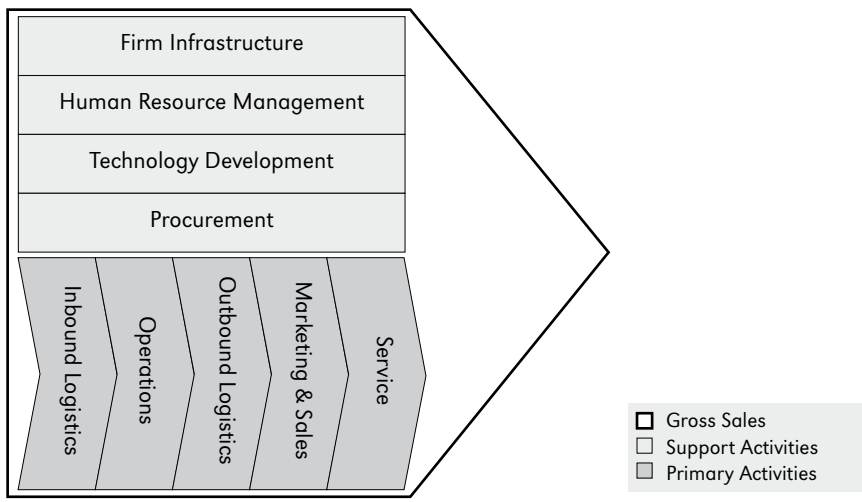
15 B. Joseph Pine and James H. Gilmore, *The Experience Economy*, Harvard Business School Press, 1999.

16 Jeremy Rifkin, *The Age of Access: The New Culture of Hypercapitalism, Where all of Life is a Paid-For Experience*, Tarcher, 2001.

The mutual needs of consumers must also be clearly examined. How can the consumer be best involved in the development process in order to customize the experience for this consumer? And how should a company deal with large user groups, with communities? How can companies work together with their customers? Crowdsourcing,[17] involving customers in the innovation process, is a tool used increasingly frequently by companies seeking to generate innovation.

Porter's Value Chains

Each company is a collection of activities developed to bring a product or service to market. Michael Porter identifies this series of activities as an organization's value chain. He first described this model in his 1985 book *Competitive Advantage*.[18]



Source: Porter, 1985

Figure 3.4: The Value Chain[19]

17 Jeff Howe, *Crowdsourcing: Why the Power of the Crowd is Driving the Future of Business*, Crown Business, 2008.

18 Michael Porter, *Competitive Advantage: Creating and Sustaining Superior Performance*, 1985.

19 Source: http://upload.wikimedia.org/wikipedia/commons/a/ac/Value_Chain.png.

Value is, in fact, the contribution that businesses make to customers and for which customers are then willing to pay. The aim is to create value for customers that is higher than what it costs to create. From this perspective, costs are not always as important in determining competitive position as value is.

Technology has made possible the fragmentation of the value chain.

– Suzanne Berger, Professor at MIT

Value Chain 2.0

In an article entitled "Value Chain," Xavier L. Comtesse and Jeffrey Huang clearly update Porter's value chain to make it more applicable to the present.[20] These chains unquestionably now involve consumers along with the other companies implicated in a given company's business processes. The production of a good or service is to be seen as a collective initiative bent on the creation of a unique value (= experience) for a unique consumer.

The fact that the creation of value is an activity not just reserved for companies but entangled in the interplay between producer and consumer means that Porter's original notion of the value chain is no longer sufficient. This collaboration with consumers, identified by Comtesse and Huang as the Value Chain 2.0, is illustrated in Figure 3.5.

An extra dimension has been added to each manner of value creation within an organization. These additions reflect the consumer's involvement in the business process. As a result, collaboration with end users and other companies is a requirement for continued survival in the new age.

20 X.L. Comtesse and J. Huang, "Value Chain 2.0," http://www.lunchoverip.com/valuechain20/valuechain20.pdf.

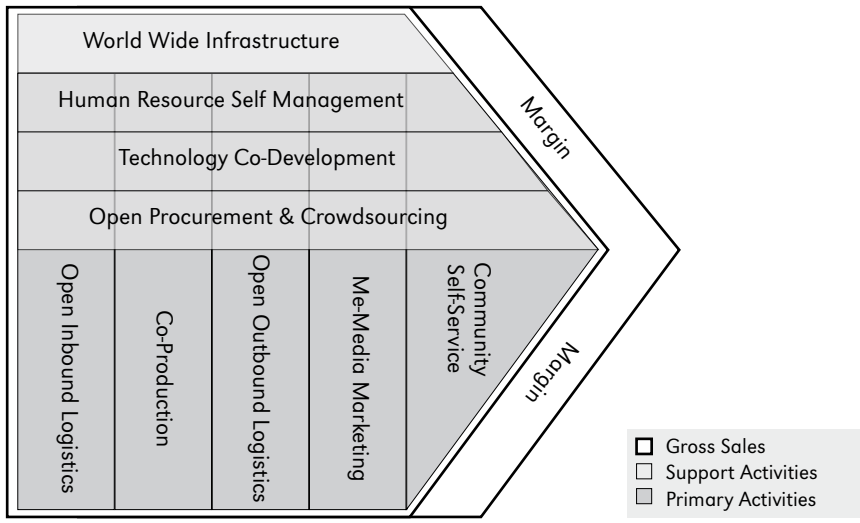


Figure 3.5: The Value Chain 2.0

The System is the Product

On June 17, 2006, Adam Richardson expressed his frustrations concerning the new Motorola cell phone on his weblog.[21] In his blog posting, he uttered his new mantra "The System is the Product." "For a product to feel harmonious with the user, the system that surrounds it must be harmonious. No product is outside of a system, though not all products are systems."

Likely, it is the iPod and its associated system (iTunes) that is among the first examples of his philosophy. Apple introduced its newest product on October 23, 2001. With this mp3 player, Apple promised consumers complete and continuous access to their music collection: "All your music, always with you." The success behind this mp3 player was not due to the device but to the underlying software. Specifically, the iTunes program makes it possible for the bulk of functionality to be left off the iPod and run on the PC.

The launching of iTunes Music Software was tantamount to a fully fleshed-out implementation of Richardson's mantra. It enabled consumers to stream

21 http://richardsona.squarespace.com/main/2006/6/15/motorola-q-snatching-defeat-from-the-jaws-of-victory2.html.

all types of media (video as well as audio) to their iPods. The iPod became, as it were, the interface for the entire underlying system. It provided an entirely different manner of enhancing and personalizing the consumer's experience.

This type of thinking is now being applied more frequently. All kinds of social web applications are currently being offered through APIs, allowing users to outfit their products with their own chosen content. Consider, for example, Microsoft Virtual Earth or Google Maps in which various types of extra information can be added, augmenting the program with almost any new type of visual data.

Mashup and the Cloud

The Gartner Hype Cycle in Figure 3.6 shows the various elements of cloud and Web 2.0 in their different stages of adoption, including the term Web 2.0 itself. The complete Web 2.0 movement has caused all kinds of new social applications to spring to life. Wikipedia, Flickr, Blogger, Digg, YouTube and Facebook are probably the most important examples of this phenomenon. They all rely on the consumer's input and therefore offer a full range of APIs in order to provide the greatest possible means of incorporating the needs of their end users.

To help web consumers negotiate this jungle of social networks, large companies are offering platforms in order to make it easier to create mashups: link networks and programs together. Examples of such online infrastructure are Amazon Web Service, Yahoo! Pipes, Microsoft Popfly and Microsoft Live Mesh, Google App Engine and the IBM Cloud.

Companies are also using these platforms. They are placing increasingly more of their core business in the cloud and linking to the core activities of other companies. In this way, completely new business processes have been created (along with corresponding new forms of collaboration), outside the walls of any one company.

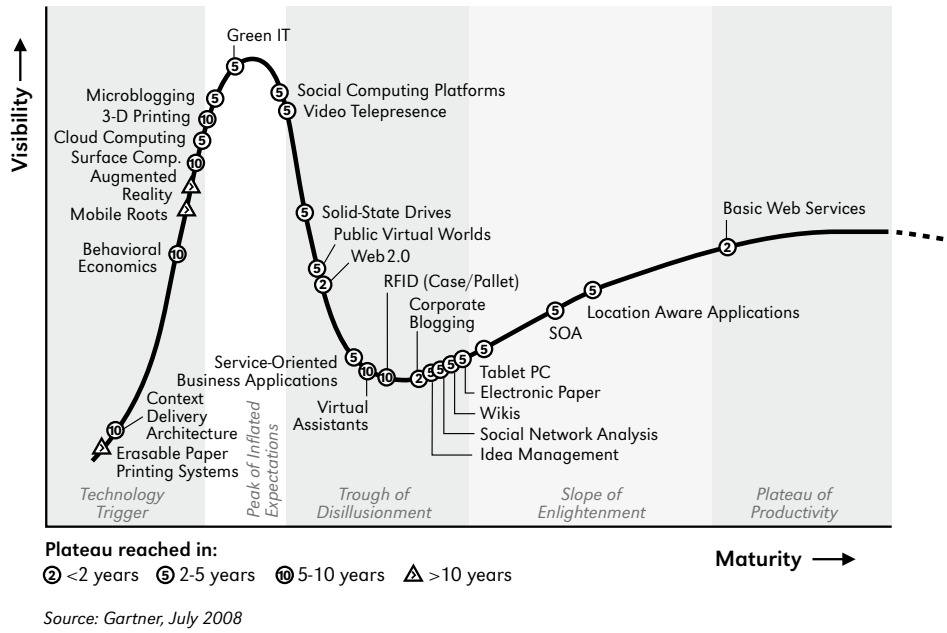


Figure 3.6: Hype Cycle for Emerging Technologies[22]

3.4 Conclusion

The world is verging on a fundamental transformation the likes of which we have never seen. The ways in which companies are accustomed to doing business will change for good. How can this be possible? Companies have stood alone on the bridge of commercial enterprise for decades. They have laid the course along which the consumer economy has had to sail. They have dictated the products that consumers would like to possess. They have greatly benefited from the absolute power that is now crumbling away at a furious rate.

The emergence of new technologies has undermined this corporate regime by completely altering the product paradigm. Technology has made globalization possible. No longer is there any distinction between here and there. Neither is there any distinction between sooner and later; transactions are now occurring in real time. The technology has also come into the hands of consumers, enabling them to have immediate input into the production proc-

22 Source: http://www.gartner.com/DisplayDocument?doc_cd=159496&ref=g_homelink.

ess. Using the technology to assert a newly acquired advantage, consumers can make their own wishes known and demand customized products or experiences from companies. Companies must provide specific concrete responses to the unique needs of each individual consumer. But how can companies achieve this?

No single company is capable of satisfying these unique needs all by itself. Any company must therefore collaborate and enter into dialogues with other companies and with its consumers as well. This will have a great effect on the position of the company in the market, and will also have effects inside organizations. And not least, it will have an effect on the role of the IT department within the organization. In the next chapters we will go into these topics and we will also talk about the workings of collaboration and its tools.

Case: Holland Casino Turns to Combination of Collaboration and Organizational Change as Strategy for the Future

Technology with Insufficient Functionality Was Hampering Recruitment, Fueling Travel Costs

It wouldn't be a stretch to say that Holland Casino has been an ideal candidate to benefit from collaboration technologies. Since its founding in 1975, the government-owned company had grown into a €750 million-a-year network of 14 casinos serving gaming and entertainment devotees throughout the Netherlands. That footprint, and possible expansion, left the company little choice but to acknowledge in 2007 that new technologies needed to be introduced.

For instance, on the recruitment front, the lack of real-time collaboration tools, such as instant messaging, video conferencing and mobile document sharing, is now and certainly in the near future is going to be a handicap in Holland Casino's efforts to hire promising young talent. They prefer to work where cutting-edge technologies are at their fingertips. "Young people coming in are very well aware of all the new technologies," says Ruud de Haas, director of information and communication technology. "They use them at home, and they want to use them at work as well."

Among current employees, the lack of access to those same tools meant that efforts to coordinate on projects or simply to communicate with each other were relegated to email, sending around documents and phone calls. These are seen as increasingly inefficient tools for evolving real-time business environments. Moreover, the company's network of casinos had employees driving from one property to the next when working closely with co-workers in multiple locations, whereas a web-based collaboration platform would render many such trips unnecessary.

Big Bet on Collaboration Tied to Organizational, Network Efforts

While Holland Casino was trying to address its collaboration deficit, it was also beginning to restructure around a new organizational model that reflected the changing business. The company's management agreed that implementing a platform for collaboration would help that new model succeed. It proceeded to deploy Microsoft's SharePoint 2007 online collaboration software, as well as its video conferencing technology, in conjunction with a rollout of Office 2007. In the fall of 2008, it launched a proof-of-concept rollout of SharePoint, which was to run for three months to a cross-section of employees.

At this time, the company's advisory board planned to assess its impact based on user experience reports, business process results, and whatever necessary organizational changes become apparent. Full rollout of SharePoint to the company's 2,000 information workers (the company employs around 4,700 people in all) is

expected to occur during 2010. The effort, dubbed "InfraNext," will combine the wider SharePoint and Microsoft Office rollout with the establishment of a unified communications platform for ensuring that employees are able to keep in the loop at all times. About a dozen IT staffers will be working on the project, with help from Microsoft. Workspace management consultancy Getronics NV already prepared the foundations for this project.

Despite the substantial resources behind it, de Haas sees the success of the collaboration effort as being tied to the fate of the company's network capabilities, for which an upgrade strategy was being laid out. The strategy was approved by the board to ensure the level of performance needed to support dynamic, real-time applications. The success also depends on the cultural change needed to really use collaboration tools, according to de Haas.

New Strategy Brings High Hopes – and Cultural Change

The kind of widespread change brought about by an effort like InfraNext isn't easy to institute. In a company where face-to-face meetings in specific locations have been the cultural norm, moving to a technology-enabled collaboration strategy is a delicate operation. Even exhaustive training of employees on using the new technology won't ensure the success of Holland Casino's evolving strategy. That's why de Haas believes the success of the parallel organizational change effort is so important. "This can't be a technology issue," he says. "It has to come from the top, not from IT."

Assuming it all comes together as planned, de Haas has high hopes for what the changes will bring in terms of business value. He expects substantial project management efficiency gains as the automated workflows inherent in SharePoint workspaces move Holland Casino's projects along more quickly than ever before. SharePoint's messaging and document sharing capabilities will enable employees to communicate more easily in real-time, preventing important details from sitting in email and voice mail inboxes waiting to be addressed. And at those times when a phone call is necessary, SharePoint's presence capabilities will enable employees to see who's actually at their desks, further reducing the number of calls that go into voice mail.

In addition to such hard-to-measure efficiency gains, the new technology will help Holland Casino slash travel costs as employees adopt the tools to coordinate with colleagues at the various casinos. According to de Haas, those savings alone could save the company a substantial amount of money each year.

4 On Productivity

4.1 Introduction

The world around the organization is changing. Value chains have opened up and there are new pressures on businesses. But what does it look like inside the organization? How do these changes impact the inner workings of the company? In this chapter we will look at developments and what is happening to the organization, then look deeper into what is happening inside company boundaries. Furthermore, this chapter will also spell out some directions for corporate IT on its journey to become the enabler that it always aspired to be.

Imagine the best-run organization that could be: an organization where you can benefit from the creativity, support and initiatives of all your colleagues; where autonomous units within the organization are responding properly to every business challenge and opportunity. Where there is a structure for knowledge management that makes the company more mature every day, leading to better decisions and ever-greater efficiency. Such an organization will have a culture where people are valued for who they are, and where people are free to express themselves. People in management roles function as facilitators and are open to feedback and suggestions for improvement from anyone with whom they are in touch.

We all seem to have an idea what such a great company could be like – how much fun it would be to work for one, and how easily such an organization would respond to change and even benefit from changes in the market. Still, most organizations continue to function in the "old" way.

Since the early twentieth century, management practice has become increasingly professional. Research has been done in the fields of metrics and incentives. We have looked into subdividing tasks and assigning roles. We have gained some insight into how to evaluate and motivate people. Yet when examining the progress in this area, we must conclude that management structures are largely unaffected. The way we manage people is still the same as it was forty years ago, while the markets around us have been changing. While management has been practicing and honing a command-and-

control management style, the job market and the regular market of consumers have changed dramatically over the years.

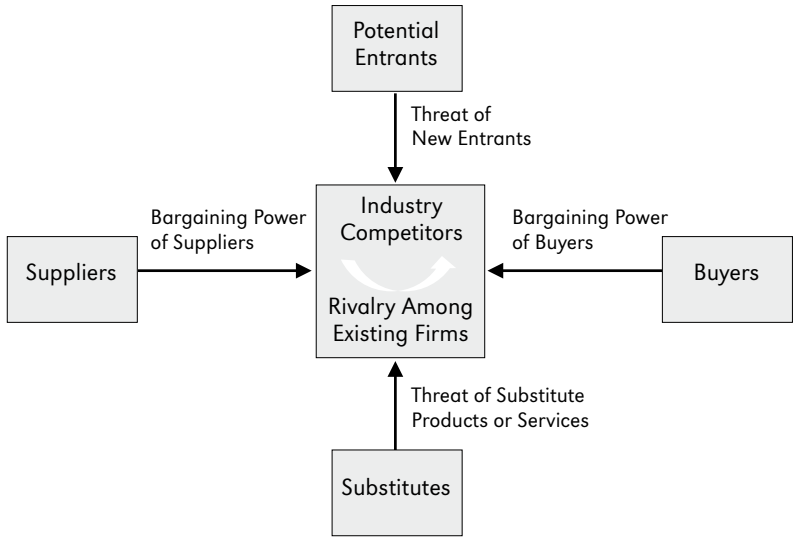
4.2 Changing Markets

In the previous chapters we discussed Michael Porter's work on value chains. Another topic Porter is famous for is the "five forces" model with which you are probably familiar. Michael Porter introduced the model in 1979 to describe markets, and specifically the competitiveness of a market. It has become a tool companies may use to analyze their market position, their threats and opportunities. In short, the Porter model looks at the choices that are available to every player in a specific market and how they impact the role of a producer: new and existing competitors, buyers, suppliers. In the model, the job market, which has its own dynamics, is not explicitly mentioned, but it could be viewed as a supplier's market supplying companies with the human capital essential for "production."

The five forces model, though 30 years old, is still a valid way of examining markets. Still, when we look at the model we immediately see that for many markets the present use of the internet has greatly increased the competitiveness of these markets. This is especially true for markets where no physical goods are produced are impacted. For example, it has become easier for buyers and suppliers to find each other and to organize bargaining power. It has become cheaper for new players to enter certain markets (this is possible in large part because a lot of IT support is readily available in the cloud.) The power companies used to have over their brand and marketing is slowly eroding thanks to different kinds of media: YouTube and the blogosphere are much more difficult to direct than radio, television and newspapers.

Ongoing Conversations Change the Pace of Business

> *A powerful global conversation has begun. Through the Internet, people are discovering and inventing new ways to share relevant knowledge with blinding speed. As a direct result, markets are getting smarter – and getting smarter faster than most companies.*
>
> – www.cluetrain.com



Source: Porter, 1979

Figure 4.1: The Five Forces[1]

We have discussed the *Cluetrain Manifesto* and *Naked Conversations* in previous chapters. Since the *Cluetrain Manifesto* was published online in 1999 (and on paper in 2000), we have been talking about markets as ongoing conversations between consumers, producers, suppliers and partners. A people-to-people market, very different from the business-to-business world we were used to. The *Cluetrain Manifesto* serves as a call to action for companies in a market where individual consumers are asking to be treated as individuals, with personal service and attention. Since the publication of the *Cluetrain Manifesto* in 1999 there has been a lot of change in the internet and business world, and most of it is in line with what the manifesto proposed.

The impact of these new market dynamics is in two main areas: the many different consumers and the incredible speed of change. To reach the consumers there is a drive towards extreme personalization. The social nature of people leads to changes in consumer behavior, which are happening at a faster pace than many organizations can handle.

And another characteristic of any conversation is that it is ongoing and incremental: getting and staying in touch with consumers continuously. Respond to changes in demand quickly. Leverage the better insights by creating bet-

1 http://www.libraries.psu.edu/business/images/industry/fiveforces.jpg.

ter services and solutions. Leave the one-product-fits-all and offer more specialized solutions for specific groups, or even individuals.

In *Naked Conversations* (2006), Robert Scoble and Shel Israel put a more practical spin on the *Cluetrain Manifesto*, giving the business world insight into how blogs are becoming an essential part of this conversational market as described in the manifesto. Blogs fit the bill due to their interactive nature, immediacy of communication and reversal of power. Any individual could start a blog within minutes, be discovered and thrust into the limelight thanks to social bookmarking and simple syndication of content. If an idea or bit of information is worth spreading, it will gain an audience in a matter of hours.

Where Value Comes From

Any organization looking to thrive in a competitive market will analyze its competitive advantage. Strategists will think about how to increase the competitive advantage of the company by partitioning those parts of the company that represent its key products or commodities and which make it unique, from others. This might be very visible, as in cases where part of an organization is outsourced. It might also be an implicit way of controlling the flow of money and investments: we're no longer investing in the "old" products, but spending time and money on developing new products and services.

This also has an impact on IT strategy. The fact that just maintaining existing IT systems costs money, while not creating new profits, puts pressure on IT. As a direct consequence, there is a need to, on the one hand, become more efficient and operationally optimized, while, on the other hand, becoming more agile and responsive to business needs.

Therefore, value is created in those parts or activities of the organization that are not a commodity. Yet the parts or activities that are not a commodity are also the parts that are hardest to optimize. This is a major problem for organizations: the need to change, innovate or even just respond to changing circumstances is enormous, yet the parts of the organization that are involved in this change, innovation or response are impossible to optimize. We need a good way to improve the productivity of this sector of the organization.

The Rise of the Consumployee as Source of Innovations

Who initiates technological innovation within an organization? We like to think it's the CIO or CTO, basing his initiatives on research and business needs. This is increasingly not true. In reality, often the individual employees are the ones driving the demand for new technology. Consumers try out the new technologies in their private lives, then they bring these technologies and expectations to work. The first smartphones were brought in by the people who liked this cool new thing. The first websites were built by creative technology people playing around with the new technology. Instant messaging was brought into organizations by people using it in the personal sphere. MSN, Facebook, LinkedIn, online video and many other examples started purely in the consumer sphere, then found their way into organizations, creating new opportunities for networking, sharing of information, *etc.* First these innovations were primarily driven by technical people, now they are occurring enterprise-wide. When it comes to Web 2.0 tools, in the private sphere there are little restraints and the tools are freely and quickly available so the pressure on corporate IT to adopt them is large. In most organizations, the IT department is ill suited to respond to these kinds of innovations. They either expressly forbid the use of any non-authorized tools, or simply ignore the problem.

Autonomy and Responding to Changes

Whenever an organization gets to a certain size, the management and coordination of the whole starts to become more difficult. That is probably the main reason why many companies never grow beyond a few hundred people: it becomes a different game to manage anything beyond that size. In particular, responding to change takes a lot of extra time and effort in the larger companies. How do we change that, and remain nimble regardless of the company size?

In a book by Ori Brafman and Rod A. Beckstrom called *The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations*, a possible solution is presented. They use the analogy in the book title: try to create organizations where every unit or sub-entity is an autonomous, viable part that could in theory be its own company (like species of starfish, which can regenerate limbs or grow new starfish from a single tentacle), instead of a centrally

controlled organization where everything depends upon the central core (like spiders who will die from losing their legs – excuse the cruelty of the metaphor).

They go ahead and explore the characteristics of "starfish" organizations, taking cues from AA (Alcoholics Anonymous), but also Al-Qaeda, among others. The book focuses on themes of cultural change and catalysts – the people who can help bring change and manage the delicate balance between centralized and decentralized.

There is a bigger trend that indicates that successful organizations are flatter (due to continuous focus on decreasing the number of layers of management) and try to delegate authority down the chain of command. This also gives rise to practices such as 360-degree feedback and self-steering teams.

IT support in the kind of organization that consists of numerous fairly autonomous units is also different from IT support in centrally coordinated, top-down organizations. Instead of one "client" for IT, there are many. Instead of one solution, there may be a need for many different solutions based upon slightly different needs and strategies. The game of finding and supporting the commonality between different units, and embedding these in an enterprise architecture, becomes all the more important.

Worker Productivity Needs to Improve Dramatically

> *Increasing productivity is ultimately what determines the living standards of people, the competitive advantage of organizations and the wealth of nations.*
>
> – Erik Brynjolfsson, Director of the Center for eBusiness, MIT[2]

How we motivate people in a business context and how we provide them with the right incentives to reach their highest productivity is a continuous challenge to organizations. Changes in culture and tools bring new challenges in the effort to make people productive. The introduction of new tools and channels of communication also brings challenges on a very personal level: people struggle to avoid being distracted from "work" by email, internet, messaging, twitter and numerous other interruptions.

2 http://productivity.mit.edu/.

Productivity in a business context is not measured as the sum of the productivity of all individuals. It is really only the productivity of the collective. Only if all people work well together can an organizational unit be really productive. If everybody is busy creating papers and emails, that might be perceived as a high personal productivity, but it might not be the greatest collective productivity. Evidently, any group of people working together needs to have a continuous process that examines the productivity of the group. This process must be continuously open, to improve how people work together. When we're talking about collaborative culture, this is what we mean: everybody is responsible for maximizing the productivity of ALL collaborative groups they are a part of (and perhaps even of groups they are NOT part of).

This is very much a bottom-up culture. The classic example is that it was only when car-manufacturer Toyota started taking the ideas and insights of factory workers seriously that they could improve the quality and productivity of the whole production process of their cars. In the process, they changed their entire way of managing production and quality. Similarly, when we want to improve administrative organizations, we need to have a way to structurally involve all "information workers" in optimizing the whole process.

Productivity is an interesting metric. We like to think of productivity as a very concrete number that can easily be quantified, but in reality productivity of an employee or company as a whole is hard to determine. Yet we do realize that "productivity" is directly related to the revenues and ultimately the profit of the company: if we can do more work with fewer people, we are bound to earn more and spend less.

The first major steps in improving productivity were made in manufacturing: optimizing the environment, processes and necessary skills to maximize the output of the factory while minimizing the number of people involved. This is also the base for Six Sigma, Lean and the CMM methodologies.

Later attempts to apply these to the "office" side of organizations, or to entire administrative organizations, turned out to be more difficult. Some parts (*e.g.*, claims processing or data entry) were fairly similar to manufacturing, so the same lessons could be applied. There are great examples of how groups of typists were trained and optimized to be highly productive. However, some parts were harder to optimize: one-off projects, creative processes,

ad-hoc responses to new situations. How to optimize the productivity of a team that develops new products and services?

Collaborative Knowledge Management

One of the elements that will improve productivity of those parts of an organization that are unlike "production" is knowledge management: build corporate knowledge and use it to provide people with guidance and support. A lot has been written about knowledge management, and it is a bit of a holy grail: a lot of promise but ever-so-hard to achieve.

The newer tools that support collaboration seem to help a lot in embedding knowledge management into everyday processes. One of the challenges has always been that people are willing to USE information once it's there, but they are NOT willing to create or add information if it is not in their immediate best interest. A special situation arises when we use the right tools to support people in their everyday processes: just by using the tools, they will add information to the whole. By categorizing information for their own purposes, that cataloged information may be shared with others. By prioritizing tasks or bits of information for your own use, you can share this evaluation with others. By selecting certain links or words over others, statistical information is created that ranks relevance.

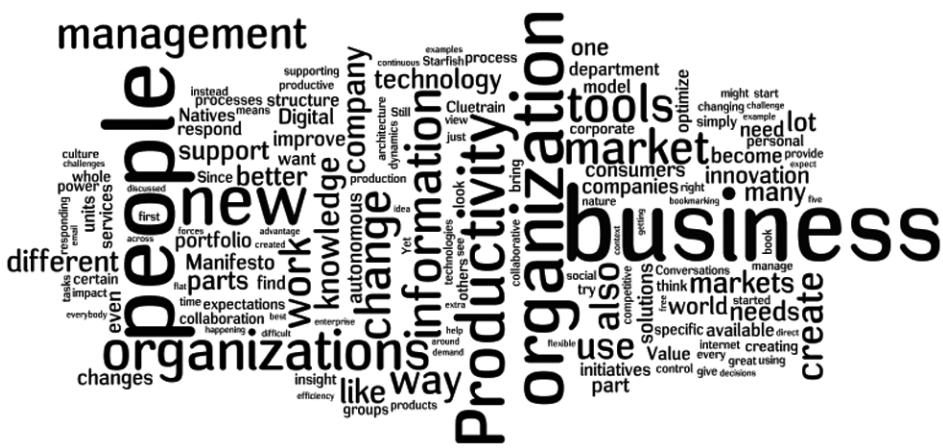


Figure 4.2: Tag-cloud of this chapter, generated at Wordle.net

Once we take information and processes out of the email tool and start using other tools that are focused on retaining information in a structured way

(portals, wikis), we can improve the way we collect and create information. Improving access and lowering barriers to adding even more information will create even more and better "knowledge." A lot of the tools would also provide the support to enable structure and meaning to emerge automatically. For example, *tag-clouds* that show the contextual use of words could give a quick idea of the topics discussed in certain passages, or "most visited" links could give insight into which pages are most likely relevant on an intranet, especially if we could see "most visited by your peers" (*i.e.* "social bookmarking").

Digital Natives Accelerate the Change

The digital natives, the newer generations, will bring some extra impetus to all the initiatives mentioned above. Once they start thinking about business, sales, marketing and optimizing organizations, expect to see extra pressure on new-style productivity, flat and autonomous organizations, and a different view of work and commitments. The changes we can expect are rooted in the beliefs and characteristics of the digital natives:

- The world is flat. They live with an international view of the world. While they have some geographic "home," it's easy for them to connect to people and business across the globe.
- There is a greater dislike of bureaucracy, and some disrespect for authority. Motivation is not accomplished through exercising power but through inspiration.
- Social in nature. Having many friends and connections, they actively use this network in personal and business life.
- Their commitment is based on deliverables rather than on a span of time. Ideally they work whenever they like, as long as they deliver on time.
- Technology is not seen as technology, it's simply there to be used. When you are born in a world full of computers and websites, the technology behind it is a lot less interesting than the possibilities in practice. This will also mean they will have higher expectations of "what should be possible" using technology, since they are less interested in the complexities of implementation. ("If this website has it, why can't we?").

For the digital immigrants, it's hard to imagine what it means to live with the assumptions and expectations of a digital native. There are a lot of great examples of generational differences between natives and immigrants: from the father who could not explain why at the vacation address television

shows were not available on demand (there was no TiVo, like at home) to the mother who can't grasp that her daughter has over 300 friends online, most of whom she has never met. Or even the older brother who can't see why (or how) his younger sister only uses email to communicate with "older people" like him.

The new generations want to be productive and use the tools available. They want to work in autonomous teams that are free to control their own structure and dynamics. They want to think and work across organizational boundaries. They will bring a new wave of technologies and expectations to the corporate world.

4.3 Consequences for IT

We started with the insight that many innovations in technology were not instigated by the CIO or the IT department. So what is the role of an IT department in supporting all these developments? What does an IT department need to do to enable all these new ideas and initiatives?

IT's first instinctive reflex will be to try and stay in control: create strict rules that everybody has to abide by, and create a governance structure that checks if the rules are not broken. This will give the organization great control over the technology portfolio, but it will stifle innovation and business dynamics. Business doesn't simply want to introduce IT complexity for complexity's sake; it is usually in pursuit of business goals or ideas. A more flexible and dynamic view on IT is needed to find the right balance between control and freedom.

Responding to business change means supporting a more flexible IT. This is where enterprise architecture, IT architecture and specifically service-oriented architecture are positioned: trying to use an architectural style that is aimed at reuse and supporting agility. The IT department will look for ways to optimize the IT portfolio and create the best set of IT assets. The focus shifts to a portfolio view that is focused on "today and tomorrow" and not just on "delivering projects." The IT portfolio is the set of tools that are offered to the business users to let them create or configure their own solutions (instead of only offering IT-crafted, specific solutions).

This fits neatly with the organization that is comprised of autonomous business units. If the tools are part of a portfolio that business units can select from as they like, they are free to create solutions that fit their specific needs. If there is also a way to include external services, offered from the cloud, it means the organization has the flexibility to leave parts of its business to the market if the market has started to offer a specific business task at a better price and/or quality. Think of the business as a portfolio of business services, created and managed by autonomous business units, supported by IT services that are internal and external, depending on the market.

The digital natives will expect these tools and platforms to be available once they start entering the workplace. They will introduce new technologies and expectations themselves. The IT department needs to get ready to support this drive for innovation. Denying its existence (or its value) will not work, nor will strict guidelines that forbid innovation: the digital natives are likely to "vote with their feet" and try to find employment elsewhere – with your competition, perhaps?

One thing that the IT solutions should allow, regardless of the fractured nature of the business or the complexity of the IT portfolio, is building corporate knowledge. The reason for doing certain business tasks in the context of an enterprise is to be able to create efficiency and lower the cost of transactions needed to complete the tasks. One important way of creating efficiency and lowering the cost is to build corporate knowledge: learn from experiences and let people share knowledge across the network. In practical terms, this means that knowledge-building should be ingrained in the platforms:

- Tagging (adding classification information to assets);
- Bookmarking (categorizing and selection);
- Rating (evaluating value);
- Groups (help people find peers to exchange information that fits their needs);
- Trends (give insight into popularity and the way the wind is blowing, making for better business decisions); and
- Collaborative sense-making (create an open dialogue that interprets information and tries to uncover hidden meanings, allowing better insights and better decisions).

The tools for collaboration illustrate exactly the role IT should be playing in modern business. IT doesn't create or DO the actual collaboration, it simply provides the tools. IT doesn't determine HOW people use the tools, it simply makes sure they are flexible and available. IT doesn't have to be involved to create new collaboration initiatives, all it has to do is respond to new channels and tools that are entering the industry. The business users will find out what they want, what will work. IT gives them the pen, typewriter and brush and lets business discover what works for its needs.

Real Change is Business Change

IT will need to respond and provide the right tools for business, but it is up to the business side of the organization to find the best new structure. As Gary Hamel argues in his book *The Future of Management*, the only sustainable innovation is the innovation of management. Only when we examine the workings of the organization itself and optimize the way people manage and work, can we hope to increase business productivity and business innovation. As Hamel wrote, the exact design of what such an organization looks like will be different for each company, but the themes of "flat organizations," increased autonomy, bottom-up initiatives and better collaboration will be present in any organization. But here lies a challenge, since the structure of management is also the hardest to change. The people that have to initiate change will also be the people mostly impacted by it.

Case: Sydved Transforms Complexity into Simplicity

Integrated Interface Shifts Focus from Administration to Timber Procurement

When you're in a business like wood procurement, the last thing you want is to have folks stranded at their computers, drowning in repetitive business processes. But that used to be the situation at Swedish timber-purchasing firm Sydved AB, which made the decision several years ago to move much of its administrative staff to other functions. This left employees in the field to manage the myriad of details involved in coordinating with forest owners, wood harvesters, transport companies, customers and colleagues.

At the time, those field workers had to swap between some 25-30 applications used for tracking harvest information, managing contracts, generating reports and handling the countless other processes comprising a single contract. Worse yet, they had to toggle between the various contracts, creating an inefficient combination of wasted time, excessive processing demands, and operational complexity, when what they really needed to be doing was visiting harvest sites, negotiating purchase agreements and executing contracts. And as difficult as it was to enter and manage the information, it was equally challenging to view it, what with all the switching back and forth from this contract to that, and from one menu to another.

The drain on the company went even further, because the complexity of the system required that Sydved provide heavy support for its field staff, whose normal job functions are related to purchase of wood and managing the harvesting of forests, not performing administrative tasks. The result was a whole lot of questions. "Before, they were never taught how to navigate the system environment, so they didn't know what to do," says CIO Roland Persson.

PEA: Collaborative Business Process Management at Its Simplest

That all changed when Sydved tapped its IT team's .Net and C++ programming skills to build a new system that greatly simplifies the coordination of so many moving parts. The resulting system, called PEA, is an achievement in collaborative simplicity. It combines more than two dozen applications into a single row-and-column interface that allows field staff, as well as other staff throughout the company, to access all the contracts they're working on, along with the status of each project, all in one view. PEA enables real-time collaboration, and its ability to keep employees up-to-date on their joint efforts with colleagues delivers truly collaborative business processes. And field staff have no idea what application they're working in at a given moment – nor do they need to – as PEA leads them through the process, step by step, without ever leaving the main interface.

Not that development of PEA occurred without hiccups. For instance, initially the system was designed to update interactively, in real time, but the added drain on computing resources was more than Sydved's IT environment could accommodate. And that meant unacceptable latency caused staff to wait inordinate amounts of time for requested information. "Response time is important because users are impatient all of the time," says Persson. "Even if you've got a lot of information, they don't want to wait even 20 or 30 seconds." To solve that problem, Persson's team tweaked the system to update in batch mode each night, easing the drain on IT systems during business hours. Also, if the user needs to, he can choose to refresh the interface, wait these seconds and get the most current data: it is up to the user.

Now, Sydved employees not only can use a single view to see the status of all current contracts, they also get visual clues as to the status of each process as well as reminders of specific tasks that await their individual contributions.

Employees on the Same Page = Competitive Advantage

Persson estimates that PEA, which runs on IBM iSeries servers calling an Oracle database, has enabled field staff to reduce their administrative workloads by as much as 20%, and has prevented Sydved from having to increase its administrative staff by at least 10% to keep up with the company's growth. It has also yielded a more efficient staff by enabling employees to quickly view the status of everything from timber availability to harvesting difficulties to costs. With a turnover of people of 40% in the last 3 to 4 years, PEA has been very valuable in quickly getting new staff on track – they can immediately see what they have to do. Combine that with the benefits of streamlined administration and improved information accuracy, and Persson believes PEA is twice as effective as the mish-mash of applications it replaced. Additionally, PEA was designed with sufficient flexibility to add processes or contracts easily on the fly, an important consideration given the difficulty of predicting every task field that might eventually be needed to support a contract.

Any way you look at it, Sydved's investment in PEA is money well spent. The new system has reduced the volume of questions and issues that arise during the fulfillment of a contract, and it has created a new level of collaborative business process management. That translates to faster decisions, which constitutes a competitive advantage. Where confusion and misinformation reigned before, says Persson, "Now we have different people talking about the same things."

5 The Anatomy of Collaboration

5.1 Introduction

"Collaboration" and "communication" are different themes on the same spectrum; only when we communicate can we collaborate, and the part of collaboration that involves working with others is some form of communication. Lessons in communicating teach us to consider the partner's viewpoint and to create a connection to exchange information. This is hard enough in face-to-face communications, and it doesn't get any easier when collaborating across a distance. The many tools available are striving to approach or even improve upon the face-to-face communication we are all used to. In this chapter we will discuss the ingredients of collaboration, and some of the tools that are available to support it.

As Marshall McLuhan eloquently put it: "We become what we behold. We shape our tools and then our tools shape us."[1] The first tools available mimicked the tools we used in real life collaboration, people meeting people face-to-face. Over time, the tools have improved and are now using the new capabilities that come with the medium. Regardless of the medium we're using or the tools we have to help us, we can talk about the capabilities we need to collaborate effectively. We have the need to:

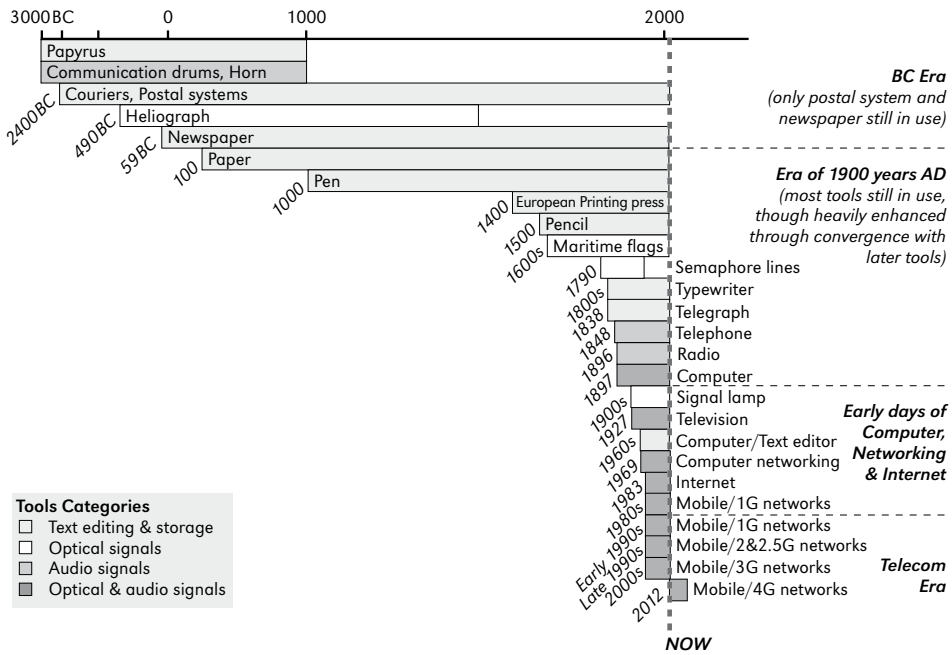
- Have a place to store and add information, to create deliverables and build knowledge. Write it down on paper, record it on tape or store it "in the cloud."
- Interact, communicate: exchange information between people, the main difference from doing something alone.
- Know and share "status": is someone available? Can I approach you with a question?
- Know more about with whom we are communicating: know the identity, role and position of someone we are working with. Know the social networks.
- Discover information: search and find. Have a way to structure information.

1 http://en.wikiquote.org/wiki/Marshall_McLuhan.

- Be notified: we don't only want to search, we also want to be notified of important events and information.
- Integrate: we want all these elements to be seamlessly connected and integrated.

To take collaboration and communication to the next level within the company and within the value chain, it helps to understand the types of collaboration that take place, and know how the available platforms support, enable and enrich these collaborations.

There are a fair number of tools and websites available to support some kind of collaborative work. But, do they offer what businesses need? Do they have the feature sets to automate and to support the information worker? Do they offer the collaborative environment that business needs, an environment where everybody works together in a seamless collaborative way and is able to work from any place in the world, unleashing the creativity and innovation of the individual and the crowd (collective intelligence)?



After: Mhd Alaa Al Khourdajie
Sources: Wikipedia, History of Telecommunication/Alex Michael & Ben Salter, 'Mobile Marketing'

Figure 5.1: Timeline of Communication Tools

5.2 Electronic Communication

The most widely used collaboration tool is, of course, email. It was preceded by other electronic communication tools invented years ago: first the telegraph, then the telephone, and later the fax. Samuel F.B. Morse invented the practical use of the telegraph, on May 24, 1844. The first official message in Morse code, "What hath God wrought?" was sent from the old Supreme Court chamber in the United States Capitol to Morse's partner in Baltimore.[2] The word "telegraph" was derived from Greek and means "to write far," which is exactly what the telegraph does and what it was meant for: to communicate over a long distance. It's hard to grasp how the telegraph changed the perception of distance. In those times, the only ways to send information to another place was to physically bring it there or use a complex system of watch posts and signals (or smoke). To send a message across America would take 10 days (one way), using the Pony Express.[3] And there was no guarantee that the message would even arrive.

Figure 5.2: Pony Express Poster

Around 1870, Alexander Graham Bell's telephone added an extra dimension to the limited electronic communication tooling of the time. Different from the telegraph, it enabled synchronous communication with speech. Not everybody was convinced of the value of this innovation. In England, the most prominent man of the time in the field of communication, the Head Postmaster, was quoted saying "No, sir. The Americans have need of the telephone – but we do not. We have plenty of messenger boys." Admittedly, it must have been hard to imagine that the telephone would evolve into something every person could own and that might be used by teenagers to call each other and ask, "where are you?"

2 http://inventors.about.com/od/tstartinventions/a/telegraph.htm.
3 http://en.wikipedia.org/wiki/Pony_Express.

Communications support grew from physical delivery to remote communication, to synchronous communication, and then to synchronous communication by everyone, all in only a hundred years or so. In the 1930s we had the telex (basically a long-distance typewriter), and in 1950, a century after the introduction of the telegraph, Bell Laboratories came up with the first "DataTelephone." It was the first implementation of a "modern" modem with a speed of 50 kilobytes per second. From there it took another twelve years before Ray Tomlinson developed a system for sending messages between computers that used the @ symbol to identify addresses. The internet was in sight, and in 1988 email became more widely adopted through the development of the email client Eudora by Steve Dorner. The basics of email, and its use, have been the same ever since, and evolution has been almost idle for 35 years.

Figure 5.3: Ray Tomlinson

Originally email was a communication tool, intended to send and receive information. As it became widely adopted, it also became people's preferred way to work together. It has taken over the telephone as the most important facility any business must have, and it has become part of many business processes. Just think of what would be worse for business: the phone system down for a day, or email?

The Problems with Email

Email wasn't invented with a wide spectrum of collaborative work in mind. It was invented for sending letters in the standard format of the pre-electronic era. (A telling sign is that the CC refers to "carbon copy" from the time when letters were duplicated with carbon paper placed between multiple sheets of paper in a typewriter.)

In the time of the Pony Express, people knew better than to send multiple copies to their peers asking them to change something and return the revision by Pony Express. They knew then that it would end up in a complete mess. Multiple copies, multiple versions and multiple people who can change

the data leads inevitably to a nightmare. With email, colleagues who receive and modify a document are going to be calling each other, arguing about who has the most recent version and whether all the changes the others made are also present in that version. It often ends badly.

The problem with email is its versatility, which results in an email overload problem. Or as Chris Rasmussen put it, "Email is not bad, it's simply overused. It's a 'when you only know how to use a hammer, all problems are nail type things."[4]

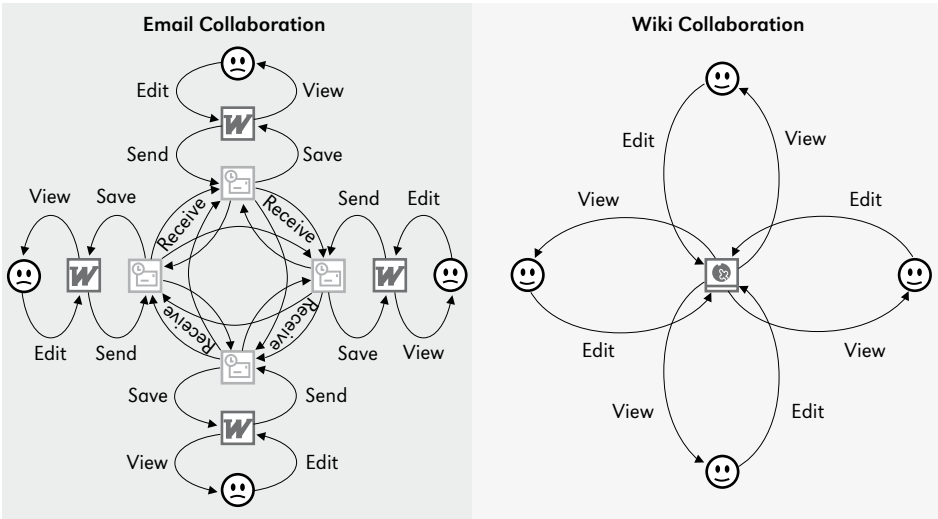


Figure 5.4: Email vs. Wiki Collaboration

Many organizations did research into to the email overload problem in the last decade. They all reached the same conclusion: people will get "email paralysis" if we keep sending mails as we are. We need to reexamine our use of email, since it is costing us productivity and performance. An article in the *New York Times* with the title "Struggling to Evade the E-Mail Tsunami" warns that email has become "the bane of some people's professional lives."[5]

Email administrators are asked to allow for bigger attachments and more storage capacity. Some email providers have started providing email boxes that span many gigabytes. This might sound very handy, but keep in mind

4 http://www.wikinomics.com/blog/index.php/2008/03/29/wiki-collaboration-leads-to-happiness-updated-and-revisited/.

5 http://www.nytimes.com/2008/04/20/technology/20digi.html?_r=3&oref=slogin&oref=slogin&oref=slogin.

that most email is unstructured, it is often redundant, and the information in the archive is not shared with anyone(!). There are now even special courses for managers that teach them how to handle email: a tool has become a task in itself? The courses arm the manager with simple advice such as, "don't keep your email program open the whole day; only answer mail at beginning or end of your work days." With advice like that, we are taking a step back in the direction of the Pony Express era: send a letter and wait a few days, not knowing when the receiver will answer it.

Steve Whittaker from the University of Sheffield conducted research into how email could more effectively be used for task management. He summarized the problems people have with using email for working together, under the title, "Why Email is Not Enough".[6] He noted that there are numerous problems with using email for task management. Users relying on email complain about:

- Forgetting commitments to themselves and others (tasks that they "owe" or are "owed");
- Tracking global task status (it's hard to abstract from multiple messages to determine where a project currently stands);
- Determining who's involved in a complex task;
- Integrating information across different technologies (people may communicate about a task in email, voicemail or using IM – and it's often hard to combine information); and
- Managing attachments.

How many times have you had an email exchange with someone that took many more emails and a lot more time than expected, when picking up the phone would have made the conversation much quicker and more efficient?

5.3 Other Tools, Other Activities

There are limitless options these days. There are so many new tools available to communicate and collaborate with others that for any situation there is a tool that will fit. Email platforms will lose the battle, even though they have expanded over time. Most professional email platforms have facilities for assigning tasks, tracking and reporting progress on these tasks, automation, and even scheduling and archiving functions, but the use of these functions is

6 http://www.daimi.au.dk/~bardram/ecscw2005/papers/whittaker.pdf.

limited. Email is competing with many new tools that are better at collaboration, task management, instant communication, sharing persistent data, *etc.*

Many new tools also belong to the "Web 2.0" world. The online places where we can talk and converse with others are all part of the global conversation, as we discussed in Chapter 3. When we collaborate with others, we can do so in many places. We can use online conference calls that record our meetings, we can use online whiteboard to collectively draw diagrams or we can jointly edit Excel spreadsheets. We can post our findings on our blog, use Twitter to communicate about minor updates or use MSN Messenger to ask questions directly. Figure 5.5, from *The Conversation Prism* by Brian Solis and Jesse Thomas, shows what the current landscape of communication channels looks like, and the options we have when choosing our tools.[7]

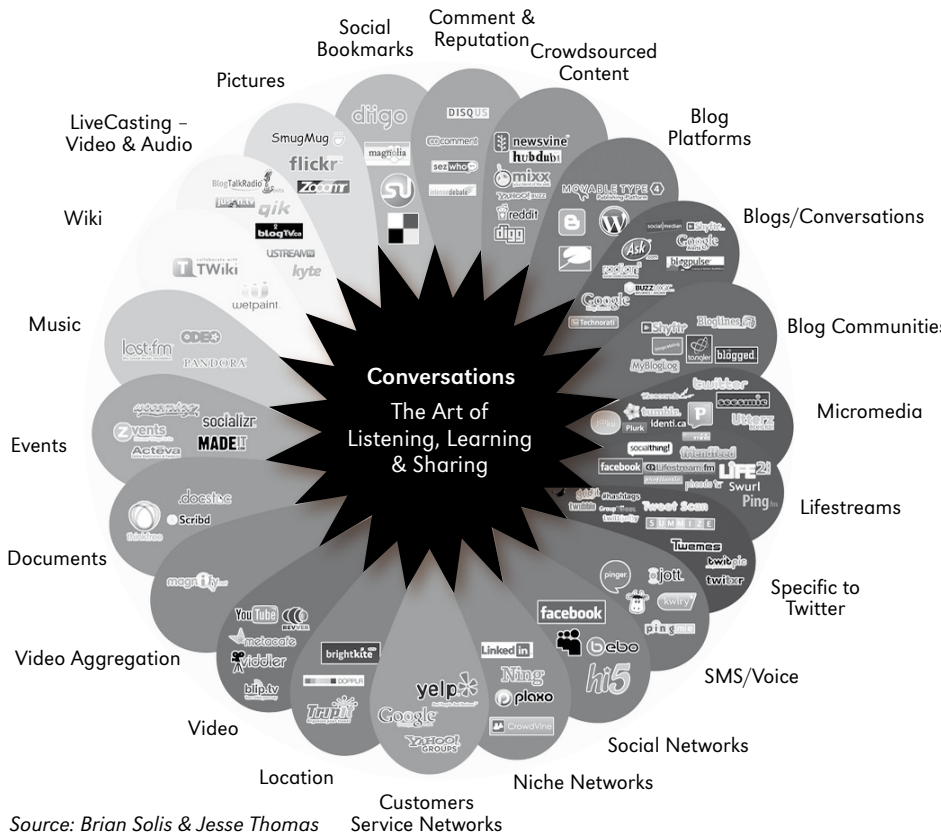


Figure 5.5: The Conversation Prism

7 http://www.briansolis.com/2008/08/introducing-conversation-prism.html.

Ultimately, the different tools will enable different behavior. Deliverables and information that is meant to be longer lasting will find a more persistent medium than email. Reference materials find a resting place where people know how to find them. Fleeting information will fade to the background if it is sent using the right channels instead of being mixed with the persistent information. The activities of people will focus again on the value they can add to a conversation, a deliverable or a process. We are no longer managing our email but managing value, deliverables, performance and innovation.

So let's take a closer look at the capabilities that make up collaboration. What are the things we can use tools for? We will discuss:

- Build deliverables, build knowledge;
- Interaction;
- Presence and status;
- Relations and social structure;
- Discovery, search and find, create structure;
- Notifications;
- Integration.

In the rest of this chapter we will elaborate on these elements, and give examples of tools that can be used to address them.

Build Deliverables, Build Knowledge

Collaboration is about working together and creating deliverables. People may work as a team to write a document, come to a decision or evaluate a product (*i.e.* produce an evaluation). The most basic level of support will help us build something together, combine our efforts into one, and find a way to store our efforts and make them available to us and others.

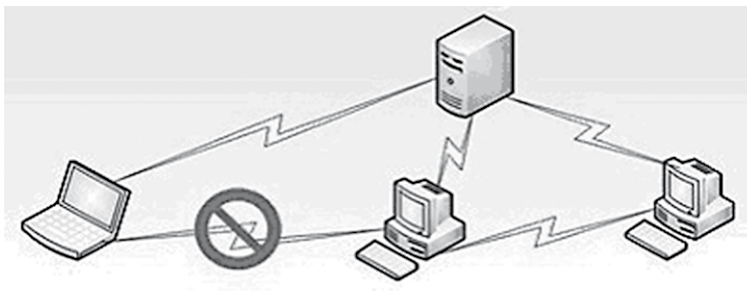
Early on, people realized that "collaboratively building a deliverable" could be used to improve knowledge management. Knowledge management is like a holy grail for organizations. To learn from experiences and to build a dataset that can be used to respond to any circumstance is a highly desirable goal. If we can entice people to contribute to a "corporate knowledge" deliverable, did we find the grail? (yes, of course! The crux being in "if we can entice…").

There are many tools to support the creation of deliverables and build knowledge, and perhaps not surprisingly the simplest is the most popular. A wiki supports both creation (editing in a browser) and storage online:

> *A **wiki** is a page or collection of Web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified markup language. Wikis are often used to create collaborative websites and to power community websites. The collaborative encyclopedia Wikipedia is one of the best-known wikis. Wikis are used in business to provide intranets and Knowledge Management systems. Ward Cunningham, developer of the first wiki software, WikiWikiWeb, originally described it as "the simplest online database that could possibly work.*
>
> – from http://en.wikipedia.org/wiki/Wiki

Wikis have certain advantages over email, such as the option of versioning, maintaining one central point of storage where data can always be accessed (instead of being hidden on someone's computer, see also Figure 5.4). Mostly, wikis allow the users a lot of freedom to continually interact and improve the information.

Wikis, but especially the more advanced tools (such as SharePoint) that enable the collaborative building of deliverables, offer extra features that support reliable collaboration such as versioning and security. Also there are collaborative tools that use peer-to-peer models to store and share information. While the term still has an ambiguous ring to it due to illegal downloads that use the same models, P2P is actually a valuable way to share information without the need for centralized servers, storage and control.



Using **Groove**, clients will attempt peer-to-peer connectivity. Failing that (due to firewalls, offline clients, *etc.*) Groove will use a Groove Relay Server to queue the deltas untill the clients can be contacted.

Figure 5.6: Peer-to-Peer Architecture

Microsoft Groove is a peer-to-peer solution that has the ability to share information so that people inside and outside the company can work together on the same documents. It is simple to use and doesn't need central servers to store data (though it can be connected to SharePoint). Instead, documents are spread out among all the collaborators.

> *Office Groove 2007 is a collaboration software program that helps teams work together dynamically and effectively, even if team members work for different organizations, work remotely, or work offline.*[8]

Windows **Live Mesh** is a Microsoft product, currently in beta version only, that is a more infrastructural approach to sharing information – something like sharing a folder on a network. Live Mesh has the ability to share folders between different kind of devices, so you can share any kind of file type with friends, family and colleagues, so long as they are in your so-called "Mesh." It can also be used to synchronize the data on multiple computers.

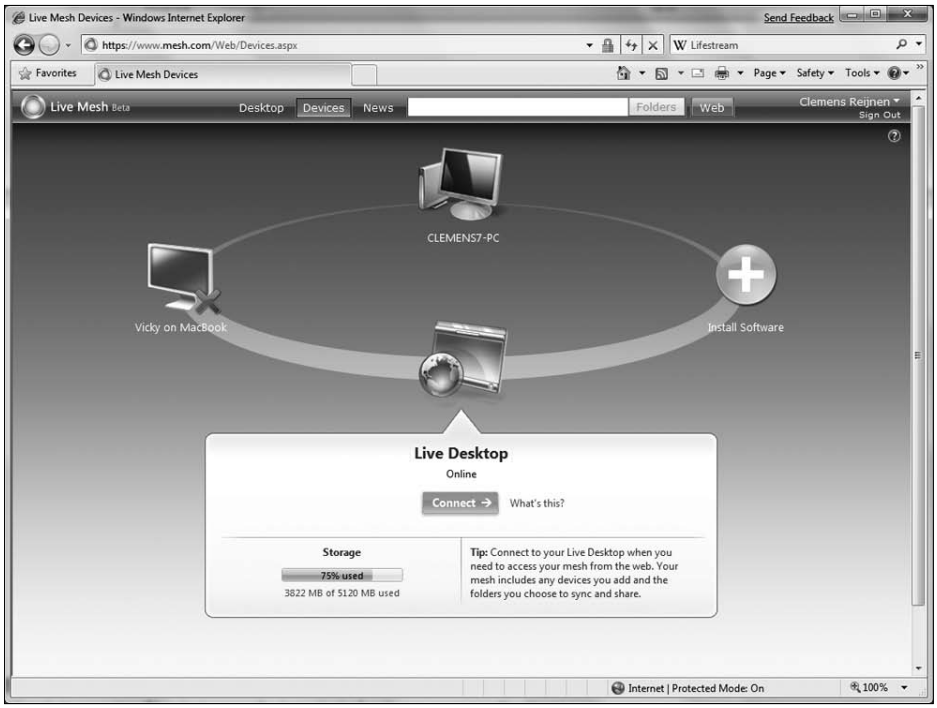


Figure 5.7: Live Mesh

8 http://office.microsoft.com/en-us/groove/HA101656331033.aspx.

A feature related to the tools above is **tagging**: with tagging people add metadata to assets. Tagging is not a single tool but a feature found in many tools and websites. It is essentially a method of building knowledge: classifying or categorizing things based upon the keywords or terms (tags) people use to describe them. If tagging becomes a habit, the value of information will increase rapidly, leading to more accurate information. Like tagging, a rating mechanism is found in many tools ("did you find this page helpful"). Both are aimed at gathering metadata about assets. We will give some examples of tagging when we discuss "discovery" below.

Interaction

This is what we think of when we talk about collaboration: to interact with others! Interaction is what drives the whole conversation economy. We connect to others and interact with them. Interaction with customers helps build trust, gives us knowledge about what drives them, and lets us gather feedback or even advice about the services or products. Interaction with other people helps drive innovation and the creation of new ideas.

Figure 5.8: ICQ Instant Messaging

Some well-known tools for interaction are online conferencing tools (using audio, video and presentation), direct messaging, making it possible to "chat" with someone directly, chatboxes, forums, VoIP-calls and, of course, email.

Instant messaging: ICQ "I seek you" was the first internet-connected instant messaging program, released in 1996. It enabled users to send each other messages, send files and see each other's availability. These programs got more and more sophisticated, and at this moment they offer video conversations, gaming, and sending offline messages on a multitude of platforms, including your cell phone. Currently, ICQ has lost its market leadership to Microsoft, Google and Yahoo, who each provide their own instant messaging solution.

Figure 5.9: Cell Phone Instant Messaging

Also, blogs and microblogging are a great example of the read-write web, the internet where two-way communication is the norm: information is published on a blog and someone else can comment on it. Anybody can start a blog. Many companies already have blogs, to keep customers, suppliers and the rest of the world up-to-date on what's happening within the company, such as product upgrades, or just to encourage people to feel good about the brand and get to know the company through seeing some real people's words and faces associated with the company name.

> *A **blog** (a contraction of the term "**Web log**") is a website, usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order. "Blog" can also be used as a verb, meaning to maintain or add content to a blog.*
>
> – from http://en.wikipedia.org/wiki/Blog

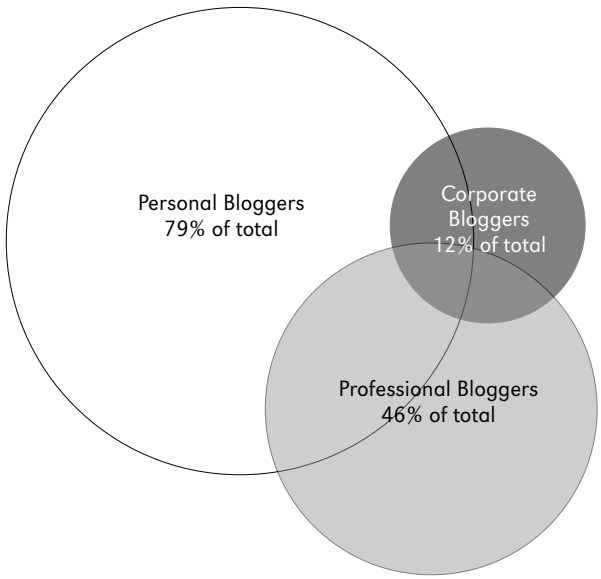


Figure 5.10: Bloggers[9]

While a blog may seem like a one-way tool (publishing posts), the reality of successful blogs is that, for the most part, authors of different blogs respond to each other, engage in long-running debates, and form a network of like-minded people that is indeed very interactive.

9 Source: Technorati.

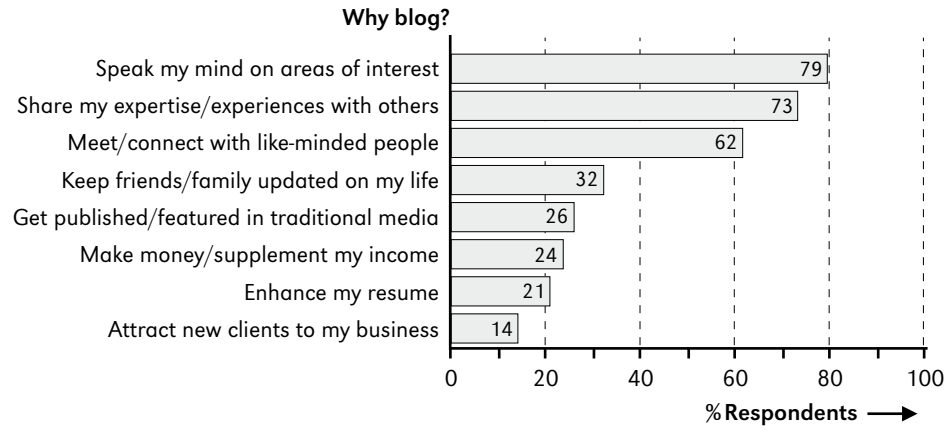


Figure 5.11: The reasons people give for blogging[10]

Microblogging is similar to blogging, with the difference being that the posts (entries) are short sentences that share status, events, thoughts or observations. Twitter.com is the leading service for microblogging. There is also Yammer, which is much more focused on the corporate world by allowing only people within a company to connect and share. It might address some of the security and confidentiality questions related to cloud offerings, but it has the disadvantage of not enabling the interaction with people outside the organization that can be so beneficial.

Presence and Status

Where are you? What are you doing? Can I interrupt? What are you working on? Do you have time for...? All very common questions when working with someone face-to-face. The same is needed online, to find who is available or what channel to use when communicating with someone. Sharing your "status" ranges from a simple "free/busy" status, to a status that tells people "this is where I am, this is what I'm doing, this is how long it will take, these are the people I'm working with." In the same sense, even the "out-of-office" assistant used when people are on vacation is a presence-indicator, as are your MSN Messenger status and your phone's voicemail announcement.

Knowing the status of people is essential for using more real-time communication tools, and it allows for more dynamic, flexible and autonomous

10 Source: Technorati.

behavior. Instead of simply waiting, the sender can take the proper action to ensure the best chance of a quick and correct response.

Instant messenger tools were the first to explore "status" more closely, because the way these tools work is by interruption, which creates the need to manage interruptions. You wouldn't want to be interrupted with "instant" questions all day when trying to get some important work done. It also asks of your colleagues to actually respect your status, very similar to real-life Cubicle/Office Etiquette Tip 2 and Tip 3:

Figure 5.12: Buddy List

Don't interrupt someone who is on the phone by using sign language or any other means of communication. Think twice before interrupting someone who appears deep in thought.[11]

Instant messaging programs usually show icons representing your contacts, and for each contact it will show the status. MSN Messenger, Microsoft's instant messaging program, and its corporate version Office Communicator, have, for example, options to set your status to Busy, Away, On the Phone and some other default statuses. You're also free to enter your own status ("Feeding the baby"). This gives friends and colleagues who are connected through an instant messenger program an easy way to see whether you may be contacted.

Status might be quite detailed. On the most information-rich end of the spectrum are the microblogging sites such as Twitter, FriendFeed and Jaiku. Here, the messages originally intended to convey status information have become part of an ongoing discussion with short messages. They now provide a way to let everyone know what you're doing, what's on your mind and what interests you. You might see it as a crossover between blogging and cell phone short message services (text messages), allowing users to write brief text updates (140 characters) and publish them. And the frequency of mes-

11 http://tips.learnhub.com/lesson/page/2791-30-tips-on-officecubicle-etiquette.

sages itself can also become relevant, given this example from someone who used it to figure out why people weren't responding to his email:

> *I checked into their Twitter stream to see what they'd been up to throughout the day. In one case, the person was at a conference. In the other, I wasn't sure, but the person hadn't sent a message in hours, so he or she was clearly offline for a duration of time.*[12]

Microblogging has even been used by a teacher to keep track of students, to send them messages and interact with them, in order to understand what keeps them busy. The continuous stream of someone's status updates, thoughts, event and responses to others is the online representation of his or her life: they are so-called "Lifestreams." Increasingly, lifestreaming is part of everyday life for people.

Relations and Social Structure

We like to work with people we know and trust. Building and maintaining connections between people and business is important for us in our working lives, but also in our private lives. We like it more, and we can be more productive if we know what to expect and we know who is the expert on a certain topic.

If we know the network, we know the people. If we know the people, we can properly evaluate their roles and know what added value each brings to a collaborative initiative. The famous Metcalfe's law[13] states that the value of any network is proportional to the square of the number of endpoints. Or at a personal level: having connections to twice as many people is four times more useful.

In the "real" world we build networks and make friends during social or business events. People meet, exchange ideas, talk about their interests, or simply start by giving each other their business cards. Online relations and communities share these characteristics with face-to-face networks and relations. A connection between people can be made when there is something in common, when there is the same interest or when one has information the other is interested in.

12 http://www.chrisbrogan.com/twitter-as-presence/.
13 http://en.wikipedia.org/wiki/Metcalfe's law.

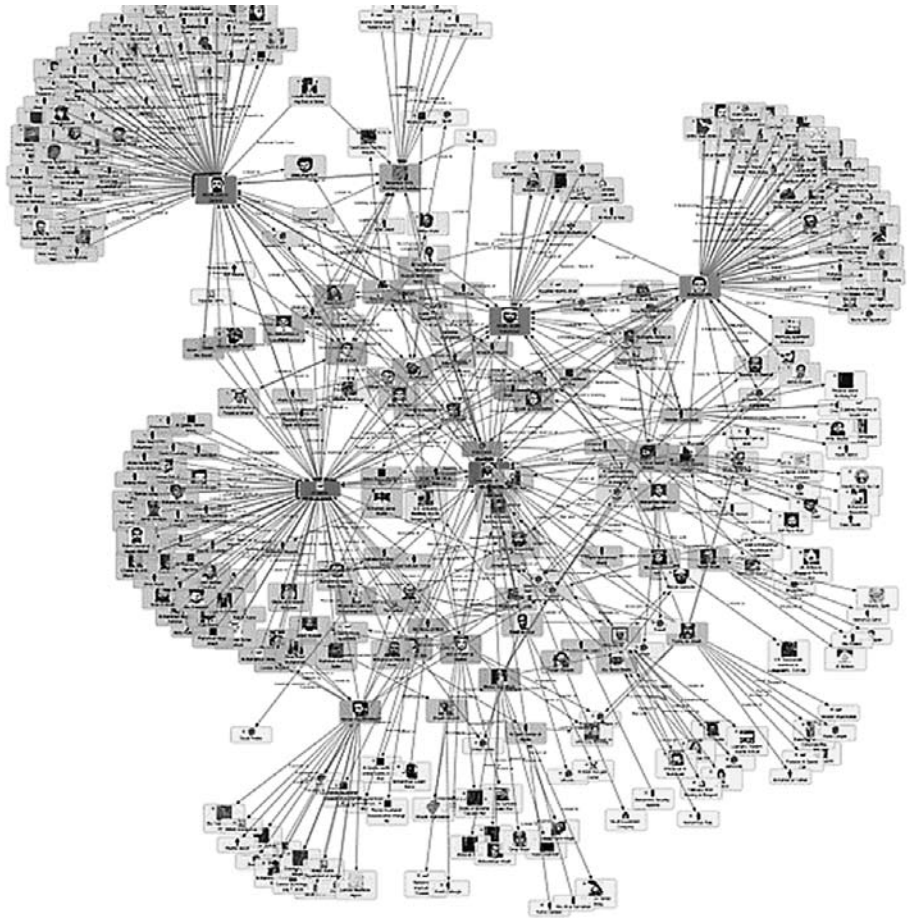


Figure 5.13: A graph displaying a social network. It is interesting to note that networks are dynamic and self-organizing

Although face-to-face networks and online networks share the same characteristics and benefits, creating and maintaining relations is different. Online there is a bigger difference in how people know each other and how strongly they are connected with someone. In the digital world, people tend to build much more expansive networks than in real life: a contact list of hundreds of contacts and friends is common.

Some of these contacts will be true friends; others we might be less intimate with. We could call a relationship with someone who shares the same interests and the same network of friends a high value relationship, a strongly tied friendship. In a strong relationship you know each other very well. In the real world, these kind of "strong" connections are very common.

The other connections we have we could call weakly tied relations. They are people you know, whom you may have met briefly but do not know well. You know enough about them to keep in touch, know where they work and what they might help you with. In online communities these weakly tied connections are made easily – easier than in the real world.

Both types of relationship have their benefits.

> *... strong ties are unlikely to be bridges between networks, while weak ties are good bridges. Bridges help solve problems, gather information, and import unfamiliar ideas. They help get work done quicker and better. The ideal network for a knowledge worker probably consists of a core of strong ties and a large periphery of weak ones. Because weak ties by definition don't require a lot of effort to maintain, there's no reason not to form a lot of them (as long as they don't come at the expense of strong ties).*[14]

> *Nodes often aren't as important as the connections between them. Reductionist science and analysis from the 19th and 20th centuries focused on nodes. I believe 21st century science, economics, political science, and computer science will use more complex systems theory to understand the interactions between chemicals, speculators, nations, and users.*[15]

The first tools that supported the storing of contact information were not all that different from using a rolodex, a list of people you know with some key contact information. The Contacts section in Microsoft Outlook also has this rolodex functionality, with the added option to store extra information about your contact, such as birthday, manager, their kids *etc*. The additional information is used to be courteous to your contacts and to maintain a good relationship with them. It is always nice if someone seems to remember the names of your seven kids. The main problem with this way of storing contact and additional relationship information is that it's hardly ever up to date or, even worse, it may be incorrect.

This is where the online, social network software comes in. It allows you to stay current with your relationship information. Your contacts will maintain their own information. A site like **LinkedIn**, a social network focused on professional relations, gives the user the ability to connect to colleagues,

14 http://blog.hbs.edu/faculty/amcafee/index.php/faculty_amcafee_v3/the_ties_that_find/.
15 http://radar.oreilly.com/2008/10/the-connected-economy.html.

former colleagues, clients, and partners. When a colleague moves to another job you are still connected and have the newly updated information available. In this way, maintaining relations and staying connected is much more accurate and convenient. Social networks are expanding, too, sharing more information, and giving you not only the names of your contact's seven kids but also their vacation photos. MySpace and Facebook are examples of popular social networks that are used more in the private sphere, though private and personal are increasingly mixed.

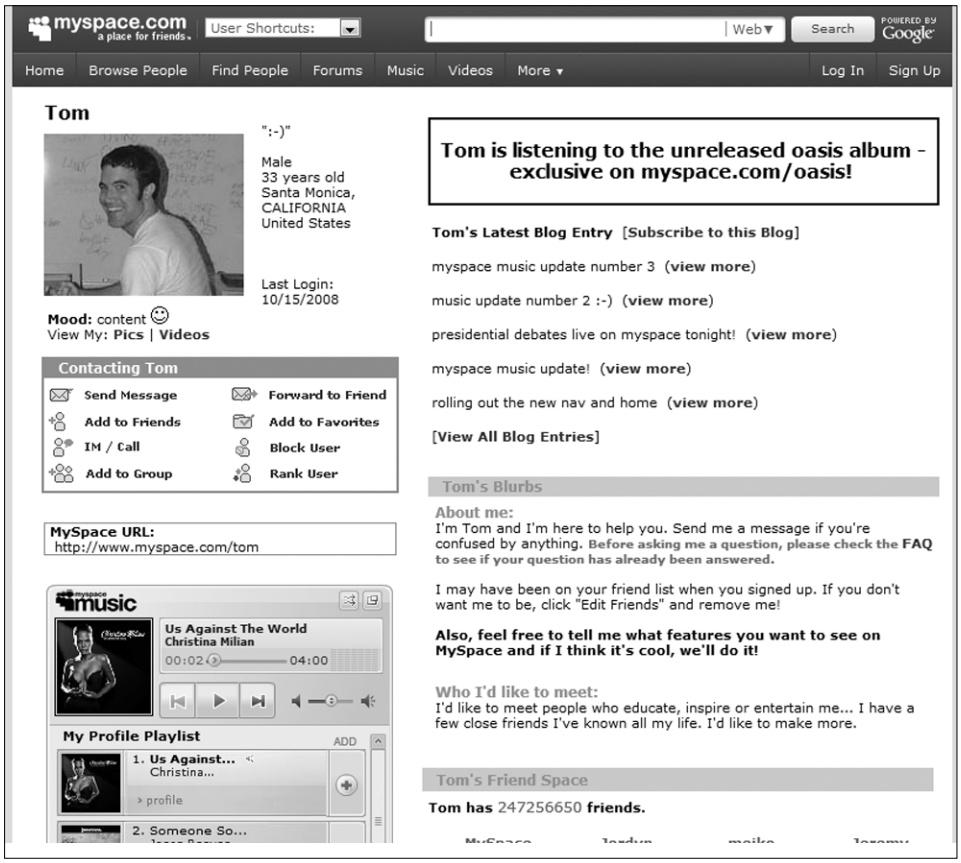


Figure 5.14: MySpace co-founder Tom Anderson, arguably the most popular individual on the internet with 240+ million MySpace friends (he is added by default to every MySpace account)

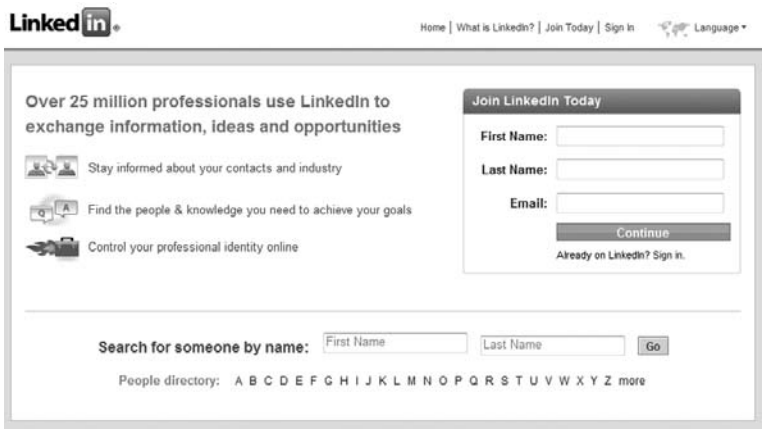


Figure 5.15: LinkedIn

> *SNS [Social Network Software] lets users build a network of friends, keep abreast of what that network is up to, and even exploit it by doing things like posting a question that all friends will see. All of these activities, especially the latter two, seem like they'd be highly valuable within a company, especially a large and/or geographically distributed one where you can't access all colleagues just by bumping into them in the hallway.*[16]

Online networks commonly have the ability to import contacts from a client application like Outlook contacts. This is useful during the initial phase of a social network, but isn't the killer feature on which to build and find new relations and contacts. It's importing your strong ties, those contacts with whom you already have a good relationship. Finding and connecting to new contacts, coming up with new ideas for innovation and new sources for knowledge sharing – that is more important.

> *Intuitively speaking, this means that whatever is to be diffused can reach a larger number of people, and traverse greater social distance (i.e., path length), when passed through weak ties rather than strong. If one tells a rumor to all his close friends, and they do likewise, many will hear the rumor a second and third time, since those linked by strong ties tend to share friends. If the motivation to spread the rumor is dampened a bit on each wave of retelling, then the rumor moving through strong ties is much more likely to be limited to a few cliques than that going via weak ones; bridges will not be crossed.*[17]

16 http://blog.hbs.edu/faculty/amcafee/index.php/faculty_amcafee_v3/the_ties_that_find/.
17 http://www.stanford.edu/dept/soc/people/mgranovetter/documents/granstrengthweakties.pdf.

Social Network Software is enabling the creation of these valuable weak-ties in different ways. For example, most of them have functionality like "maybe you also know these people," or "viewers of this … also viewed." This technology helps to build bridges between networks and helps to connect with the rest of the world.

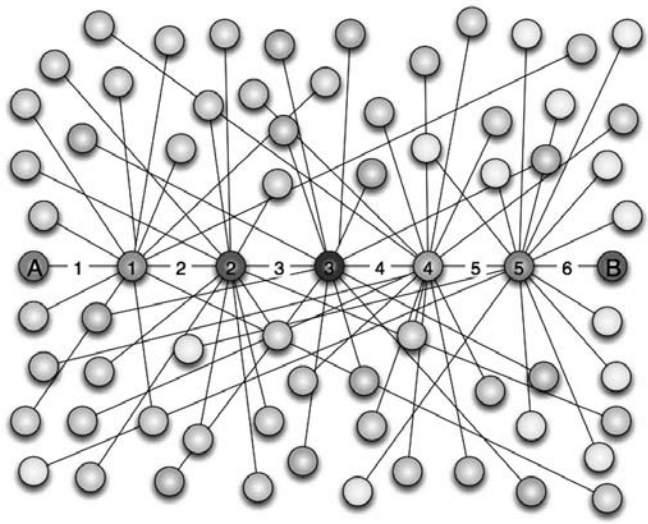


Figure 5.16: Six Degrees of Separation

> *Six degrees of separation: if a person is one step away from each person they know and two steps away from each person who is known by one of the people they know, then everyone is an average of six "steps" away from each person on Earth. The translation of the six degrees of separation into business terms is that if you need someone to help you, the best person in the world can be reached in at most six steps.*[18]

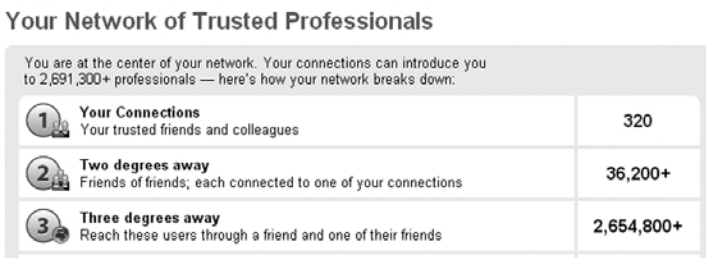


Figure 5.17: Three degrees of LinkedIn connections of one of the authors

18 http://en.wikipedia.org/wiki/Six_degrees_of_separation.

Using the Network for Rating and Reputation

An interesting thing happens when our friends and contacts start rating information they find. We know who they are and we trust their judgment. So now we have a method that almost automatically starts to make sense out of the information overload: things online my friends deem valuable must be valuable. But also: companies, product and services that my friends deem valuable must also be valuable to me.

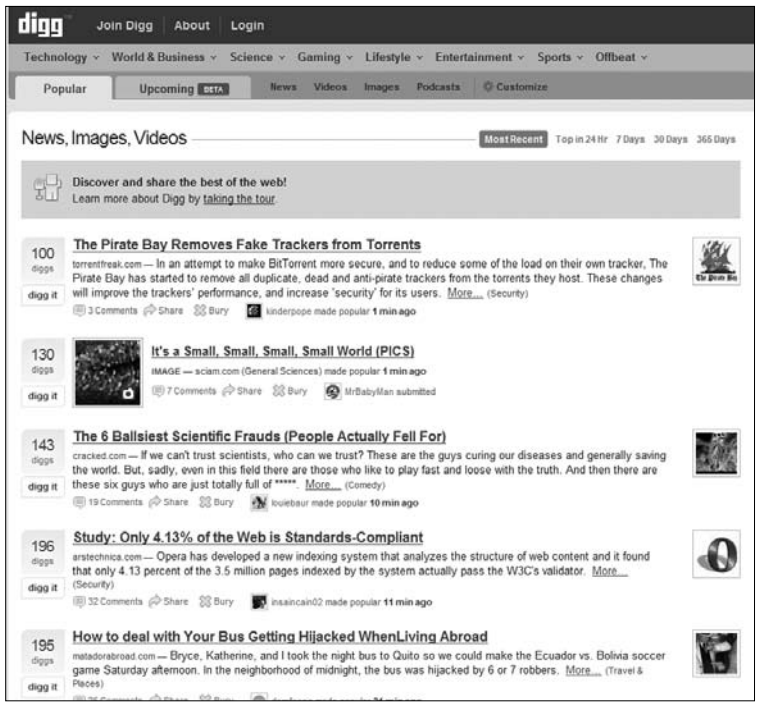


Figure 5.18: Digg

Even if we don't know the people, statistics can help us. It's almost a democracy: the more people are drawn somewhere, the more valuable the information from that place probably is. There are several mechanisms that support rating of webpages. The biggest examples are social bookmarking sites such as **StumbleUpon, Del.icio.us** and **Digg**. These sites enable the "social discovery" of anything of interest online. Digg.com is a website that makes it easy for people to share (review) information and news posts, while other people can vote and comment on those articles. It helps to sort through the multitude of blog posts and articles and bring up the most "valuable" content of the moment. It is also is a trend-sensitive mechanism: if something is "hot," it tends to push other things to the background.

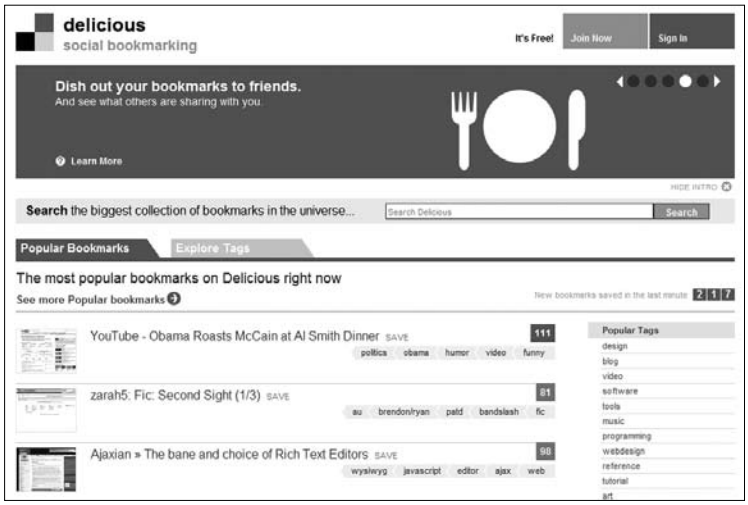


Figure 5.19: Del.icio.us is another social bookmarking site that provides mechanisms for rating and adding comments and tags to sites

There are many other sites[19] that use a similar kind of voting mechanism. **DZone** is a link-sharing community site for developers that uses "voting buttons," which have the power to move an article up or down a list.

Figure 5.20: A message on DZone.com with Vote up/Vote down buttons

The social bookmarking sites also help you find new friends: for example, StumbleUpon will analyze your preferences (which pages did you like, which not) and match these with the preferences of other "stumblers." The people that most closely match appear on your "friends" page where you can look at their profiles, read their blogs and perhaps get in touch. Be forewarned when trying out these tools: they can be addictive, because they will lead you to increasingly interesting internet resources.

For businesses, the most volatile examples are sites where the subject of evaluation is the companies and their services. If you use Amazon and eBay to do trade, the trust people will have in you, and thus the amount of business

19 http://www.blogmarketingtactics.com/social-bookmarking/social-bookmarking-top-links.html.

you will do, is directly proportional to the evaluation scores people give. On sites such as Angieslist or Yelp people evaluate companies, on TripAdvisor they evaluate holiday destinations, on JobVent they evaluate workplaces *etc*. For any kind of product, service or company a place can be found online where people can share their opinions.

Discovery

The so-called knowledge worker spends a considerable amount of time looking for documents and information by browsing the intranet, portals or searching the internet. The internet gave people access to billions, probably trillions, of articles, news items, songs, videos and other kind of information. With millions of people connected to it, many adding more information daily, we end up with more than we can handle. Just as an example, at YouTube 13 hours of video is uploaded every minute, which is roughly equivalent to recording 800 TV channels simultaneously. According to Technorati, in 2006 there were 1.5 million blog posts in a week, which means there were about 10 new blog posts every second.[20] And every one of these posts, videos, presentations and comments *could* have information that is relevant to your business, to your strategy or to your clients.

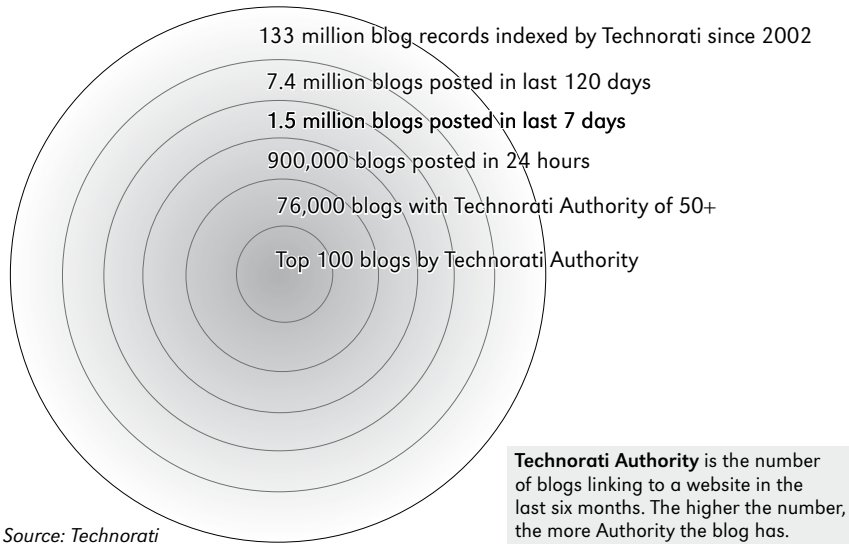


Figure 5.21: Blog Volume

20 http://www.nytimes.com/2008/08/16/technology/16tube.html?_r=1&8dp&oref=slogin.

According to a study from Basex[21], information overload is now costing businesses $900 billion per year in wasted productivity. The first, most basic solution available is a search engine such as Microsoft Enterprise Search or the "Googlebox." Nowadays we can install search solutions to find all sorts of internal and external information. Old email archives, reports, graphics, numbers: anything can be indexed and found, provided you know the right search terms. That is where the problem lies: a lot of information is not stored with the right metadata. Some search engines can be configured to deduct meta-information from the place where things are found. But there is another solution.

We have seen "rating" as a mechanism to make valuable information easier to find. Another, similar mechanism is "tagging." Where rating basically adds a *thumbs up* or *thumbs down* as meta-information, tags can convey much more information. They help catalog.

Tagging makes searching for information easier. Adding tags to documents, photos, videos or something else is classifying the content with simple one-word descriptions. Think about how stock photo companies have long been using this type of metadata in the keywords they use to catalog photos.

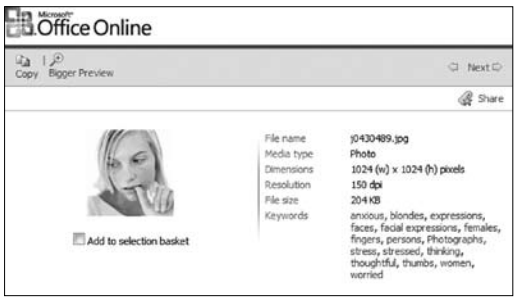


Figure 5.22: Tagging Photos

All kind of tools have the ability to add tags to content. Many file formats even embed the information in the files themselves. As an example, with Microsoft Word you can add tags to documents in the save dialog screen, and Windows Live Photo Gallery has a sophisticated mechanism to recognize faces, so you can add tags for contacts from your address book. Also, most blog engines have tagging capabilities.

21 http://www.micropersuasion.com/2008/12/calculate-the-c.html.

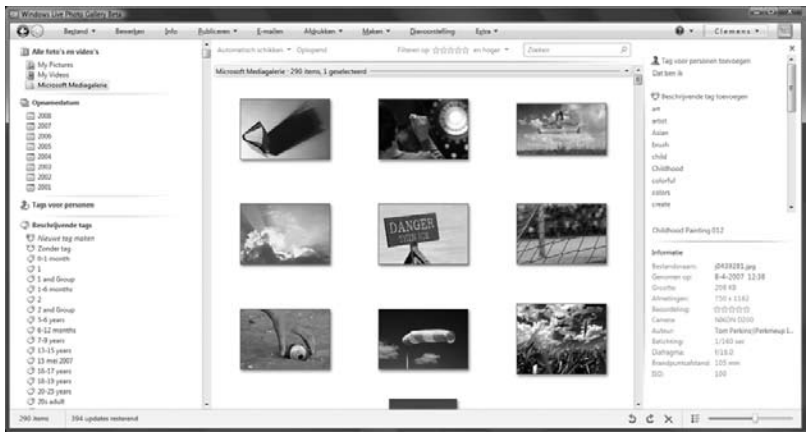


Figure 5.23: Windows Live Photo Gallery

Tagging is using human insight to classify things. For humans, tagging is simple and straightforward. It should become a natural part of everyday life for people: whenever we open or touch an item we would quickly add some tags to help us and others find it later. We could tag documents and pictures as well as people and events. If it is easy enough to do, this might be how we would achieve the holy grail of knowledge management. For computers it is still a great challenge to get the right grasp of concepts and context. Serious scientific effort is put into automating analysis and classification of items. Natural Language search and Artificial Intelligence are the topics of research. One of these efforts is **ALIPR**, which is a service that strives to automatically tag images and make them searchable.

Figure 5.24: ALIPR

Web 3.0

Understanding how to query the web is valuable and having relationship ties is even more important. Connections are helping us find information by adding meta-information and rating content. Meanwhile, there is already talk of Web 3.0, where the web of pages (Web 1.0) and the web of people (Web 2.0) are enhanced with even more logic and functionality that should make the web intelligent, turning it into "the semantic web" and forever solving our problems with searching the web. From Readwriteweb.com:

> *Web 3.0 offers detailed data exchange to every point on the Internet, a "machine in the middle," with three main characteristics:*
>
> 1. *Smart internetworking*
>   *The Internet itself will get smarter and become a gathering tool to execute relatively complex tasks and analyze collective online behavior.*
>
> 2. *Seamless applications*
>   *Web 3.0 theories suggest that all applications will fit together, a continuation of open standards where all applications will be able to communicate. APIs will read data from any platform and provide a single point of reference.*
>
> 3. *Distributed databases*
>   *Web 3.0 will need somewhere to store very complex and memory-intensive information. It will require ontologies to establish relationships between information sources, search millions of nodes, and scan billions of data records at once.*[22]

Notification

Staying up to date is an important part of working in a collaborative environment. You need to know what your peers are working on and, from a company point of view, you need to know what people are saying about your product and also what your competitors are doing. We don't want to be continuously searching for the things we need to know, and also want to be notified immediately when something important happens.

22 http://www.readwriteweb.com/archives/semantic_web_advertising.php.

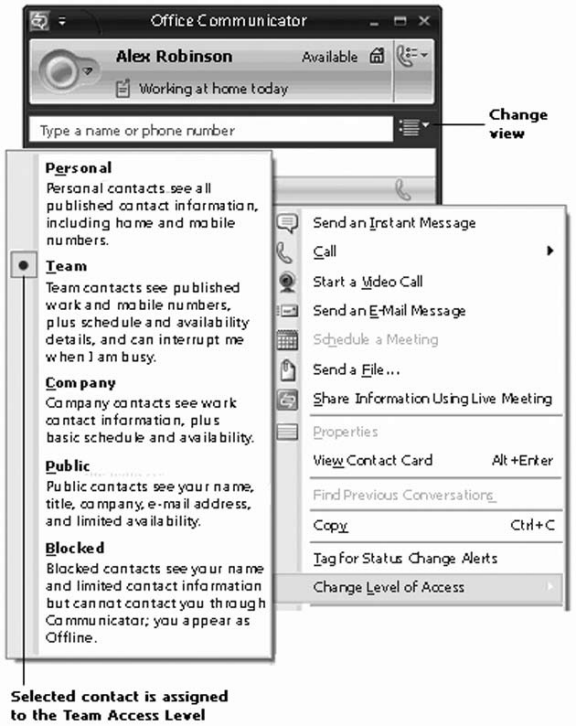


Figure 5.25: Office Communicator[23]

News Feeds

Web feeds are a bit like a subscription to a webpage. Using a standard message format called **RSS** (Really Simple Syndication) we can use a special reader to alert us whenever, for example, a webpage has changed, new information has been posted or new comments have been added.

> *RSS is a family of Web feed formats used to publish frequently updated works – such as blog entries, news headlines, audio, and video – in a standardized format. An RSS document (which is called a "feed," "web feed," or "channel") includes full or summarized text, plus metadata such as publishing dates and authorship. Web feeds benefit publishers by letting them syndicate content quickly and automatically.*[24]

Most collaborative systems like blogs, portals with document libraries such as SharePoint, wikis and microblogging sites offer RSS feed by subscription. Initially RSS was used for updates on web pages only, but now it is used to

23 http://office.microsoft.com/en-us/help/HA102064651033.aspx.
24 http://en.wikipedia.org/wiki/RSS_(file_format).

communicate notifications of all sorts of events. Even system administrators can use RSS to communicate about server status updates.

RSS feeds can be read and aggregated in different client software tools or on specialized websites. Microsoft Outlook and Internet Explorer both have a mechanism to subscribe to RSS feeds. The benefit of using a feed reader, or so-called feed aggregator or news reader, is that information from different places on the web can be read in one place: all notifications, all "news" is in one place (and no longer in our email inbox).

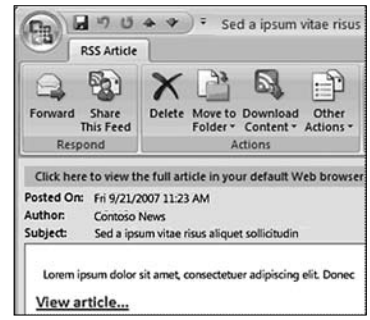


Figure 5.26: RSS Feeds

The web-based readers offer the same functionality as client software: they aggregate feeds and make them accessible from one place. They also offer some interesting extra functionality that takes advantage of its inherently cloud-like nature, such as sharing feeds with friends through social networks.

Figure 5.27: Bloglines

Notifications Are Interruptions?

Most of us are already used to notifications. When we receive an email a small balloon will pop up on the desktop to notify us that there is new email. Also, Windows itself has many kinds of notification messages: you've seen one when the connection to the network is lost. Other kinds of tools also have notification mechanisms. MSN Messenger can notify you when your friends

come online or when they want to talk to you. Twirl, a desktop version of Twitter, can notify you when someone whose twitter messages you want to see posts a new message (a *tweet*).

Some notifications are important, some not; it depends on what you are doing. Since many systems are sending notifications to you, and trying to get your attention, you might end up paralyzed by the information overload. It is easy to subscribe to lots of valuable sites and blogs, and it is important to stay up to date about important people, information, companies, and projects, but other feeds might have lower priority.

The generation of digital natives seems to be able to cope better with the constant interruption, but the resulting *continuous partial attention* has an enormous effect on people. Linda Stone has written about this: "Like so many things, in small doses, continuous partial attention can be a very functional behavior. However, in large doses, it contributes to a stressful lifestyle, to operating in crisis management mode, and to a compromised ability to reflect, to make decisions, and to think creatively. In a 24/7, always-on world, continuous partial attention used as our dominant attention mode contributes to a feeling of overwhelm, over-stimulation and to a sense of being unfulfilled. We are so accessible, we're inaccessible. The latest, greatest powerful technologies have contributed to our feeling increasingly powerless."[25]

A filter mechanism is a must. You need some filtering to be able to distinguish between company related, project related, personal or system related notifications and to stay focused on your job. Managing your interruptions is important if you want to ensure that you actually get your work done. Some notifications need to pop up the moment they arrive ("your project has a new deadline, and it is tomorrow"). Some notifications you need to see when you have the time for them ("we will have a new team member"). Other notifications may be left for you to read on your phone in the moments spent waiting for the bus ("the new company slogan is…").

To manage interruptions, it helps to get accustomed to prioritizing according to groups. Think of how a cell phone will allow you to create different ringtones alerting you to calls from different groups or individuals. Microsoft

25 http://continuouspartialattention.jot.com/WikiHome (no longer available).

Office Communicator has a similar notification-filtering mechanism, called "Interruption Management":

> *Interruption Management: You can assign a Team access level to other contacts to create a preferential list of people who are allowed to communicate with you when your Presence status is set to Do Not Disturb. In addition, you can manually set your Presence status to Do Not Disturb from the Presence menu or from incoming IM, Call, or Conference alerts. When your Presence state is set to Do Not Disturb, you see, by default, only urgent alerts from Team members.*

Integrating All into a Personal Mix

There are now so many information channels that people are looking for ways to connect and integrate them. One way is to use tagging with social networks to prioritize blog notifications. Interact with a group of colleagues and receive updates when someone posts a message to your forum.

There are many ways to integrate, from complete automated processes to a simple portal interface that displays different components. A special type of integration is the *mashup*.

Mashup Integration
"Mashup" is a term used for a solution that is created by combining and configuring multiple underlying services. It is a flexible way to easily create solutions that fit the individual need. When we want to optimize collaboration between organizations, or we find recurring patterns in our collaboration (*e.g.* we have a certain meeting every week for which we need to book a room, order meals and organize transport), mashups can provide support at a suitable scale for this collaboration.

Wikipedia defines mashup as a "web application hybrid," which combines data from more than one source into a single integrated tool. The most common examples are the combinations of geographic visualization with other information, like the visualization of Outlook contacts within Live Maps, or Google Maps with location information of real-estate data. The combination of the two different services makes a new application with more functionality than the different parts provide.

One of the main advantages of mashups is they are "self-servicing": employees, businesses and consumers can make their own mashup, gather services they use and combine them however they want in whatever way works best for them. They are the true tools of a "prosumer."

Mashups can be created manually using the interfaces available from the different services. But there are also web-based mashup editors. Microsoft **Popfly** and Yahoo! **Pipes** are examples of tools where you can drag, drop and link different services to each other, thereby creating your own mashup in a matter of minutes, without the need for (much) programming. The underlying technology of web services provides standard interfaces that allow easy, though sometimes still fairly technical, combination.

Figure 5.28: Enterprise Mashups in the Web 2.0 Era[26]

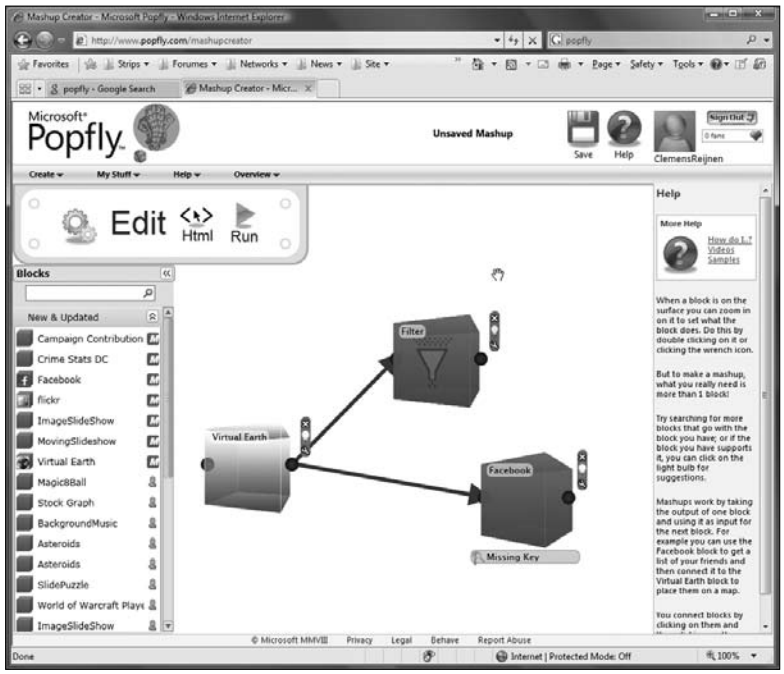


Figure 5.29: Microsoft Popfly offers a drag-and-drop integration solution to create your own mashup in minutes

26 http://blogs.zdnet.com/Hinchcliffe/?p=35.

A much simpler way to integrate is to link different services together without many steps or tools but by simply using a ready-made tool that integrates a number of services. There are specific tools available that connect multiple media and feeds into one. And the tools themselves have started to knit together, as well. Most social networks have RSS feeds available, and social networks have integrated "status" information or can connect to Twitter. Facebook, for example, has the "where are you what are you doing" box in the upper right. Yahoo! **Fire Eagle** takes the concept of presence awareness even further with various tools, including the ability to share your geographic (GPS) location with friends.

Figure 5.30: Yahoo! Fire Eagle

Another simple example of integration is **Xobni** (inbox spelled backwards). It shows what is possible when you combine online communities with an email client. Xobni is an add-in for Microsoft Outlook. It automatically shows information about your contacts and how many emails you have sent and received. It also connects with LinkedIn to show a selected contact's public photo and contacts that are related based on your email traffic. It is a simple tool that can help prioritize email and enhance the social structure of collaboration.

Perhaps the ultimate combination of news and social networks is **FriendFeed**: it allows you to combine all your activities online into one location. This information in turn is available to your network. In this way you can stay current and keep others current. FriendFeed can integrate your blogposts, Twitter tweets, YouTube videos, slideshare presentations and any other online activity. It also has the option to use "rooms" for filtering information.

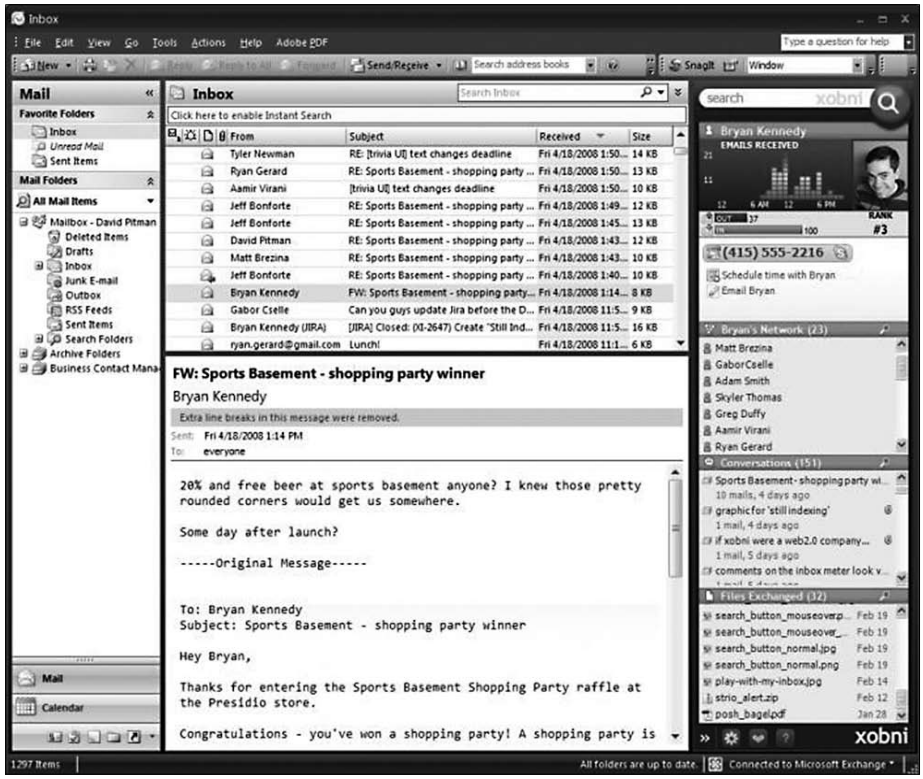


Figure 5.31: Xobni

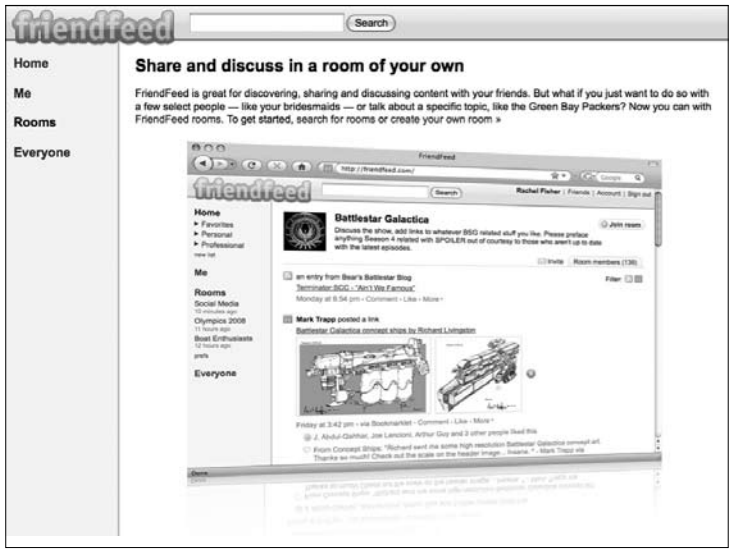


Figure 5.32: FriendFeed

Finally! The End of Email?

A revealing statement that hints at what a new way of work could look like was made by a student talking to her older brother: "I only use email to get hold of older people, like you." It might seem impossible, but try to imagine a workplace where the first thing in the morning is not opening the email. If we were to use all these other options we have available, our email traffic could greatly diminish:

- People: for information about people, informal notes on what they are doing, profile information, and notes on their friends and their activities we go to a personal profile page (their FriendFeed[27]).
- Deliverables (documents, events, corporate decisions): for working on items we want to be working on, we visit an online place where the deliverable is central, which may be a project, document, event or any other lasting asset.
- Questions and answers: we post them to a forum that is visited by our colleagues and friends. An archive function allows us to look up questions that were asked before.
- Updates, notifications: these are grouped in our newsreader. We prioritize the notifications and can decide to take action on some and ignore others.
- Checking if someone can be reached, quick interactions: we use instant messenger for quick questions or chitchat.
- Task assignment and progress reporting is better done using an online project management tool.
- *Etc.*

If we think this through, very little remains for which email is really the best and only solution. And once other solutions have the majority of the traffic, email will quickly die down: if everybody is posting messages on my Facebook "wall," that's where I'll go for messages and I'll start to forget my email. And although information can be spread over many sites, this does not mean we have to surf to all these locations: personal portals and dashboards will integrate all of them into one, enhanced by mashups and other integration tools on the desktop. Even your email client can be the one that integrates them all.

27 FriendFeed.com.

5.4 Collaboration – Software Matrix

Every kind of collaboration needs specific tools. What kinds of collaborations are there? In the previous paragraphs we discussed several types of collaboration tooling and their capabilities – what they are and what you use them for. But when to use which is a more difficult question. People use email for all kinds of collaborations, but in what kind of situation might you prefer to use blogs or wikis? To answer this you have to separate collaboration into several parts.

Up until recently we still used the telephone as our primary real-time, synchronous communication tool. When we have to work in groups, we use it for conference calls. Not something Bell thought of when he invented the telephone. There is a key difference between synchronous and asynchronous communication, just as there were key differences between the early telegraph and the telephone.

Software that facilitates communication and collaboration is available in many forms, from mail systems, where communication is provisioned in an indirect way, to interactive games where people play in real-time against each other. The time-place matrix[28] pictures this. This matrix has two dimensions in which collaboration differ: place and time. People may sometimes work on the same project at the same time in the same place – for example, in the overly used on-site meetings. People may also work on the same project in different places at different times – for example, by outsourcing to India, where there are different time zones.

In practice, email may be placed in the different time / different place quadrant and instant messaging will be more directed to the same time / different place quadrant.

Each quadrant represents a specific need that must be met by collaboration tools. When communicating in the different time / different place quadrant there is a need for a message box, such as an inbox, where we will receive our messages. This is different when we want same-time communication. In that case, there is no need for an inbox, but rather a notification mechanism alerting the receiver that someone wants to communicate and alerting the

28 Johansen, R., 1988. "Current user approaches to groupware." In R. Johansen (ed.), *Groupware: Computer support for business teams*. Free Press, New York, 1988.

sender as to whether the person he wants to contact is available, neither of which is necessary in a different-time situation.

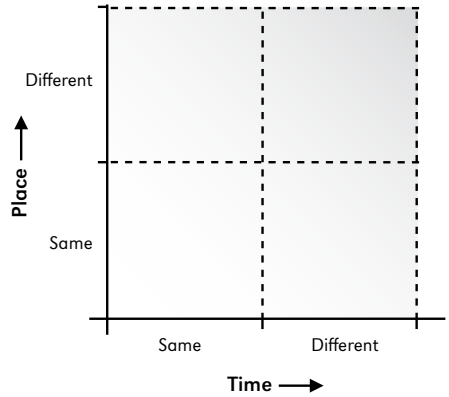


Figure 5.33: Time-Place Matrix

Besides the capabilities the tools must have, the people who want to communicate must understand what kind of communication is to take place. Sending an urgent message via a tool that supports a different time / different place mechanism isn't the best option. This is something you see happening often: people sending an urgent email expecting that the receiver will read it in real-time, not knowing that he just did the management course "How to overcome email overload" where they told him to open email only twice a day.

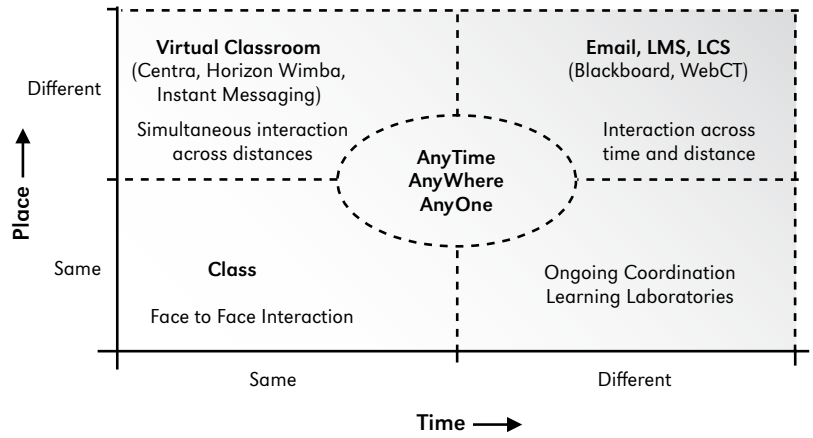


Figure 5.34: Time-Place Matrix Applied on eLearning[29]

29 http://projects.coe.uga.edu/epltt/index.php?title=Computer_Mediated_Instruction.

Many-to-Many, Many-to-One, One-to-Many, One-to-One

Another dimension to explore is the one of "how many people are involved." Collaboration can take place with just the interaction between two people or with larger groups. Different ways to interact ask for different tools. We can draw a matrix and use it to situate the different collaborative tools. Depending on the intended use, different tools will be better suited in certain situations than others. As you can see at a glance, most tools are well suited for asynchronous collaboration between many people (in this context, many being "more than two").

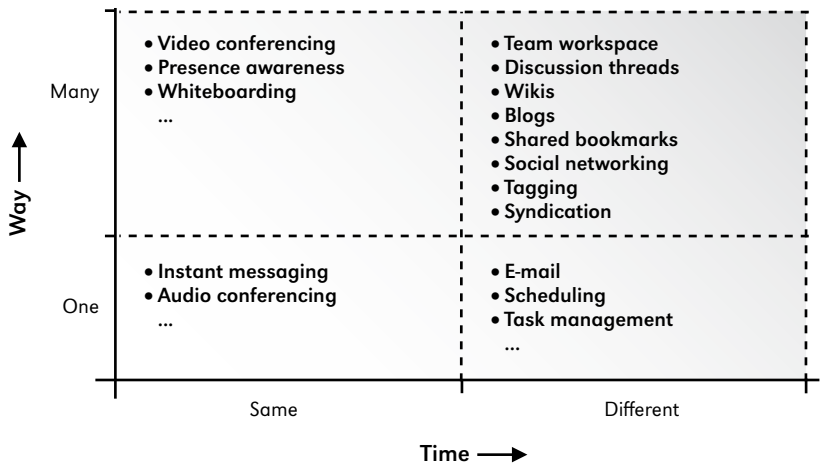


Figure 5.35: Collaboration tools mapped on the Time-Way Matrix. The number of people working together is recorded on the Way axis

Knowing and understanding in what quadrant your communication and collaboration takes place helps to choose the right platform. Each tool has its pros and cons in any specific quadrant, being better suited for one than another. There is no platform available that provides seamless communication in every quadrant. Even email as a conversation tool is really only ideally suited for a one-to-one situation where we have to keep in mind that it is asynchronous: the receiver might first read your mail three days from now.

5.5 Conclusion

As we have seen, there are great tools available. "Out there" on the wide open internet they have a following of their own, and nothing is keeping us from either joining these tools on the internet or (if we have to) implementing our own "internal" copy. A corporate "Twitter" might relieve email overload. A corporate Facebook could improve the social cohesion within the company.

While email will be long-lived in the business world, expect to learn new tools and start working in the different ways enabled by these tools. And if we really want to enter the conversation, we have to be "out there" in the real world. Once the groundwork is in place, we can select the right tools or leave people to find the right tools themselves.

The provisioning model for these tools and services will be a hybrid: some things will be internal to the company, while others will be in the cloud. What this looks like, what the impact is and how we can make the right decisions is the topic of the next chapters. We will discuss Software + Services and get more specific on the topic of Social Computing for business.

6 Groundwork for a New Organization

The ways that people work together shift over time, which can affect your culture of collaboration. More important, the introduction of collaboration technologies can also change the culture of collaboration. If handled properly, the tools and the culture will co-evolve.

– Dennis Kennedy[1]

6.1 Introduction

Collaboration is essential to business and many tools are available to support the various capabilities that make up collaboration. But just installing the tools, or using a tool from the cloud, does not make you an "Enterprise 2.0" overnight. The "build it and they will come" adage does not apply. This chapter will go into the groundwork, the other elements that need to be in place before collaboration can be successful. It will address the "soft" part of collaboration, addressing elements such as trust, culture and reward.

Empty SharePoint, Messy Wikis – a Disaster Scenario

Unfortunately, the scenario described below is all too common. It describes how incorrect adoption of tools can hinder collaboration before improving it. It is the case of an organization going about the implementation of collaborative tools in the same way they select and implement any other kind of software tool.

Imagine a company where knowledge workers are becoming less and less productive because they spend more and more time searching for the right information in the vast directory structure of their network. It is hard to document repeatable tasks and knowledge leaves the company whenever an employee finds another job. The company sets out to solve these productivity and knowledge management problems and forms a team of IT and (some) business people to find a solution.

1 denniskennedy.com/blog.

A top-down, centralized decision is made, and the company decides to install SharePoint as their primary collaboration platform. After the decision is made and the software is acquired, the company starts with the necessary investment in infrastructure and begins training operations how to install, organize and manage the collaboration platform. When everything is in place, the infrastructure is working, backup procedures are in place, guidelines are written and the operations team knows what to do, the transition to support is done, and the new collaboration can start. Most likely the initiative now has a fancy name and perhaps a slogan.

Senior management then sends a company-wide email announcing, with pride and joy, that there is a collaborative platform available for anyone to use. There are private sites for every employee, wikis, blogs, discussion forums and portals. Management expects new forms of collaboration to start soon, and is happily calling their organization 2.0-ready. They surely have solved all the productivity and knowledge sharing problems.

The employees receive the announcement emails and are pressed to "use it every day." Curious and perhaps a little excited, some – not all – of the employees visit the enterprise portal and look around, fill in their personal details and perhaps upload a profile picture.

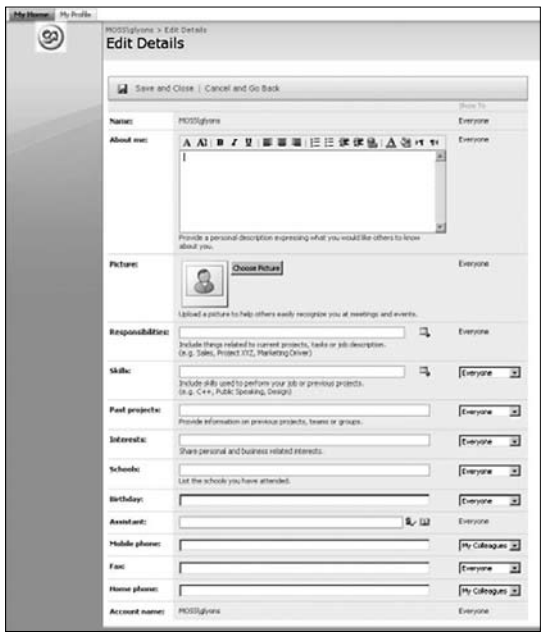


Figure 6.1: SharePoint Personal Details Page

Looking further, the employees discover that there isn't any real information (yet): the wiki pages are empty, blog posts are rare and the forums don't have any questions. After a quick look around, the employees go back to their work, thinking, "I will get back later this week when there will be more information." Meanwhile most of the employees still use email as their primary collaboration tool, not knowing about or not comfortable with the collaborative aspects of the newly introduced portal.

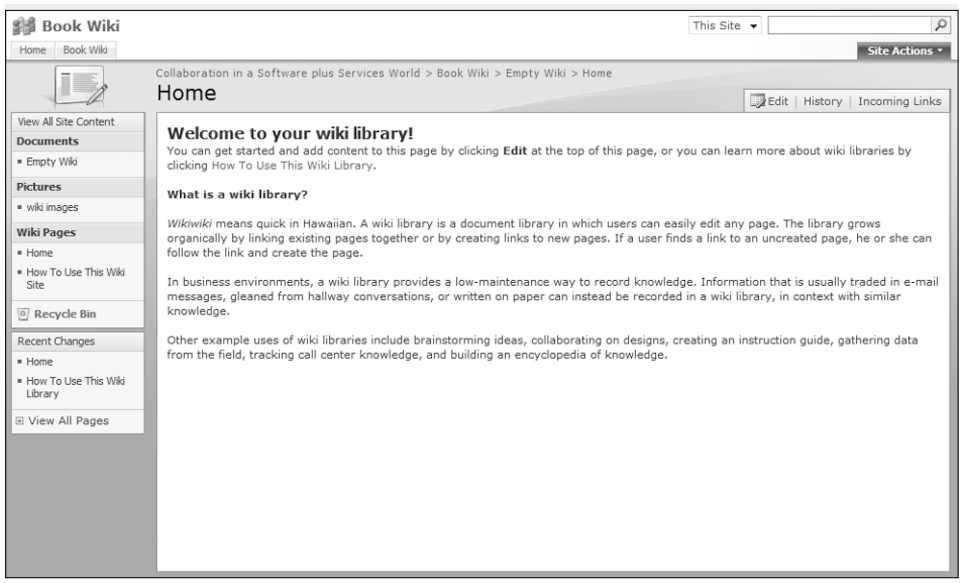


Figure 6.2: Empty Wiki

After a slow start, some people will have found their way to the portal. Most likely these are the newer generation or the people that had specific needs or were tired of using file-shares to transfer large files. With some people using the new platform and most people still using email, they will have the worst of both worlds: for example, there will still be uncertainty as to which is the latest version of any document. People will be looking in several places to find the current status, and it's unclear. If people from different departments were to try to create a proposal together, a lot of effort would go into coordination and integration of the different pieces of the proposal. The wiki pages, intended to be changed and updated by all to provide a common knowledge base, are empty or contain temporary notes, scribbles or information copied from elsewhere. The team portals and project portals have some structure but most elements are empty or outdated. The collaborative space looks like an abandoned town with empty houses.

It is clear that this scenario is not the scenario management had in mind when introducing the new platform. It is also clear that introducing a new platform in itself will not change the way people work. Of course, in real life, many organizations realize that the human aspect of any implementation is important and doubly so with collaborative technologies. Not addressing the use beforehand seems like a beginner's mistake. So what do we need to think about in order to avert disaster scenarios?

Expecting Miracles?

Before we go any further, we need to examine the expectations. Especially we need to compare "internet scale" to "corporate scale." If we see successful sites online with a thriving online community, where people are adding and improving information every day (*e.g. Wikipedia*) and uploading many interesting documents continuously (*e.g.* Slideshare) we cannot help but want this for our own company, too. The problem is that you probably do not have enough employees to achieve the same traffic to an internal site. Only 1% of all internet users in your country is still a multiple of 100% of all of your employees. And since some initiatives need some critical mass to survive, it pays to look for alternatives. It might just be possible to become part of the external community instead of recreating one "indoors."

Also, don't be disappointed when "only" 10% of your workforce joins an online community: the numbers are still much higher than in the general public!

6.2 What You Need to Succeed

Creating new modes of collaboration supported by technology can only be done by addressing the human aspect. More specifically, we need to address some of the worries and obstacles people encounter when collaborating using technology. The three most important concerns are:

- **Trust**. Trust is a condition for social interaction. People will only work with people, companies, tools and information they know they can trust. Before we can expect collaboration to take off online, there must be a way for people to get this "trust." And a topic closely associated with trust when it refers to people is **Identity.**
- **Collaborative culture**. If one individual is the greatest collaborator in the world, he or she is probably not getting anywhere. Only when all people involved are part of the same collaborative culture will new levels of creativity and productivity be reached. A collaborative culture consists of many things, including:

  - Collaborative leadership;
  - Shared goals;
  - Shared model of the truth; and
  - Rules or norms.
- **Reward**. Changing the way people work takes effort, so it must be clear for the parties involved what they will gain, at a personal level, from collaborating in a new way. Surprisingly, a "reward" for successful collaboration is most often of a non-financial nature.

Figure 6.3: A graphic used in a blog discussion by Sam Lawrence of Jive software to explore how, in his view, collaboration is composed of coCreation, coOperation, coLearning, coOrdination, coRespect and coSolving, with the individual "me" back on top[2]

6.3 A Model for Trust

Who can you trust these days? And when you expect someone to collaborate with you, how can you prove they can trust you and the information you provide? And if I trust you, and you trust your friend Joe, can I also automatically trust Joe? Does Joe make good on his promises to me as he does on his promises to you?

2 http://gobigalways.com/anatomy-of-the-enterprise-octopus/.

Trust, and its closely related cousin *transparency*, come to mind when talking about the internet and technology. Or, as a great quote goes, "Trust is the business word for love." For some companies, "trust" is what builds the brand. Larry Page, co-founder of Google, said this in discussing Google:

> *One of the big assets we have is a big consumer brand. It is very clear that our users are everybody and that is who we are answerable to. We need you all to trust us or else we have no business.* (Sunday Times)[3]

Why would Google have no business if we, the consumers, didn't trust them? It seems obvious that if we didn't trust the search results, we wouldn't use Google. It is the same with other aspects of collaboration: if we don't trust the people, tools or information, we will not use them. In some instances it's not even that we don't trust the information, but that we have no way of knowing *if* we can trust the information.

Someone writing on *Wikipedia* suggests, "Trust is a relationship of reliance. A trusted party is presumed to seek to fulfill policies, ethical codes, law and their previous promises."[4] If we are confident that the promise will be fulfilled, we will trust. If we see a recurring pattern of promises that are being fulfilled, our trust will increase. If we see even one broken promise, the trust can evaporate instantly.

Trusting People

Trust is not a hard fact or a number we can quantify like a credit rating. There are no universally accepted certificates of trustworthiness. We are most familiar with the concept of trusting people: our family and friends gain a reputation based on our prior experiences with them and the social structure to which they belong. It works the same way within collaborative initiatives: the more we know of someone, and the more we know of the organizational and social structure they are part of, the better able we are to determine whether we can trust that person or not. This is also where online social networks provide value.

3 http://business.timesonline.co.uk/tol/business/industry_sectors/media/article3997912.ece?token=null&offset=12&page=2.

4 http://en.wikipedia.org/wiki/Trust_%28social_sciences%29.

In collaboration across geographical or organizational boundaries, trust gets special attention: if I have never seen the person I am working with, it is harder to build trust. If we cannot look someone in the eye, trust doesn't come automatically. This is one reason why the collaborative tools that focus on supporting online conferencing are including video-feeds as much as possible.

In 2007, the Economist Intelligence Unit published a paper (sponsored by Cisco) with the title "Collaboration: Transforming the Way Business Works":

> *The paper reported that there is a widespread imperative to adopt collaborative business models and noted that trust is a critical building block in collaboration. However, those seemingly simple conclusions can quickly become complicated in today's business world, where the forces of globalization and the knowledge economy are converging with technology and demography.*[5]

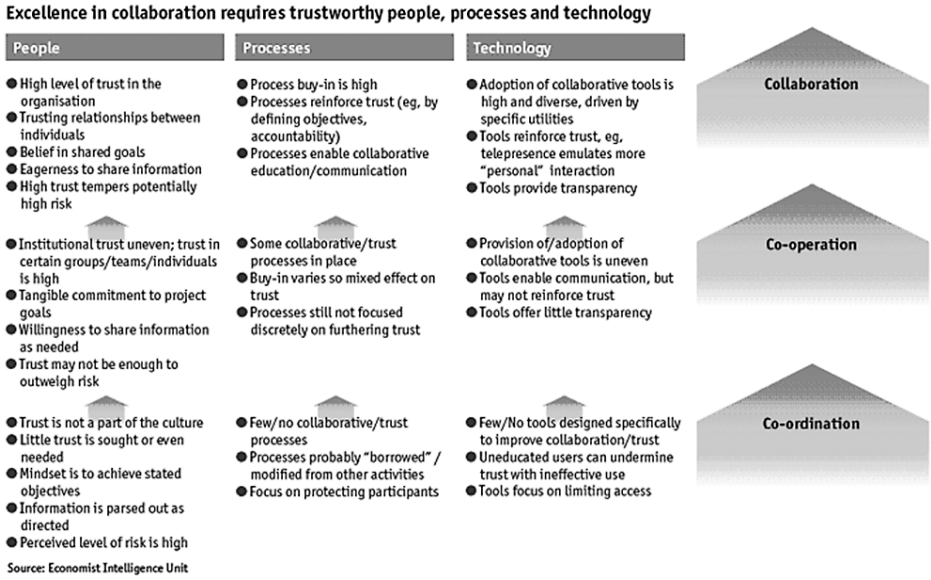


Figure 6.4: Requirements for Excellence in Collaboration

In this study the researchers found different levels of intensity with which people are working together. It starts from a situation where there is no trust

5 See http:// graphics.eiu.com/upload/cisco_trust.pdf, where the paper is discussed in the preface to the Economist Intelligence Unit's more recent paper, "The Role of Trust in Business Collaboration."

at all and people don't really collaborate but processes need to be explicitly coordinated. As levels of trust increase, different methods of collaboration become viable, and move through cooperation up to true collaboration where people are working together to achieve a shared goal.

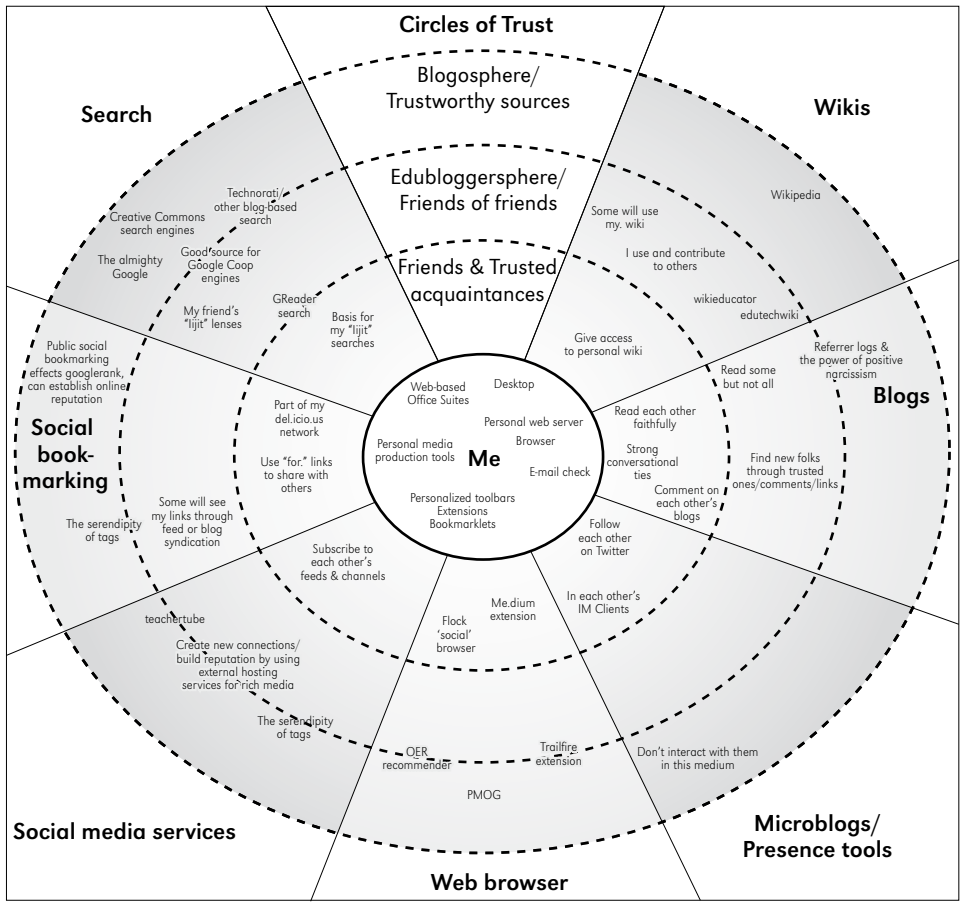


Figure 6.5: Trust levels and several collaborative tools.[6] This diagram shows how different tools (or media) can be used with different levels of trust: closer to me means greater trust. It is also a great illustration of Marshall McLuhan's statement that "Technology is an extension of the human body"[7]

6 http://www.flickr.com/photos/nessman/2590572476/.

7 *Global Village*, 1953.

Identity

In order to trust someone, I must be able to identify that person. To delegate trust, I must be able to accept the reference of someone I recognize. To enable collaboration, you need a way to identify people. Especially when we are using cloud computing to offer collaborative solutions, this is an important challenge. Microsoft was one of the vendors offering Microsoft Passport as a way to uniformly identify people online, but due to other trust issues, this didn't gain the wide acceptance expected or hoped for. By now, the focus is on open identity standards (OpenID) that are being implemented by a range of vendors, among which Microsoft but also Facebook and others. Here we also see the crossover from trusting people (who is working with me) to trusting the technology (can the technology prove to me who I'm working with).

When an organization is looking to initiate collaboration between multiple parties, it must first find a way to identify the different parties in such a way that they can start to build trust.

Trust and Technology

Whenever we are using technology to communicate and collaborate, the platform itself becomes a factor in the collaboration. If our email is unreliable, the process will break down. If the site we are using to exchange information is not secure, we will not post our materials there. If people can take on other identities, I am less likely to build a trust relationship based on someone's "avatar" (their online representation).

Technology itself can also get in the way of trust: for example, this popup message below will appear when a web browser needs to update itself to show a certain webpage. For a common business-user, this might look puzzling: the browser asks if I trust the website, but it does not tell me why I should trust that site or how I can find out if a site is trustworthy. Users must figure out by themselves, without any additional information, whether to trust this site.

Figure 6.6: Trusting a Website

From an organizational perspective, this means the end users must become web-savvy: they must develop a sense of security online. What sites can I trust, what are normal procedures, how do I recognize a secure site, *etc*. (Which, when you think about it, is not all that different from what banks do to train their customers when they are banking online.)

Service-Level Agreements

Trust depends on how much someone is able to deliver as promised, so describing the promises makes sense. In the Software as a Service space, this means describing the service-level agreement. In these cases we replace blind " trust" by an actual contract (or at least a formal expectation).

Most services that are generically available online, which you can use without needing to sign a contract, have a very simple service-level agreement: if the service is up, it's up; if the service is down, it's down. There are very few guarantees, and if you want better guarantees you most likely will have to pay for them. What happens when your Gmail goes down for a day? Or what if your website disappears and there is no backup? What do you do if the free website statistics engine you are using messes up the statistics, rendering a year's worth of data useless? Who can you call, and how fast will they respond?

There are many different approaches to building trust. Salesforce.com, the CRM as a service provider, offers insight in their uptime to gain trust from their customers (trust through transparency). When we as consumers can see what the uptime is of their services, at least we know what we are buying. Amazon has an approach where they simply offer money back in case their AWS cloud services fail. It remains to be seen whether you are adequately compensated for your loss if the compensation for a day lost in sales is just the rebate of one day's fee for hosting the services, but at least it is an explicit SLA.

Figure 6.7: Trustsaas.com is providing real-time insight into the status of several services available online[8]

amazon web services SERVICE HEALTH DASHBOARD

Amazon Web Services » Service Health Dashboard

Current Status

Amazon Web Services publishes our most up-to-the-minute information on service availability in the table below. Check back here any time to get current status information, or subscribe to an RSS feed to be notified of interruptions to each individual service. If you are experiencing a real-time, operational issue with one of our services that is not described below, please inform us by clicking on the "Report an Issue" link to submit a service issue report.

Jul 10, 2008 Report an Issue

Current Status	Details	RSS
Amazon Elastic Compute Cloud (API)	Service is operating normally.	
Amazon Elastic Compute Cloud (Instances)	Service is operating normally.	
Amazon Flexible Payments Service	Service is operating normally.	
Amazon Mechanical Turk (Requester)	Service is operating normally.	
Amazon Mechanical Turk (Worker)	Service is operating normally.	
Amazon SimpleDB	Service is operating normally.	
Amazon Simple Storage Service (EU)	Service is operating normally.	
Amazon Simple Storage Service (US)	Service is operating normally.	
Amazon Simple Queue Service	Service is operating normally.	

Figure 6.8: AWS Service Health Dashboard

8 http://trustsaas.com/.

Downtime, or more explicitly, not having access to online services, depends upon the weakest link. Especially when combining services from multiple locations and multiple service providers, the combination may soon prove to be too unreliable to use for important business processes. On the other hand, in-house technology is not without its downtime either, and SaaS providers generally have better uptime and response times than the internal IT systems. For the end user, only the reliability of the whole solution matters, as illustrated by fragments of a discussion on LifeHacker.com on the topic "Do You Trust the Cloud?":

> *I don't trust the cloud anymore than I trust my hard disk. In fact, I've had more trouble with the cloud than I have had with hard disks – from site outages like yesterday to cable outages to a beehive in my cable box that killed my cable with honey! Ubiquitous sync is the answer. The info should reside on PC, Smartphone and Net otherwise it is only partially usable.*
> *Are we talking downtime, data loss, security, privacy or what? I trust in Google, maybe because they haven't bitten me yet. But I'll change my tune in a second if they lose all my data or lock my account without reason.*[9]

And then there is the reliability of the service provider itself, the one hosting the technology. Especially in these financially turbulent times, the choice of service provider warrants some extra attention. You don't want to choose a service provider that might go out of business anytime soon. Especially among the providers whose services are paid for by advertising, this unpredictability leads consumers to be extra cautious, to the advantage of well-established vendors like Microsoft. And one smart move to limit risk is always to back up your data elsewhere, just in case.

Trusting Information

We can trust the people we are collaborating with, and we can trust the technology and the provider of the technology, but can we be sure that a given document in our online portal is indeed the latest report we need? If you have ever used an online collaborative solution, you have probably come across documents where you weren't sure whether they were drafts or final versions, or whether the information in the document was really true. Or you

9 http://lifehacker.com/400268/do-you-trust-the-cloud.

may have seen a poll on the intranet, but you are not sure who participated and what the value of the poll really is. People and companies that use collaborative tools need to make a conscious effort to create information, to turn data into information, to add value to statistics, *etc*.

A great example is *Wikipedia*: how can you trust the information somebody has written about a topic? People who love *Wikipedia* will say that "the crowd" will make sure the content is correct. Yet anyone can edit a wiki, so who can say that vendors or competitors are not polluting *Wikipedia* with marketing statements instead of real information? Or what about the topics that are most heavily debated? A good sample of pages with a dubious history can be found in *Wikipedia*'s own very long list of "Most vandalized pages."[10]

However, the quality of entries is uneven; sometimes entries are even factually incorrect. *Wikipedia* founder Jimmy Wales admits on the website that "on any given day, [the quality of] any entry might be up or down."[11]

Truth be told, *Wikipedia* has cleaned up drastically in recent years by putting more emphasis on references, removing original thought and checking if, for example, politicians or companies are editing their own information in their favor.

The way in which Web 2.0 technologies can help make information more reliable and trustworthy is by combining the trust in people, platform and information.

Trust Needs a Network

On Amazon.com we can see product evaluations. On eBay.com we can rate the seller AND the buyer. Reputations here are extremely valuable. On LinkedIn people are encouraged to recommend the people they think stand out. Many other sites use the opinions and evaluations of "the crowd" to help customers make decisions, by helping to make sense out of the multitude of options. They build trust by creating the right expectations.

10 http://en.wikipedia.org/wiki/Wikipedia:Most_vandalized_pages.
11 http://www.mg.co.za/article/2005-11-07-can-you-trust-wikipedia.

If we want to have people, technology and data we can trust, they must be connected and part of the same network.

Interesting developments in the "collaborative sensemaking" area are solutions such as IBM's experiment with **Many Eyes**[12] where visitors were invited to add opinions and ideas to datasets and visualizations. In a corporate world, this could be applied to sharing important information with all people inside (and outside?) the company to try to make sense of the data, predict possible new developments and come up with new ideas to respond to the trends in the market.

Another interesting experiment online in the same space is **Debategraph**[13] that facilitates online debates by structuring the arguments of both sides. One can imagine what this could have done for many financial institutions had it been possible to use these kinds of tools earlier.

Figure 6.9: Customer Ratings

6.4 Collaborative Culture

There definitely is a cultural aspect to collaboration. For one thing, the perception people have of the possibilities for (and consequences of) collaborating will determine their actions. Or as one employee once said, "I'm trying to develop an area of expertise that makes me stand out. If I shared that with you, you'd get the credit, not me…. It's really a cut-throat environment."

12 http://manyeyes.alphaworks.ibm.com/manyeyes/.
13 http://www.debategraph.org/.

The quote above was collected by Wanda J. Orlikowski in 1992 while doing research into the adoption of Lotus Notes in an organization. After this research, Orlikowski concluded:

> *...in competitive and individualistic organizational cultures – where there are few incentives or norms for cooperating or sharing expertise – groupware on its own is unlikely to engender collaboration. Such products will be interpreted as counter-cultural, and to the extent that they are used they will promote individual not group aims.*[14]

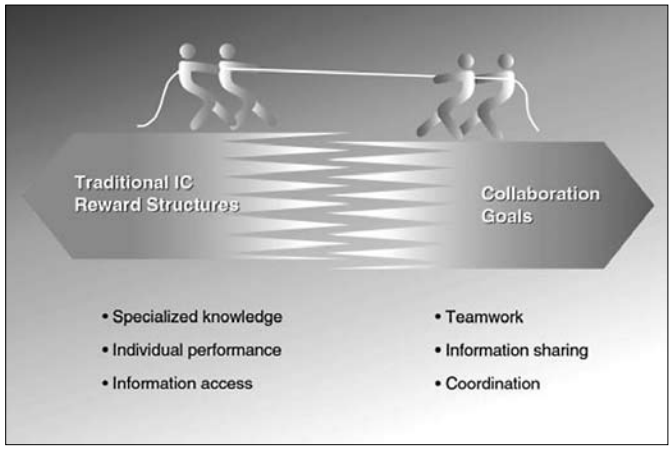


Figure 6.10: Tug of War[15]

The organization Orlikowski followed in 1992 was one where the CIO initiated the implementation of Lotus Notes. Because this implementation was technology-driven, employees who needed to work with the new tools were not involved. Actually they simply arrived at work one new day and were surprised to find new software installed on their desktops, not knowing what to do with it. This is a scenario very similar to the disaster scenario mentioned above.

No More Taylor?

Previous innovations that aimed to improve productivity and performance were often based on the ideas of Frederic Winslow Taylor. He stated,

14 http://ccs.mit.edu/papers/CCSWP134.html.
15 http://collaboration.mitre.org/prail/IC_Collaboration_Baseline_Study_Final_Report/3_0.htm.

It is only through enforced standardization of methods, enforced adoption of the best implements and working conditions, and enforced cooperation that this faster work can be assured. And the duty of enforcing the adoption of standards and enforcing this cooperation rests with management alone.[16]

Figure 6.11: Taylorism in Action

Taylor's scientific management consisted of four principles:

- Replace rule-of-thumb work methods with methods based on a scientific study of the tasks.
- Scientifically select, train, and develop each employee rather than passively leaving them to train themselves.
- Provide "Detailed instruction and supervision of each worker in the performance of that worker's discrete task" (Montgomery 1997: 250).
- Divide work nearly equally between managers and workers, so that the managers apply scientific management principles to planning the work and the workers actually perform the tasks.

Taylor used examples from manufacturing to create a standard approach to all sorts of work. Divide processes into smaller chunks, optimize each chunk, and the result will be improved performance. Repeatability, quality control and a fixed set of tasks and actions are elements of a Taylor work method. In Chapter 3, we described how Taylor puts a lot of responsibility for innovation and coordination with management, and takes these responsibilities away from the "ordinary worker" with many counter-productive side effects.

16 Taylor, *Principles of Scientific Management*, cited by Montgomery 1989:229.

Collaborative Leadership

In recent years, Taylor has lost some of his attraction. We have seen other innovations that allowed more flexibility and gave workers more responsibility and room for initiative. In a collaborative environment, top-down management-driven decision making does not always produce the best results. Yet old habits are hard to break. In the example of the research done by Orlikowski in 1992, we saw that people started to use the new groupware primarily for personal productivity, not for sharing and working together.

Businesses and people have a backpack of thirty years of "Taylor like" work experience. Employees must start getting used to working together and sharing information. Managers must facilitate cooperation, must learn about how to encourage people to contribute in online forums, to generate trust, facilitate teamwork, *etc*… The cultural and social structure of the organization and its employees must breathe collaboration. The aim is that teams and people should become self-organizing. Knowing that they are going to make the decisions, they take responsibility, because they are not afraid of consequences and because the culture of the organization stimulates creativity and innovation.

Here we can take lessons from how people use internet and collaborative services in their private lives. In that sphere people are already very familiar with collaborative services. They share their online profiles (Facebook, MSN, MySpace), enjoy a low barrier in communicating with their network (using Twitter, email, chat) and even share knowledge wherever possible (*Wikipedia*, weblogs, FriendFeed, reviews and ratings). People will bring the experiences and expectations from their private lives into the corporate world. They expect the same kind of services to be available within the organization. And they want these tools to be available whenever they need them, without any restrictions. Does it make any sense to govern or limit their use of the same tools within the organization? New services providing collaborative functionality will require new insights into governance principles and culture. To quote one IT manager,

> *Is it fair to govern 21st century tooling using 20th century principles? Would you put restrictions on how long people talk to others they meet in the hallway? Would you forbid people to talk about their vacation over coffee?*

Collaborative Mindset, a New Look at Productivity

Culture is organic and is made by people. If collaborative culture takes root, people will work and think differently; or, conversely, if people start to work and think differently, collaborative culture will have taken root. In the intricate interaction between culture, tools and (work) habits, the usability of the tool, the *work experience*, plays an important role.

In a blog post by Leo Babauta on Zenhabits.net, he puts forward eight "new rules of work" that show the shift from old-school productivity and Corporation-2.0 productivity.[17] These are of course general rules of thumb, but they do give insight into the changes that are occurring:

1. ***Don't Crank – Work with Deeper Focus***

Old School: Crank it out*. The old school of productivity taught us how to crank out the tasks. Each task is a widget that needs to be cranked, and the more we crank out, the better. Speed is important, and cranking out more tasks is the ultimate criteria. How many tasks can you finish in a day?*

Productivity 2.0: Deep focus*. The new worker isn't as obsessed with speed. He allows himself to slow down and work at a more leisurely pace. He clears away distractions and allows himself to focus on the task at hand. He gets passionate about important and exciting tasks and gets into Flow. This allows for a new kind of productivity – one where quality matters, where amazing things are produced at an intense rate, where there is a passion and satisfaction in completing a task.*

2. ***Minimize Meetings and Planning – Just Start***

Old School: Lots of planning is important*. Hold numerous planning meetings, draw up specs or detailed timelines, make sure things are well planned out before committing resources. This, however, meant that things took time. That was fine when the world moved at a slower pace.*

Productivity 2.0: Just start*. Forget all the detailed planning. Meetings are a waste of time, usually. Instead, figure out the minimum requirements to launch, get those done as quickly as possible, and launch in beta mode. Improve as you go along. Things don't have to be perfect at launch. (...)*

3. ***Paperwork Is Out – Automate With Technology***

Old school: Crank through tons of paperwork. *The old productive worker had tons of incoming papers, and lots of paperwork to fill out. And productivity methods*

17 Zenhabits.com provides its content under open source license. We recommend you visit the site at www.zenhabits.net.

taught him how to crank through that paperwork.
***Productivity 2.0: Automate with technology**. Many workers are learning to go paperless. And because everything is becoming digital, you can use technology to process it faster. (...) Many little tasks that used to be performed by humans can now be automated through computers.*

4. Don't Multi-Task – Multi-Project and Single-Task
***Old school: Multi-tasking is productive**. Juggling tasks shows how productive you are, says old school productivity.*
***Productivity 2.0: Multi-project and single-task**. It's more about about single-tasking – focusing on one task at a time to be more effective, but multi-projecting has its uses too. Let's say you're working on Task 1 of Project A – you should single-task while working on Task 1. But when it's done, you might need to wait for a response from your boss before moving on to Task 2. In that case, while you're waiting, you can work on Task 1 of Project B, single-tasking while doing that. When you're done with that, you might need to hear back from a client before moving on to the next task of Project B – in which case you can either return to Project A if your boss responded, or move on to Project C. Single-task while working on any one task, but working on different projects to make your time more efficient can be a useful skill.*

5. Produce Less, Not More
***Old school: Produce more**. Again, the idea was to crank out as much as possible. Good managers tried to get as much productivity out of their workers as possible. Good workers produced more.*
***Productivity 2.0: Produce less**. More isn't necessarily better. The old thinking can lead to a big pile of crap. Instead, focus on quality, on innovation, on creativity. Focus on the important stuff. Let's take a software engineer as an example: one engineer can write tons of code, knocking out one program after another. But a second engineer can focus on a really innovative program, and though he has produced much less code and fewer programs and has spent more time on a single program ... his software can change the industry. It can win awards and recognition. It might even be the company's main source of income if it catches on. Produce things that change the world, with a long-lasting impact.*

6. Forget About Organization – Use Technology
***Old School: Be organized**. The productive worker of the past had drawers full of files, all organized thoroughly so that nothing would ever be lost. He had a Filofax full of contacts and appointments. He organized his computer files into folders and subfolders and sub-sub-folders and on and one. It took a lot of time, but it was worth it.*
***Productivity 2.0: Tag, archive and search**. With technology, that's not necessary.*

Tag a file with a certain label, archive it, and find it later through its label or through search. This approach saves a lot of time, a lot of effort, and a lot of headaches. You can spend your time on more important tasks.

7. Out With Hierarchies – In With Freedom

***Old School: Hierarchy**. The old way of thinking is that hierarchies are more efficient. After all, in a dictatorship, the trains run on time, no? Well, that's not always true. Hierarchies require a lot of top-down decision-making, and a lot of up-and-down communication. The bottom level is often left powerless to act until the top level makes decisions, and the top level is often left without important information necessary to make those decisions, because they aren't down at the bottom in the trenches. As a result, there's a lot of inefficiency.*

***Productivity 2.0: Independence, freedom, and collaboration**. Hierarchies are being flattened out. In fact, whole new forms of organization and collaboration are being created all the time. People more and more are working independently, either within a company or as freelancers and consultants. They take on jobs as they like, and collaborate with others at will. Workers are empowered to make decisions, communication is more efficient, and people with freedom are generally happier with their jobs and more passionate about the work they produce.*

8. Work Fewer Hours, Not More

***Old School: Work longer hours**. Work long and hard! Be a top producer! Burn out by age 40! Working long hours earned you points with your boss, and there was a competition to see who worked the most and the hardest.*

***Productivity 2.0: Work fewer hours**. With more freedom, workers are realizing that work isn't everything, and that it's more important to be happy, to produce important work, to have the freedom to be creative and innovative, to be passionate about your work ... than to give everything you have for something you don't care about. As a result, more people are working from home. More people have flexible working hours, working early and leaving early or coming in late and leaving late. More people take naps in the afternoon, when their productivity normally flags, and wake up refreshed and ready for a productive round 2. More people are setting limits to their working hours, and realizing that with those limits they actually make better use of the fewer hours they work.*

Culture Is of the People

Culture is ultimately determined by the people, and any company will most likely have different kinds of people working together. We have mentioned

the digital natives before. They are a special group when it comes to collaboration and using technology. But of the others, the digital immigrants so to speak, some will also be able and willing to join new initiatives. Forrester Research uses a ladder analogy to show how people can develop in several steps from inactive to fully fledged creators (see Figure 6.12). When initiating collaboration within an organization, companies often rely upon the people who are already higher up the "social technographics" ladder in order to create successful pilot projects that will attract and inspire people who are newer to the technologies. If we look at the statistics, the different generations show their true colors: of the younger generation (people between 18 and 21 years old), about 37% is a "creator" and only 17% is a complete "inactive." Compare this to the people in their fifties, where only 15% is a "creator" and a shocking 61% is "inactive"! Note that the ladder is merely an illustration of the different levels and suggests a natural progression. It does not imply that everybody will move up the ladder or even that all steps in between have to be taken in order to reach higher levels.

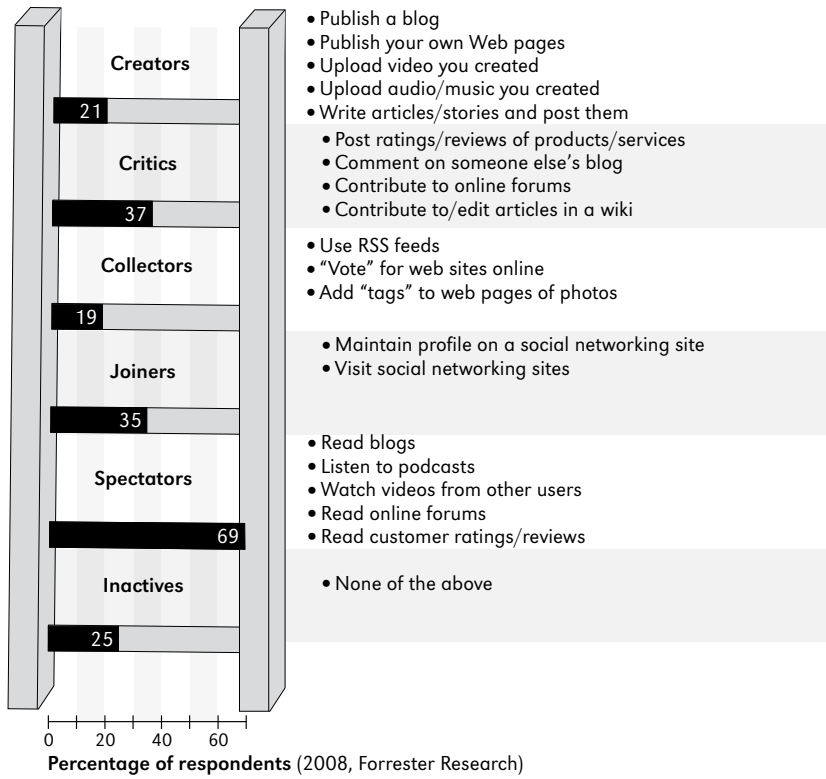


Figure 6.12: Social Technographics Ladder

Another way of involving all kinds of people is not to bring the people to the technology but to bring the technology to the people. A great example of this is in research conducted in 1998 by the University of California in Los Angeles. Julian Orr, an anthropologist, did research for a photocopier company to find the best way to use technology to support their repair technicians. Orr took a broad view of the technicians' lives, learning some of their skills and following them around. Each morning the technicians would come to work, pick up their company vehicles, and drive to customers' premises where photocopiers needed fixing; each evening they would return to the company, go to a bar together, and drink beer. Although the company had provided the technicians with formal training, Orr discovered that they actually acquired much of their expertise informally while drinking beer together. Having spent the day contending with difficult repair problems, they would entertain one another with "war stories," and these stories often helped them with future repairs. He suggested, therefore, that the technicians be given radio equipment so that they could remain in contact all day, telling stories and helping each other with their repair tasks.

The example also shows the importance of the social structure for collaboration. We are more likely to share information with people we know and like.

6.5 Goals and Rewards

Collaboration is working together towards a shared goal. Or is it? It helps if the goal of the collaboration is clear and known to the parties who are taking part in the collaboration, but people's individual goals may vary. So before we can look at improving collaboration, we need to examine how we set goals, and – what is closely related – how we motivate people.

Collaboration, like most activities, will only occur when people know they will get something in return. They won't do it for nothing, but they might do it for free! (That is, by accepting rewards other than money or goods). People collaborate in many different ways. We already have hundreds, even thousands of years of experience in collaboration and communication. From the first forays into communication while hunting mammoths to the social networks on the internet nowadays, we have known that if we did not work together towards the shared goal of killing that mammoth the whole group

would starve and some team members would probably be flattened in the process.

Goals are mostly top-down. While solutions, innovations and ways to achieve the goals are best left to teams to discover, the goals are usually externally assigned. Allowing teams to set their own goals tends to lead to long debates and soul searching without any progress. The assigned goal may of course not be too detailed: "The goal is to write this one paragraph for this newsletter" is easily translated into a work order. On the other hand, "The goal is to involve people and communicate our progress," leaves more open to the team collaborating and will lead to better and more creative results. The goals are part of the vision.

The Vision Ignites the Fire and the Rewards Keep the Fire Burning

The most crucial element underpinning the vitality of effective collaboration is a shared vision. This might be a vision of a specific collaboration ("We will build the product set of the future") or it might be a vision of how the company wants to work generally ("We will be the most engaging and inspiring workplace.") Once this vision is determined and communicated throughout the organization (including internal staff and external stakeholders, clients, *etc.*), it becomes the reference point for future action. As such, the critical focus of the leader's attention is on developing and crafting the collaboration vision. More than just a sentence on a document, the vision should be brought to life and embedded in the activities, reward mechanisms and key performance indicators of the entire organization. The reward mechanism demands some extra attention, since money and bonuses will most probably not be the most effective motivators.

People will not share anything unless they stand to benefit from the experience. Employees must know how and why their opinions and contributions to the collaborative system will make a difference. They should be encouraged and rewarded. Management guru Peter Drucker inspired the adage, "Knowledge is never conscripted but only volunteered…."[18]

The adage is still very relevant today and is not taken to heart often enough. Get this right and you will go much further towards a successful collabora-

18 Inspired by Peter Drucker.

tion platform/initiative, regardless of what tools you use (portals, mashups, team sites, instant messaging, web conferencing, blogs, wikis…).

Rewarding people with (bonus) money or other gifts is ingrained in many organizations, but research shows that by rewarding someone we take away the inherent pleasure of the task itself.[19] The reasoning behind this is that people unconsciously think, "if I must be rewarded to do this, it apparently is an unpleasant task that needs rewarding to get me to perform it." So giving people money to write blogposts or contribute to the corporate wiki might backfire, turning a "fun" thing into another work task.

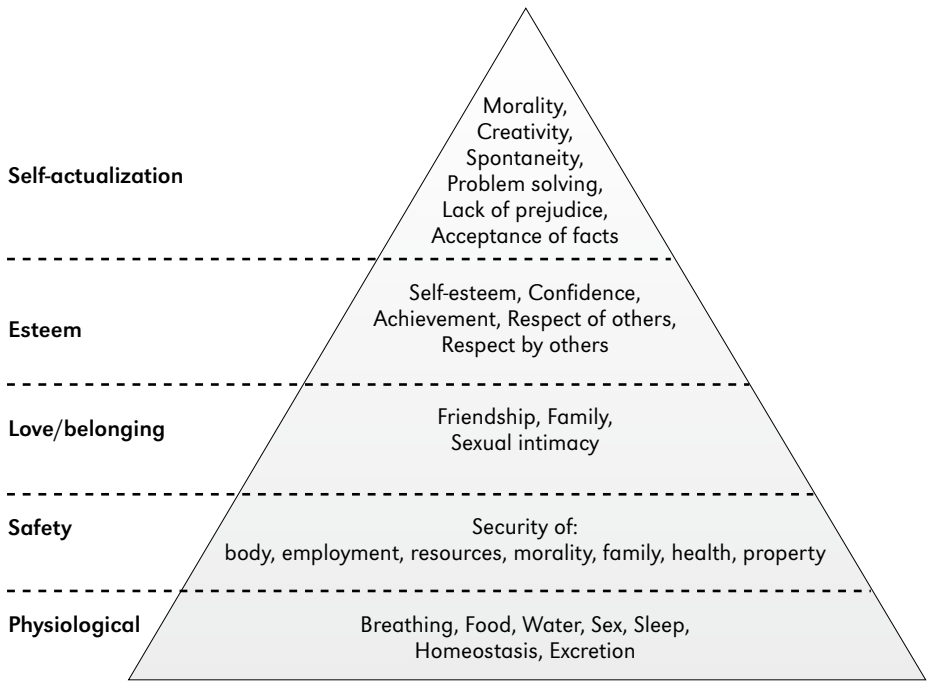


Figure 6.13: Maslow's hierarchy of needs is often depicted as a pyramid consisting of five levels: the first (lower) level is associated with physiological needs, while the top levels are termed growth needs and are associated with psychological needs. Deficiency needs must be met first. Once these are met, seeking to satisfy growth needs drives personal development. The higher needs in this hierarchy only come into focus when the lower needs in the pyramid have been satisfied[20]

19 http://www.gnu.org/philosophy/motivation.html.
20 http://en.wikipedia.org/wiki/Hierarchy_of_needs.

When looking for ways to motivate people, we might reexamine the classic Maslow pyramid. According to Abraham Maslow's Hierarchy of Needs things such as love, belonging (to a group), respect for others and by others are needs that must be satisfied *before* creativity and problem-solving are perceived as valuable. If people don't experience respect and confidence, their first drive will be to find this respect and confidence, before they will start looking for creativity and spontaneity as inherently fulfilling activities.

Shared Model of the Truth

We need trust, culture and the right way of thinking and motivating people, and then we can get to work. Before people can start to work effectively together, they also need a shared model of what is "true." People must have access to the same information and must have a way to verify the information. For example if one party is operating under the belief that shipping costs are low and another is operating under the belief that shipping costs are high, it will be very hard to come to a joint solution for optimizing shipping and stocking.

Creating a shared model of the truth means giving people access to information. When working across corporate boundaries, with partners or with clients, this means these other parties must get access to the same information! And if we are creating autonomous units where people are free to respond to changing circumstances, they might need access to different kinds of information than what they needed access to before. If we want to allow people to create mashups (a combination of services to meet a specific need), we will get many different solutions using a lot more "obscure" sources of information. For true autonomy and spontaneous collaboration, expect to open up the corporate data stores. This in turn means detailed access control and auditing.

(Freedom) Rules?

So far, we have seen that an open culture, where bottom-up initiatives are valued and people are free to build social networks in the workplace, gives the best results for collaboration. At the same time, we also have corporate responsibilities that need us to limit our liabilities and guide our investments. How do we set the rules?

Rules of the Game

One of the aspects of a collaborative culture is that people use norms, cultural values, to guide their behavior. Just like we would not tolerate people yelling in the hallways, we do not tolerate people misusing the corporate collaborative tools. When we are collaborating across organizational or even national boundaries, examining the rules of the collaboration game is extra important. Implicit expectations about how to behave can lead to troubles in the communication and collaboration. Have you ever worked with someone from a different geography and culture? How do they respond to jokes? What is their view of deadlines and quality? Just as any traditional project needs to examine the rules of engagement, a collaborative initiative (which can be part of a larger project) also needs to define the ground rules.

And then there are the corporate rules, aimed at limiting liability while trying to allow the good things to happen.

Prevention and Freedom

How do you prevent your valuable information from being lost or misused? How can you capture new ideas and stimulate innovation? Do traditional IT rules and guidelines, which are already in place, take into account the multitude of aspects related to knowledge-based and information-sharing technology?

Innovation demands the creation of new ideas. Collaboration supports idea creation. Implementing new ideas requires flexibility. But when you take a look at internet guidelines, currently in use by many companies, they are old-fashioned and don't stimulate innovation and collaboration. It looks like there is some kind of fear around blogging, instant messaging, social networks and all kinds of other 2.0 technologies, just as in the early ages of the internet and the rise of email.

These rules and guidelines are made with risks in mind. Risks may include safety, legal issues, ethical concerns, costs, or system overload, and certainly productivity is an important impetus behind some rules. Why don't these rules always produce the best result? They are made with the aim to control. Control is good for the old-fashioned manager, the Taylor-style manager, but isn't necessarily good for an innovative environment where it would be better to have collaborative leadership in place. Workers need to communicate with customers and other kinds of interest groups in order to share knowledge about the product or service. They need to be inspired while browsing

the internet, watching videos, reading blogs and having direct contact using instant messages and micro blogs.

For example, most organizations have blocked access-streaming media as one of the internet guidelines. But why aren't employees allowed to use streaming media? Probably organizations are worried about system overloads, or perhaps they are worried that an employee might watch the Tour de France during business hours and be unproductive for the duration. But these days, video is widely used in communication and collaboration platforms to exchange ideas, pilots and even user guides. On YouTube there are many videos delivering new ideas as well as user guides. Microsoft used streaming audio to broadcast an important keynote address from Ray Ozzie during the Professional Developer conference (where he launched the new Windows Cloud Platform "Azure"), so employees didn't have to travel to a large event but could still get the information first hand.

Every company will have to find its own balance and ways to enforce the parts that need to be enforced. Determine which data people can share across units and which data is very sensitive. What can be published and what needs to stay very secure? What data should never end up on a memory stick in a rental car? The theme we are running into here is of course an element of IT governance: information security. A valuable approach with regard to collaboration is to attach to every information asset some metadata that describes for example the confidentiality, need for integrity and availability of the asset. Combined with a structure of roles and access rights, collaborative systems can then determine if people can have access to certain information and how it can be shared. Given the ease with which information can be shared, it pays to draw a plan before launching any initiatives to address the most basic security questions.

Figure 6.14: Live Webcast of Launch of Azure[21]

21 http://channel9.msdn.com/pdc2008/KYN01/.

Example: Blogging Rules

The fear of sharing too much information is very prominent with blogging. Another worry could be whether employees will spend a lot of time writing blogs, reading other blogs, or searching for new blogs. How do you know if the blogging is "work related" or "personal"? Many companies have trouble trying to regulate this kind of new information-gathering and collaboration. Most of them find that there has to be some kind of guidance.

A crude but simple code of conduct is the "not allowed to blog" rule adopted by some companies. There are many reasons to allow blogging and there is only one reason why you would want to prevent it, and that is the fear of losing control: you are "not in control" of what employees are saying about the company. As Technorati founder and CEO David Sifry says:

> *It's scary. The lesson everyone learns in Marketing 101 is, "Control the message." Blogging turns that on its head, and that's very frightening.*

But the advantages far outweigh the disadvantages, as this article on WebProNews, a portal about how to build a better online presence, says:

> *Banning work related blogging activity, by members of the organization, actually hurts the business. By failing to take advantage of the blog benefits, including transparency, conversation and community building, and relationship development, a company blogging ban does more harm than good.*[22]

Instead of forbidding blogging, it's better to define some important blogging rules. Many companies already have an online presence in the blogosphere. The guidelines from these companies, most of which are publicly available, are an interesting starting point for establishing rules to guide the online presence of employees. For example, the blogging guidelines from Yahoo![23] can be found online and might be a basis for your company's set of rules.

Most of the blogging guidelines include the rule that the writer is personally responsible for his writing, and most of them want the blogger to use a disclaimer. IBM says,

> *Blogs, wikis and other forms of online discourse are individual interactions, not corporate communications. IBMers are personally responsible for their posts.*

22 http://www.webpronews.com/topnews/2005/03/24/corporate-blogging-guidelines.
23 http://jeremy.zawodny.com/yahoo/yahoo-blog-guidelines.pdf.

Actually this rule is a little bit strange because they are corporate blogs. But this disclaimer also gives the employee freedom to post anything he wants to, even about the company or the products they make.

Beside the common rule about responsibility most guidelines also include more obvious rules such as "keep secrets" and "be respectful." Yahoo! has also included a rule that ties the new world of blogging to the old world of marketing:

> *If a member of the media contacts you about a Yahoo!-related blog posting or requests Yahoo! information of any kind, contact PR.*

Blogging is just a small part of the whole collaboration spectrum, but talking in terms of rules, freedom, publicity, innovation and added value, establishing blogging rules is a good starting point for adopting Web 2.0 technologies.

When you are considering the rules for blogging, don't let them stand in the way of success. It takes some freedom to have a successful corporate blog. Robert Scoble, the previously mentioned author of *Naked Conversations*, is also a well-known blogger and former Microsoft employee who introduced more open communication within Microsoft with the start of Channel 9. In 2003 he proposed a weblog manifesto for companies. In the manifesto he shared his ideas on how to make a corporate weblog "successful." How many of these things could your employees currently do? Does that mean they can or cannot write a blog about your company?

The Corporate Weblog Manifesto[24]

Thinking of doing a weblog about your product or your company? Here are my ideas of things to consider before you start.

1. ***Tell the truth***. The whole truth. Nothing but the truth. If your competitor has a product that's better than yours, link to it. You might as well. We'll find it anyway.
2. ***Post fast on good news or bad***. Someone say something bad about your product? Link to it – before the second or third site does – and answer its claims as best you can. Same if something good comes out about you. It's all about building long-term trust. The trick to building trust is to show up! If people are saying things about your product and you don't answer them, that distrust builds. Plus, if people are saying good things about your product, why not help Google find those pages as well?

24 The complete story can be found at http://scoble.weblogs.com/2003/02/26.html.

3. ***Use a human voice***. Don't get corporate lawyers and PR professionals to cleanse your speech. We can tell, believe me. Plus, you'll be too slow. If you're the last one to post, the joke is on you!
4. ***Have a thick skin***. Even if you have Bill Gates' favorite product people will say bad things about it. That's part of the process. Don't try to write a corporate weblog unless you can answer all questions – good and bad – professionally, quickly, and nicely.
5. ***Don't ignore Slashdot***.
6. ***Talk to the grassroots first***. Why? Because the main-stream press is cruising weblogs looking for stories and looking for people to use in quotes. If a main-stream reporter can't find anyone who knows anything about a story, he/she will write a story that looks like a press release instead of something trustworthy. People trust stories that have quotes from many sources. They don't trust press releases.
7. ***If you don't have the answers, say so***. Not having the answers is human. But, get them and exceed expectations. If you say you'll know by tomorrow afternoon, make sure you know in the morning.
8. ***Never lie***. You'll get caught and you'll lose credibility that you'll never get back.
9. ***Never hide information***. Just like the space shuttle engineers, your information will get out and then you'll lose credibility.
10. ***If you have information that might get you in a lawsuit, see a lawyer before posting, but do it fast***. Speed is key here. If it takes you two weeks to answer what's going on in the marketplace because you're scared of what your legal hit will be, then you're screwed anyway. Your competitors will figure it out and out-maneuver you.
11. ***Link to your competitors and say nice things about them***. Remember, you're part of an industry and if the entire industry gets bigger, you'll probably win more than your fair share of business and you'll get bigger too. Be better than your competitors – people remember that. ...
12. ***Be the authority on your product/company***. You should know more about your product than anyone else alive, if you're writing a weblog about it. If there's someone alive who knows more, you damn well better have links to them (and you should send some goodies to them to thank them for being such great advocates).

6.6 Conclusion

While there is no golden recipe to "ignite" collaboration, we can say that you can make it harder or easier on yourself. To set the stage and create the right environment where the spark of a great inspirational vision and goal may set off productive collaboration, at least you need to address the things discussed:

- Create a structure that enables trust;
- Create the environment where a social network can live, or become part of existing networks;
- Share the vision, the goals;
- Motivate people in the right way and give them the freedom to deliver; and
- Talk about the rules that guide collaborative behavior.

After that, it could still be a challenge to make people from four different time zones, cultures and organizations work together, but if at least they can trust each other, know what the rules are and – of course – if they can trust the technology to support them in any way they see fit, there will be people who will take to this new way of collaborating. And once one group is on board, others will follow, by either joining existing initiatives or by creating their own.

Case: It's Taken a Circuitous Route, but Publishing Company on Verge of Collaboration Breakthrough

Scattershot Attempts Prevent Company from Knowing What It Knows

To say that the road to a collaborative business environment has been a bumpy one for this business information supplier would be a gross understatement. But after several years of ineffective efforts to infuse the company with technology-enabled collaboration, the $9 billion-a-year publisher of journals for the medical, legal and business sectors believes it's about to get it right.

The company's first attempt came with the deployment of Microsoft's SharePoint 2003 collaboration tool. But with an insufficient infrastructure to support it, it choked the network, rendering it more a source of frustration than anything. Complaints rained down on IT until, in 2006, the company upgraded to Microsoft Office SharePoint Server 2007, cobbled together an improved infrastructure, and watched the tool start to take off, growing to 10,000 SharePoint sites. But performance began to suffer as familiar problems surfaced. Again, the environment grew increasingly constrained by the infrastructure, it wasn't assigned to the right hardware, and because there was no strategic communication about it, people had to discover it themselves.

Without an effective collaboration environment, the information-intensive company that had grown primarily by acquisition was plagued by islands of information that made it difficult – if not impossible – to effectively reuse its vast pool of intellectual property. It was a case of "You don't know what you know," says the senior director of enterprise architecture. "We're an information company, and we had all this information out there, but we couldn't make the connections."

Ramped-Up Commitment Expected to Yield More Cohesion

That's when the company made the decision to take the effort up a notch. It started by building a standard Active Directory structure to ensure all of its 32,000 employees were in the same environment. Then it earmarked budget to clean up its SharePoint environment, turning to Sogeti for help in designing an infrastructure that could support SharePoint for years to come. An interim architecture built with Sogeti's assistance is enabling SharePoint to run more effectively until the more permanent infrastructure is completed, most likely in early 2009.

Concurrently, the company has begun a two-year effort to condense its scattered portfolio of disparate applications into a smaller number of instances, all to be accessible via a SharePoint intranet portal. That, combined with the decision to standardize globally on SharePoint, will enable the company to collaborate more effectively by functioning as a cohesive unit.

Persistent Connections Yielding Early Results

Even now, the interim infrastructure has brought a stability that is helping the company see SharePoint's true potential. Global teams are assembling to collaborate, and then disassembling very quickly, without any need for IT involvement. Project teams are moving faster, delivering products on more aggressive timelines. And general areas of concentration are emerging.

One of these concentration areas centers on knowledge discovery, with people using SharePoint sites to exchange expertise. Then there's a category of sites where project teams focused on specific processes or outputs can collaborate globally by front-ending their work in one location where colleagues can easily get at it. The company also has created a process for "calling out the militia," as the director of enterprise architecture puts it, enabling teams to quickly, and collaboratively, tackle isolated situations such as IT security incidents, new business opportunities, or acquisitions. "We're fostering discovery, which is what I'm really after," he says. "We're creating persistent connections between business units and experts who can help each other."

And to make sure the company doesn't lose control of the environment again, there's increased attention being paid to governance. In addition to previously established guidelines about expiring sites after a period of inactivity, the company also is working on security, ensuring that employees are clear about what's appropriate to share with a wide audience, and that anyone who sets up a SharePoint site can easily assign permissions.

Eventually, the company will extend its SharePoint 2007 environment to update its extranet, which currently runs on Microsoft Content Management Server, and the company also is looking at bringing Microsoft's Groove real-time collaboration tool into the mix.

7 Mixing Software + Services

7.1 Introduction

There are fundamental changes that continuously occur within our industry related to the price of different types of components and the cost of communication. About every five years or so, we've found the need to re-evaluate the right architectures for systems based on changes that are occurring. Today, the confluence of cheap computing, cheap storage, and cheap communications is again causing us to re-evaluate where we put computing in order to deliver solutions and solve problems.

– Ray Ozzie, Chief Software Architect, Microsoft[1]

As we saw in Chapter 2, we are on the top of another Kondratiev wave of fundamental change. We are entering a time of rapid change for business. In previous chapters we have talked about collaboration and the organizational side of this change. In this chapter we will focus on the delivery architecture for the services and tools that enable cross-boundary collaboration. The developments in technology around SOA, Web 2.0 and SaaS, combined with the rise of the "conversation society," offer us new possibilities and new flexibility to deliver solutions that specifically fit any user, any situation, any location, any device *etc*. The rapid changes in society also impact IT itself.

In the IT industry, that will cause considerable disruption and change for the IT and enterprise vendors, and for the way that people perceive and use technologies. This disruption is similar to the earlier PC and internet revolutions in terms of scope and effect. It touches millions of people, generating diverse models of commerce and of IT consumption, as well as diverse ways of generating revenue and value. It has already spawned new marketplaces, industries, and multibillion-dollar companies, and it has had a dramatic effect on multiple aspects of business.

The driving forces behind this radical disruption are the same ones that have driven the previous disruptions we have seen in the IT space: creativity, communication, and commerce. People want to be creative and unique, and

1 http://msdn.microsoft.com/en-us/library/aa905319.aspx.

they want to innovate and to build, to make new things and generate new ideas. Additionally, people want to communicate and share with one another both locally and globally. This desire to share and the value that can be created by collaboration is tearing down organizational barriers. It is blurring the distinctions between consumers, suppliers, and business. It is making all enterprises more transparent. Finally, businesses want to expand and create new products, services, marketplaces, and revenue.

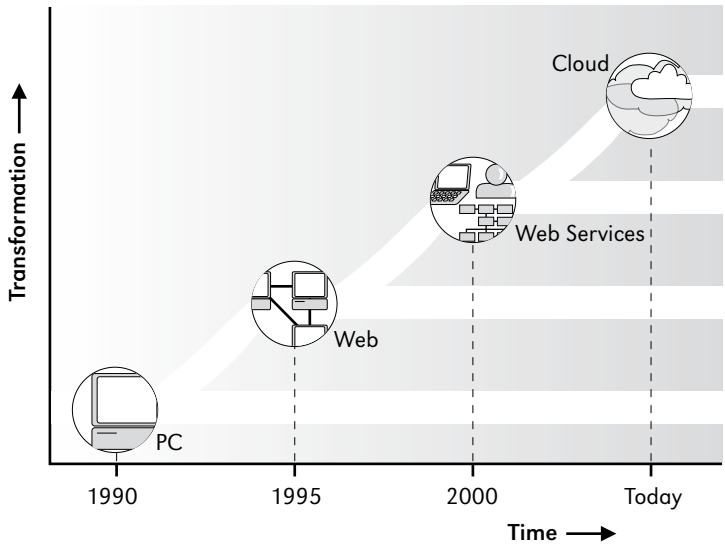


Figure 7.1 Technology at the Base of Disruption

The main force driving this disruption, as in the previous ones, is technology. The falling cost of bandwidth, the availability of computing in new and diverse (and cheaper) forms and devices, the emergence of cloud services and platforms, and the increase in productivity and ease of use has caused a massive uptake of web-based applications. This disruption is in its early days and the full ramifications of what will happen have not yet emerged, but the opportunities are all around us, so those people and organizations that recognize them early will benefit most.

In the next three sections we will examine key catalysts that are collectively driving and creating the emerging Software + Services model. We will then outline the key principles underlying the Software + Services model. We will conclude by discussing some of the implications of the Software + Services model on IT at large.

7.2 The Evolution of Service-Oriented Architectures

Service orientation has changed our view of IT and architecture dramatically. It is an architectural style that can be used to guide the design of distributed systems. At its most abstract level, service orientation views every business capability, and every IT asset – from the mainframe application to the printer, to the shipping-dock clerk, to the overnight delivery company – as a service provider. SOA looks to create an architecture for the organization as a collection of business services that mirror organizational capabilities. These "business services" in turn are composed of many layers of more technical services.

Some of the standards that are used to implement SOA are also used without the overarching architecture for "simple" integration purposes, making it easy to connect to mainframes or other technical entities. Service providers expose capabilities through interfaces, and service-oriented architecture maps these capabilities and interfaces so they can be orchestrated into processes. The service model is "fractal:" the newly formed process is a service itself, exposing a new, aggregated capability.

At a macro level, from an architecture perspective, SOA may be thought of as being about the space between the systems or services. The core tenets of SOA are focused on the harmonization of these systems or services, and one can view service federation and service composition as the primary capabilities of service-oriented applications.

SOA represents the collection of a lot of prior knowledge about IT combined into one coherent architectural style. SOA provides us with a model that allows us to improve IT maturity and guides us in the way we can design, develop, build and manage applications. The concept of "application" is no longer viable, since we are looking at services as independent reusable entities. These services can then be combined into processes that may be very dynamic and/or personal. SOA has fundamentally changed the way that we think about, design, develop, build and manage applications.

Gone is the model where the application was a static entity – today the application is usually a dynamic, on-demand composition of services directed by the end user. This has paved the way for IT to conceive of itself as a collection or portfolio of services. Predominantly these services are in-house – but the genie is out of the bottle and this shift in mindset and in execution is paving

the way for IT to investigate and pursue services that may be outside of the organization.

Organizations that gain experience with SOA discover that the boundaries between internal and external services are consequently blurring: both are very similar in their provisioning and use. Because those organizations have their internal IT in order, they are almost automatically ready to connect to the cloud.

The Evolution of the Web

There was a time when the web was about delivery of information to the end user. This design pattern traces its heritage to the hypermedia information systems that led to the invention of HTTP – the protocol used to transfer text and webpages across the internet. However, this pattern was quickly superseded by the use of the web to enable transactional, commercial scenarios – where the end user was able to transact with a provider. Prominent examples of the Business-2-Consumer (B2C) pattern are sites such as Amazon.com and eBay.com, among others.

In the last decade, these web applications have undergone some tectonic shifts. Gone are the days of the web application as a means of information delivery or even transactional commerce. Today's web applications have become hubs for people and for communities to create and share, and to do so collaboratively. Websites and applications have become bazaars where users can come together to share rich content, to engage with one other, and to discuss and create entirely new content in ways that were unimaginable in the early days of the web.

Rise of the Conversation Society

In the book *Me the Media: Rise of the Conversation Society* the impact of disruptive technologies is seen through the lens of the media. Media play a central role in our lives, an observation that is also literally what the word means. Traditionally, a "medium" is found in the space between sender and receiver. Since there are various ways of communicating (or mediating) across this space (one-to-many, one-to-one, many-to-many, visual, auditory, textual and via associated devices), it is possible to distinguish different types of "media."

What the internet has done is to gather the pre-existing media – radio, TV, newspapers, magazines, telephone, *etc.* – into a single multimedia environment that is personal and social at the same time. This trend is greatly troublesome to traditional mass media and the organizations that tend to support communications in such mass-media forms. In the "digital Middle Ages," every medium had its own distinct footprint, but these distinguishing features have now become fully interwoven in the multimedia internet, forming what has now become a single undifferentiated media mass.

Due to the emergence of this personal and social multimedia internet, experiences of the brand and identity have gained enormously in importance. Phrases such as "service at your fingertips" and "the customer is always right" can now be given new meaning. The first examples of this new development are discernible in the ways that (some) companies engage critical bloggers to help them maintain a competitive edge, while others are involving online customers in innovation and marketing. A similar observation about consumer empowerment was made by the Business 2.0 magazine *American Innovation* and later by *Time* magazine when they placed "You" at the top newsmaker spot at the middle and end of 2006.

We shall now briefly consider each of the three great media revolutions in our history, the most epoch-making media events that have occurred since the development of writing 5,000 years ago.

The First Media Revolution: Type Letters and Printing Press
The newspaper was the final development of the personal media revolution. This revolution resulted from the introduction of type letters and the printing press in Europe and subsequently around the world. Modern printing makes it possible for everyone to be kept informed about the latest developments. In the Wild West, posters clearly advertised the reward for a captured outlaw, for example.

The Second Media Revolution: Electronic Mass Media
In addition to the explosion of newspapers and magazines, radio and television are the major innovations of the mass media age. This second media revolution exposed us to multimedia broadcasts over the airwaves. The resulting forms of communication and socialization combined with print media in a fruitful cross-fertilization.

The Third Media Revolution: Web Media

The internet, the PC, and mobile telephones with cameras are characteristic of the present phase of the third media revolution. We are currently living through the transition from the traditional mass media to a single massive (multi)medium in which everyone can personally participate as a "prosumer." For we are now all able to both consume and produce texts, images and audio, using such devices as our mobile telephones, which have developed along with the PC into the most prominent forms of internet hardware. This third media revolution means even more communication and socialization, since individuals can become personally involved whenever they like. They can also organize themselves into non-traditional associations such as "the Best Buy customer," "the housewife," "the *New York Times* subscriber," "the jazz lover," or "the liberal."

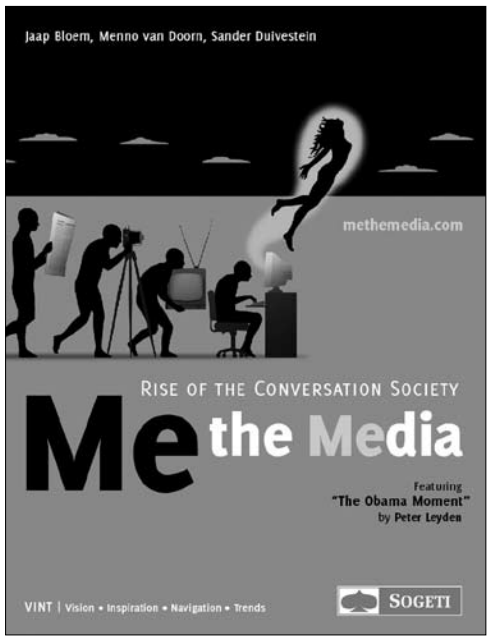


Figure 7.2: Cover of Me the Media: Rise of the Conversation Society

The Emergence of Cloud Computing and Software as a Service (SaaS)

The viability of the internet as an extended platform, facilitated by cloud services and managed offerings, is driving interest in sourcing services from the "market" (aka the cloud) and Software as a Service, as opposed to buying/building applications and managing them on-premises.

Wikipedia[2] defines SaaS:

> *Software as a Service (SaaS, typically pronounced "sass") is a model of software deployment where an application is hosted as a service provided to customers across the Internet. By eliminating the need to install and run the application on the customer's own computer, SaaS alleviates the customer's burden of software maintenance, ongoing operation, and support. Conversely, customers relinquish control over software versions or changing requirements; moreover, costs to use the service become a continuous expense, rather than a single expense at time of purchase.*

From an enterprise perspective, SaaS and cloud-based services open a plethora of possibilities. From the MSDN view[3], some of the benefits of SaaS and cloud-based services are as follows:

Managing the Risks of Software Acquisition
Traditionally, deploying large-scale business-critical software systems, such as ERP and CRM application suites, has been a major undertaking. Deploying these systems across a large enterprise could cost hundreds of thousands of dollars in upfront licensing fees, and usually requires an army of IT personnel and consultants to customize and integrate it with the organization's other systems and data. The time, staff, and budget requirements of a deployment of this magnitude represent a significant risk for an organization of any size, and often puts such software out of the reach of smaller organizations that would otherwise be able to derive a great deal of utility from it.

The on-demand delivery model changes some of this. SaaS applications don't require the deployment of a large infrastructure at the client's location, which eliminates or drastically reduces the upfront commitment of resources. With no significant initial investment to amortize, an enterprise that deploys a SaaS application that turns out to produce disappointing results can walk away and pursue a different direction, without having to abandon an expensive on-premises infrastructure.

Additionally, if custom integration is not required, SaaS applications can be planned and executed with minimal effort and roll-out activities, creating one of the shortest time-to-value intervals possible for a major IT investment. This has also made it possible for a number of SaaS vendors to offer

2 http://en.wikipedia.org/wiki/Software_as_a_service.
3 http://msdn.microsoft.com/en-us/library/aa905332.aspx.

risk-free (and often *literally* free) "test drives" of their software for a limited period, such as 30 days. Giving prospective customers a chance to try the software before they buy it helps eliminate much of the risk surrounding software purchase.

Managing IT Focus

With SaaS, the job of deploying an application and keeping it running from day to day – testing and installing patches, managing upgrades, monitoring performance, ensuring high availability, and so forth – is handled by the provider. By transferring the responsibility for these "overhead" activities to a third party, the IT department can focus more on high-value activities that align with and support the business goals of the enterprise. Instead of being primarily reactive and operations-focused, the chief information officer (CIO) and IT staff can more effectively function as technology strategists to the rest of the company, working with business units to understand their business needs and advise them on how best to use technology to accomplish their objectives. Far from being made obsolete by SaaS, the IT department has an opportunity to contribute to the success of the enterprise more directly than ever before.

Windows Azure and Cloud

In October 2008, on their Developer Conference PDC, Microsoft announced its cloud computing initiative: Windows Azure. According to CTO Ray Ozzie from Microsoft, Windows Azure is a services platform that has been designed for massive scale-out scalability that is running on large, redundant collections of cheap standard servers.

Figure 7.3: Azure Services Platform

On top of Azure, multiple services are hosted. Currently, five services are available: Live Services, SQL Services, .NET Services, SharePoint Services and Dynamics CRM Service.

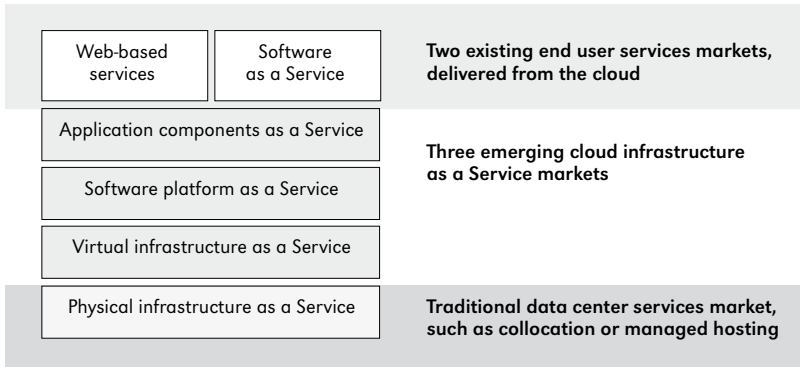
Windows Azure will provide a "Windows server" in the cloud, giving developers the ability to run their applications from the cloud instead of from on-premises hardware. The services on top of Azure either provide the building blocks for creating custom applications or are configurable, ready-made applications such as SharePoint or Office.

One Cloud or Two?

The term "the cloud" has become very popular these days. Everybody is busy developing or embracing their own variation(s) of the cloud. As we saw in Chapter 1, this leads to a lot of confusion and many different definitions.

Analysts from Forrester Research described their vision of "cloud" in great detail. They see roughly two dimensions of "cloud." One is the cloud as a software thing: all sorts of applications and services on the web that provide users with unique ways to interact and collaborate. These are the services such as YouTube, Flickr, Salesforce and the like.

The other dimension they see is the cloud from a infrastructural side: the massively scalable, on demand infrastructure that is being offered by Amazon, Google and now Microsoft. Companies will likely choose to use cloud computing for one or both of the dimensions: either needing services or needing a massively scalable infrastructure that can be turned on and off on demand.



Source: Forrester Research

Figure 7.4: Three Cloud Infrastructure as a Service Markets Are Just Emerging

7.3 The Software + Services Model[4]

There are three overarching principles that guide this model – principles informing the design and development of technological capabilities, for both individuals and business.

The Web is the Hub of Our Social Mesh and Our Device Mesh

The web is first and foremost a mesh of people. Elements of this social mesh will be a primary attribute of most all software and service experiences, as the "personal" of the PC meets the "inter-personal" of the web. Whether in work, play, or just life, the social element of software will continue to transform the ways that we interact with people. All applications will grow to recognize and utilize the inherent group-forming aspects of their connection to the web, in ways that will become fundamental to our experiences. In scenarios ranging from productivity to media and entertainment, social mesh notions of linking, sharing, ranking and tagging will become as familiar as File, Edit and View.

We're also living in a world where the number and diversity of devices is on the rise; not just PCs and phones, but TVs, game consoles, digital picture frames, DVRs, media players, cameras and camcorders, home servers, home automation systems, vehicle entertainment and navigation systems, and more. To individuals, the concept of "My Computer" will give way to the concept of a personal mesh of devices – a means by which all of your devices are brought together and managed through the web, as a seamless whole. After identifying a device as being "yours," its configuration and personalization settings, its applications and their own settings, as well as the data it carries will be seamlessly available and synchronized across your mesh of devices. Whether for media, control or access, scenarios ranging from productivity to media and entertainment will be unified and enhanced by the concept of a device mesh.

The Power of "Choice" as Business Moves to Embrace the Cloud

Most major enterprises are in the early stages of a significant infrastructural transition – from the use of dedicated and sometimes very expensive applica-

4 Ray Ozzie, Chief Software Architect, Microsoft – Services Strategy Update April 2008.

tion servers, to the use of virtualization and commodity hardware to consolidate those enterprise applications on computing and storage grids constructed within their data center. This trend will accelerate as enterprise applications are progressively re-factored from a centralized "scale up" model to the horizontal "scale out" requirements of this new utility computing model.

Driven in large part by the high-scale requirements of consumer services, the value of this utility computing model is most clearly evident in cloud-based internet services. By extension, cloud-based enterprise utility computing, infrastructure services, and enterprise applications are all becoming a reality, affording IT a range of new choices in how to deploy solutions across and between enterprises: within their own data center, in a partner's hosting facility, or with the vendor itself in the cloud. Software built explicitly to provide a significant level of server/service symmetry will enable IT to balance factors such as cost and control, and to leverage the skills of its key personnel most effectively. It will afford choice and flexibility in developing, operating, migrating and managing such systems in highly varied enterprise deployment environments that are distributed and federated between the enterprise data center and the internet cloud.

Small Pieces Loosely Joined, Within the Cloud and Across a World of Devices

Application design patterns at both the front- and back-end are transitioning towards being compositions and in some cases loose federations of cooperating systems, where standards and interoperability are essential. At the front-end, lightweight technologies have become ubiquitous. (Terms such as REST and AJAX reign here.) The standards make it possible to integrate a broad variety of components seamlessly for the user at the surface of the browser. Other standards (such as RSS and ATOM) allow the creation of information feeds that have become lightweight channels and queues between software components. Declarative languages (such as XAML) allow for rapid UI innovation and iteration where simple declaration takes the place of (more complex) programming.

At a higher level, myriad options exist for delivering applications to the user: the web browser, unique in its ubiquity; the PC, unique in how it brings together interactivity/experience, mobility and storage; the phone, unique in its extreme mobility. Developers will need to build applications that can be

delivered seamlessly across a loosely coupled device mesh by utilizing a common set of tools, languages, runtimes and frameworks – a common toolset that spans from the service in the cloud to enterprise server, and from the PC to the browser to the phone.

At the back-end, developers will need to contend with new programming models in the cloud. Whether running on an enterprise grid, or within the true utility computing environment of cloud-based infrastructure, the way a developer will write code, deploy it, debug it, and maintain it will be transformed. The cloud-based environment consists of vast arrays of commodity computers, with storage and the programs themselves being spread across those arrays for scale and redundancy, and loose coupling between the tiers. Independent developers and enterprises alike will move from "scale up" to "scale out" back-end design patterns, embracing this model for its cost, resiliency, flexible capacity, and geo-distribution.

7.4 Implications of Software + Services

Software and Services Spectra

The concepts of SaaS and cloud-based services are increasingly well understood by IT departments in organizations worldwide and with this familiarity has come the desire to explore ways in which IT capabilities can be sourced to reduce cost and improve their ability to innovate.

In particular, the notion of business capabilities such as CRM or email or user collaboration being available from multiple different sources (on-premises, hosted, managed, SaaS or cloud), with differing service levels and differing models of control and governance, and at different price points, has recently gained a lot of attention in IT organizations.

Whilst it may be some time before this scenario becomes mainstream, the advantages of being able to dynamically select a service depending on the business needs are so attractive that many forward-thinking organizations are very actively investigating the idea; indeed, some organizations have the provision of these services as a major element of their future strategy.

Imagine an organization that, based on a business architecture, has defined an IT service portfolio that describes all services the business requires or would like to use. This portfolio can actively be managed, where services are being provisioned to best fit the (budget) requirements. Services can be provided by the internal IT organization (in-house or on-premises), they can be developed by the internet IT organization but be hosted elsewhere (hosted) or at the other end of the spectrum they can be developed and offered by "the cloud." In this case, managing IT becomes very much a case of finding and mixing the best services possible.

Life's a Balance

When we choose between the different models: internal, on-premises, services or cloud-based services, we have to take into account the different characteristics of each service. For example, where cloud services might be cheaper, the options for customization may be limited. Or where our internal services might be easier to extend, there is less flexibility when it comes to replacing or upgrading. The choice between "Software" (on-premises services) or "Service" (cloud service) determines, among other things:

- The amount of control we can exert;
- Flexibility;
- Pricing;
- Trial options;
- Instrumentation;
- Operations;
- Customization;
- Extensibility;
- Integration;
- Richness (of UI features);
- Risk of continuity;
- …

These aspects are all relative: it is not that one service will have NO richness and another will have FULL richness, it's more a matter of "more" versus "less." The user or company requirements then determine if a specific service and its provisioning model fits the need.

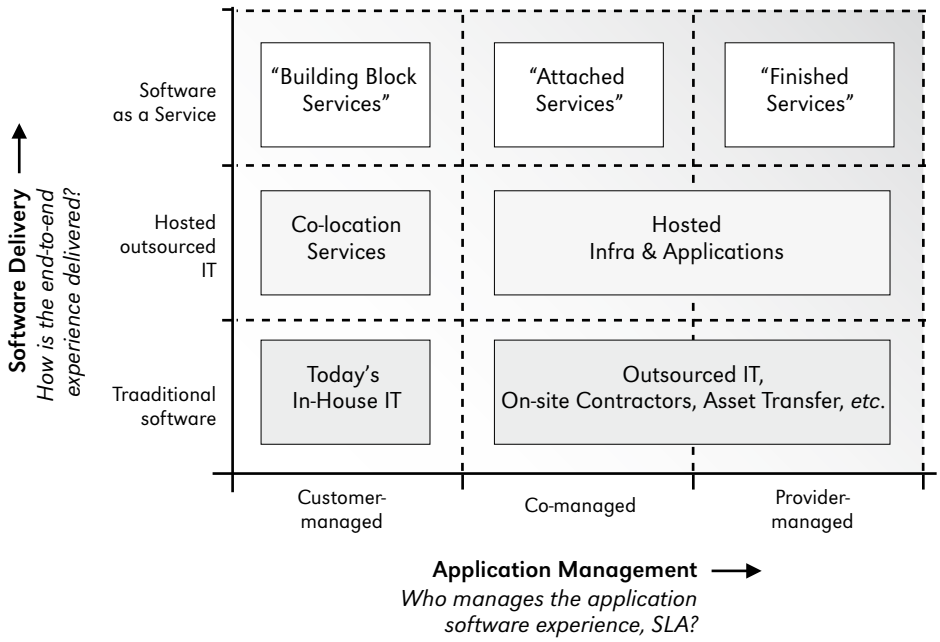


Figure 7.5: Delivery Model shows some dimensions of services versus control. An example of a "building block" service is Amazon EC2, an attached service could be Microsoft Exchange hosted services, and a finished service could be Microsoft Office Live Online

Obviously, there are implications for IT visibility and for the concomitant governance models based on the choice of where in the spectrum the organization decides to source a service. Clearly, on-premises application infrastructure enables the most robust governance models whereas cloud-based services pose challenges with respect to data privacy, data harmonization, and control and archiving.

Heterogeneous User Profiles and Populations

Organizations are realizing that they have a wide and diverse set of users, ranging from (usually) centrally located knowledge workers through production/task workers, contract employees, freelancers, then partners, suppliers, and more and more customers with whom they have to support and interact – the organization providing the appropriate access and security for each individual.

For example, many new real estate companies often have only relatively few centrally located employees and the vast majority of the people whom they must support may be independent, self-employed real estate agents, some of whom may even be freelancers working to their own constraints and schedules. On the other hand, an organization such as Microsoft has a large number of full-time and often centrally located employees and comparatively fewer freelancers, vendors and contractors. In either case, IT is responsible for the productivity of all of the individuals in the organization and the business as a whole.

More and more organizations with significant manufacturing units ask why they need to provision on-premises email capabilities for their shop-floor employees. While email may be the vehicle to share organization-wide information and updates, it is quite likely that many of these employees will not access their email, and that a manager may print out the information and put it up on a bulletin board. They usually start by asking, "Why not use a so-called consumer provider for these user populations?" And while some may benefit and derive value from these services, many are more likely to look to and leverage commercial grade cloud-based services for these user populations.

This brings us to the realization that there is not only a spectrum of services (from internally provided to cloud-provided), but there is also a spectrum of roles, ranging from centralized (corporate) users to customers or even "the general public." Each of these roles will have a different expectation for the services they consume: for a corporate user "robustness" might be essential, while for someone in the general public the level to which the service can be integrated (for example, into Facebook) might be more important.

Multi-Headed User Experiences

The customer experience for the future appears to be multi-headed. There will be a diversity of software and services for the various channels and devices – and the user experience will be tuned to the channel and the interaction – whether it be a mobile device, a TV, a PC or the rich web. And probably the best example of this is the email experience Microsoft delivers to its customers today around Exchange. A user could find the richest experience through Outlook; for a more casual experience, a user with a browser could also use Outlook Web Access, and a user could use Outlook on a variety of

mobile and other devices. A user plowing through a lot of email is more likely to use Outlook. If the user is on an airplane trying to catch up, that user will most likely only use Outlook. But if the user is doing some casual email, or is at an internet kiosk, that user is more likely to use Outlook Web Access. And a user on the go can use the most convenient available device to access the same email.

Business Implications

IT organizations of all sizes and from all industry sectors are looking for a model of IT usage to support their wide spectrum of user profiles and user populations, and a spectrum of available application services is promising the ability to meet this need. Organizations are seeing the potential of being able to provide the right levels of service to their entire range of IT users in a dynamic and agile fashion; that is the ability to provide a new level of Differentiated IT. Businesses are thinking in terms of their "IT portfolio" – a portfolio of capabilities that they want to intentionally partition across both on-premises and cloud-based software.

7.5 Conclusion

The IT industry has historically been defined by a sequence of inflection points in the way consumers and businesses benefit from computing, and we are in the midst of another momentous shift – a services transformation.

Software as a Service (SaaS) is fundamentally about service delivery – changing how we think about both deployment and delivery of new software applications. Many of the core assumptions and constraints in the conventional approaches to software deployment and delivery are being challenged and overthrown with this inflection point in service delivery.

Service-Oriented Architecture (SOA) is about the harmonization of multiple systems and services – and fundamentally about service federation and service composition. Many of the basic assumptions about applications have been challenged with the emergence of SOA. The notion of an application as a static entity has been replaced by the notion of an application as a dynamic composition of services, often directed by the end user.

Web 2.0 is about the social and collaborative experiences made possible through services on the cloud, and about their monetization. Many of the core assumptions about the user experience and monetization have been overthrown by the emergence of the Web 2.0 model.

Together, SaaS, SOA and Web 2.0 are converging to create a new software architecture model – a model of Software + Services. This model is based on the premise that the harmonization of on-premises software and cloud-based services will be superior to either of those approaches in isolation. As we move to software interaction through a broader mix of digital devices and form factors, the "multi-headed" experience will become the default user scenario for both consumers and business users. Being able to optimize the mix of software and services gives IT the visibility and control to understand what's happening both inside and outside the corporate network, as well as the necessary flexibility in intentionally partitioning which capabilities are best delivered on-premises versus in the cloud. Software + Services will ultimately enable business to have the optimal portfolio of capabilities to meet the unique needs of each and every individual user.

The social and inherently cross-boundary nature of collaboration drives the need for such a user-focused architecture that can quickly deliver highly useable and flexible support for collaboration. Self provisioning and quick response to new collaboration partners are essential. When information and activities need to cross borders, the technology needs to support it smoothly, driving towards this architecture where all sorts of services can be combined into one portfolio that the user can pick and choose from. Also, when organizations are looking to more extensively collaborate and combine their services to a new offering to the market, the integration of IT needs a pragmatic approach with the ability to make strategic decisions about "who does what"; the essence of SaaS and Software + Services.

Case: ITAGroup Leaps Into the World of Collaboration

Need to Share Intellectual Property Spurs Move

If there were ever a company ideally suited to benefit from collaboration technology, it would be ITAGroup. Until now, the expert in people performance management has relied on the rudimentary internal collaboration capabilities built into the Microsoft Office suite – not well suited for such a dynamic, team-oriented organization.

Given the nature of ITAGroup's $200+ million-a-year business, the lack of a collaborative environment has been a glaring hole in its quest for greater productivity. In its role helping clients establish and administer sales, employee and channel performance improvement programs, ITAGroup assembles teams of people plucked from six different functional areas to support programs that will run at least a year. Each team must coordinate skills ranging from program development and marketing communications to technology support and client interaction. Plus, an internal survey found that, on average, ITAGroup employees work on 6 teams at a time, and up to 20 during the course of a year.

Without an effective collaboration platform, managing so many variables has been a challenge. Communication has been handled via email, resulting in attachments at varying stages of development being scattered among multiple inboxes, and choking storage resources. Additionally, the lack of a standardized methodology for storing critical data has made finding information nearly impossible. "The biggest challenge we faced was effectively bringing new team members into a project," says John Rose, vice president of information technology. "We needed to be able to share information, ideas and documents more easily."

Good Technology + Employee Buy-In = Faster Path to Success

ITAGroup believes it has found the answer in the form of Microsoft SharePoint Server 2007. SharePoint features an interface that's familiar to anyone accustomed to working in Windows. It's easy to set up a collaborative site, it has powerful search capabilities embedded in it, and it can take all that scattered information from email inboxes and desktop file systems and make it easily discoverable to anyone with permission to access it.

ITAGroup is in the midst of a company-wide rollout of the technology, with the first collaborative elements introduced to all employees in January 2009. The company's intranet is running on SharePoint, where it's storing corporate data such as ISO documentation and employee information. A team has been working with consultants from Sogeti to implement an out-of-the-box SharePoint environment that's requiring less than a $400,000 investment over 3 years.

But, as anyone who's overseen a collaboration deployment can attest, merely acquiring technology – no matter how well suited it is to the job at hand – is only half the battle. Bringing people up to speed on the new tools, showing them how to find information, and work in tandem more effectively takes time. "Change is never easy," says Rose. "But we know that a gradual implementation, progressively adding features and functionality, will ease the transition and build excitement. The result is adoption of an improved collaboration environment, which will ultimately result in a better company." Rose has been encouraged to hear reports that many SharePoint customers who experience some initial frustration adjusting to the technology, soon see the technology as a can't-live-without-it tool.

Getting the Most out of SharePoint: Simplicity Breeds Momentum

Advancing SharePoint to that status, however, requires employees get behind the technology. And Rose says he's learned that when it comes to a collaboration environment, marketing and positive reinforcement of the technology is important. To make a tool like SharePoint really work, employees have to know about it, and they have to be convinced to use it. To that end, Rose says it's critical to keep things simple, even if SharePoint has myriad capabilities that can be rolled out at once. Things have to remain simple.

Once the company builds the momentum it needs, the anticipated benefits of SharePoint run the gamut. Rose expects it to spur big savings by simply cutting the amount of time employees spend searching. He also believes that the combination of more timely information and faster responses will lead to improved customer satisfaction. That satisfaction figures to rise further a year or so down the line, when ITAGroup hopes to extend the SharePoint capabilities to an extranet that will enable clients to log in and approve copy or artwork, access workflows, or simply get the latest data on their various performance improvement programs.

Perhaps most importantly, SharePoint will gradually help lower the information sharing walls that have existed between ITAGroup's teams and team members. And with everyone on the same page, management will be able to think outside the box more than ever, armed with a tool that can evolve to make employees' jobs easier.

8 Social Computing for Business

8.1 Introduction[1]

We have been looking at markets, the concepts behind collaboration and cloud computing. We have explored the anatomy and success criteria of collaboration, and we have looked at a model of a mix of Software + Services that gives us the flexibility needed to achieve it all. In this chapter we will discuss more scenarios in which Web 2.0 technologies and the model of Software + Services can be used inside organizations. The areas and scenarios discussed are also the areas where you can find value, some of which can perhaps even be included in a traditional "business case" for a project. A lot of the scenarios in this chapter revolve around the theme of "A New World of Work."

The New World of Work[2]

In a new world of work, where collaboration, business intelligence and prioritizing scarce time and attention are critical factors for success, the tools that information workers use must evolve in ways that do not add new complexity for people who already feel the pressure of an "always-on" world and ever-rising expectations for productivity. We believe that the way out of this maze is through integration, simplification, and a new breed of software applications and services that manage complexity in the background, and extend human capabilities by automating low-value tasks and helping people make sense of complex data.

– Bill Gates

8.2 The Emergence of Social Computing

In the current conversation economy, we are seeing enormous changes in the way that we publish and consume information on the internet. Rather than simply viewing information on static web pages we are now publishing

1 http://msdn.microsoft.com/en-us/library/bb735306.aspx forms the basis of this chapter. Michael Platt of Microsoft Corporation is the original author of much of the content that is re-used here.

2 http://www.microsoft.com/mscorp/execmail/2005/05-19newworldofwork.mspx.

rich content through blogs and wikis and on photo- and audio- and video-sharing sites. Instead of solely being consumers of pages downloaded from the web, people are now sharing, collaborating and creating new content and entire online communities. Indeed, people are now combining data and content from multiple sources to create their own custom, personalized experiences and applications.

Many of these evolving concepts and capabilities were dubbed "Web 2.0" in a seminal discussion paper by Tim O'Reilly in September 2005.[3] In essence, it is the collective realization that the ability to use the web to write as well as read rich content, along with support for social networking and the rapid spread of broadband access, combines to allow people to interact with the web, online content and one another. At its core this is about fundamentally changing the ways people interact with content, services and with other users to provide a platform for harnessing and promoting collective intelligence.[4]

Wikipedia defines collective intelligence as "shared or group intelligence that emerges from the collaboration and competition of many individuals." People are no longer just passive consumers of content and data; they are active participants, and in many cases they are creators – creating content and interacting with a multitude of services and people. Sometimes referred to as the network effect, this increase in participation, collaboration and in content creation presents new opportunities to involve the end user in deeper and more meaningful ways.

We are only just beginning to see the opportunity for these emerging concepts and capabilities both inside and outside the organization, but it promises to have dramatic and long-lasting impact on business. In the rest of this chapter we will look at more specific scenarios in which technology can be used to be productive in Web 2.0, we will talk about the technology side of the conversation economy, and we will discuss the roles cloud computing and Software + Services play in the space.

3 http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html.
4 http://en.wikipedia.org/wiki/Collective_intelligence.

8.3 Collaboration and Social Computing in the Enterprise

Organizations of all types and sizes from startups to Fortune 100 companies and from all industry verticals have seen the explosive growth on the web of social and community sites in the consumer space, such as MySpace, YouTube and the deluge of Web 2.0 sites. They have seen the response by major web players such as Amazon, eBay, Live and Google and Yahoo! in adding social and community elements, and they have seen the interest and demand that this has created. They are now actively investigating – and in many cases building – new community-based portals and businesses for their own organizations; Web 2.0 is moving into the enterprise.

There are two primary areas in which organizations are interested in using these concepts and capabilities:

- Enterprise 2.0: Inside the organization to improve efficiency and productivity; and
- B2C 2.0: Connecting with customers to improve profitability and customer satisfaction.

The use within organizations is commonly called Enterprise 2.0[5] and is typically the first phase.

Usage to connect to their customers and consumers is similar to Business-to-Customer (B2C) activity but with a social and community basis, and may be termed Business-to-Community or B2C 2.0[6]. Interest in this use of the "community as a customer" is rapidly growing. That is one of the reasons why popular social networks like LinkedIn, Facebook, and MySpace, with all their customer profiles, are worth billions of dollars.

Enterprise 2.0

This is the kind of organization that we described throughout the earlier chapters of this book. It is the enterprise where employees are autonomous and collaborative and where bottom-up initiatives are well valued. Where so-called information workers can be in charge of their own user experience and hence create for themselves a more intuitive and efficient work environment.

5 http://sloanreview.mit.edu/smr/issue/2006/spring/06/.
6 http://msdn.microsoft.com/en-us/library/bb735306.aspx.

Business-to-Community (B2C 2.0)

Businesses of all types and sizes, from startups like Plentyoffish to Fortune 100 companies such as General Electric, have been keen to enter the dialogue with consumers and communities using "2.0" tools. While it is always smart for businesses to keep in touch with potential clients, the necessity in this case is especially critical: it is a matter of survival but it can also be an enormous opportunity.

On the opportunity side, the reasons for this interest and activity in the space are fivefold:

1. **Revenue and growth**
   The opportunity to enhance existing revenue streams and to build completely new revenue streams by utilizing community and social networking capabilities. In particular, the cost containment of the recent past has given way to an interest in the business side in innovation-driven growth and revenue. The rapid growth and innovation in the Web 2.0 space is seen as something that companies want to emulate.
2. **Web-based economies of scale**
   Organizations see that they can dramatically decrease the cost of capital equipment and resources by using a web based delivery model to serve communities of their customers.
3. **Flexible employment models**
   The use of contract and agency staff for delivery allows flexibility and agility. Agency and contract staff can be thought of as another, specialized community and so supported like customers.
4. **Community creation as evangelism and support**
   Customers are the organization's best sales, marketing support and development resource. The creation of communities effectively outsources, at a very reasonable cost, all these cost centers. Indeed, with the inclusion of targeted advertising to the community, the present cost centers potentially become profit centers.
5. **Community leader advantage**
   Community dynamics are such that the first successful community is by far the most powerful, so the organization that owns this community is the one that controls the vertical. For example, MySpace focused on new music bands and created a community in that space which it now effectively dominates, so it has become a major force in the music industry. The converse of this is that if an organization's competitors are first in the community space, they will have a very significant competitive advantage.

To make the concept of "entering the dialogue" a bit more specific, we can explore five particular areas where social computing capabilities can be leveraged in working with customer communities:

1. Innovation and New Product Development
As discussed before, open innovation or crowdsourcing are important trends of the day. A very large percentage of new product ideas and innovations in organizations come from suppliers and customers rather than from in-house labs or R&D organizations. These new product ideas are more likely to be successful as they have come from the end users of the product and are also typically less cost-intensive. Clearly organizations that can build a system to harvest these ideas can benefit from these innovations and derive significant benefits.

The use of social computing based customer and supplier communities as discussion forums and marketing focus groups for new product ideas and incubation is a powerful, simple and cost-effective technique for gathering these ideas. Many organizations are actively investigating the use of community forums and discussion groups to provide new product ideas and uses in the product development process. Indeed it is possible to envisage a program that automatically scans communities for new ideas and sends them to interested parties.

An additional benefit of this community-based innovation and new product development is that the customers have a better understanding of the product or service delivered, as they were involved in its gestation, so the customer uptake of the product is significantly enhanced.

2. Marketing
Probably the best-known application of social computing techniques in organizations is around viral marketing. The examples of community and rich content (such as video) being used to generate and spread buzz about products and services are legion. There are two elements to this viral marketing: initial interest generation and then the viral dissemination. The initial interest generation is best done with the use of innovative image, video and audio content – it is not unusual to get millions of downloads of creative video within hours or days of their release, and ongoing interest in a product can be sustained by having an informational or tutorial element to the content. The dissemination of this material is done by the internet community at large using chat and messaging, email and community forums. Again this

dissemination can be very rapid and widespread. It is not unusual for a new product or engaging video to be passed to millions of people in hours and to reach the mainstream media such as TV or newspapers in days.

There are a couple of caveats about viral marketing. Firstly, the target audience needs to be well understood, and even then the material may not gather community interest and buzz – this is much more an art than a science. Secondly, an organization cannot control the spread or use of materials; the use of viral marketing videos in unanticipated ways by the community is well documented and can cause significant side-effects for an organization.

A great example of a viral video is the movie "The Machine is Us/ing Us"[7] by the famous cultural anthropologist Michael Wesch. This movie explains in a nutshell the whole Web 2.0 concept and how it is changing our society. The video has been viewed more than 8.5 million times.

3. Sales
The cost of sale is normally a non-trivial element of the overall cost of a product or service. In a Business-to-Consumer organization the community can act as the collective salespeople, thereby dramatically reducing the cost of sale, in many cases to nothing. The customers themselves act as spokespeople and salespeople for the organization. There is no need for a high pressure and high expenditure sales organization in community-based businesses, in fact, in many cases it might actually be counter-productive.

4. Support
Support is probably the second most popular area in which social computing techniques are used. Firstly, there is the use of messaging and chat and other collaboration techniques for real-time support of their products and services by organizations. Secondly, there is the use of image capture and video for problem communication and resolution. Finally and most importantly, there is the use of community-based product experts and self help discussion groups. This self-help technique has been shown to work very well in communities such as the shared and open source movement and is a simple and low-cost way of providing very high-quality support. As with most social-based systems, however, the actual operation of these self-help groups is not simple and requires significant thought and expertise.

7 http://www.youtube.com/watch?v=6gmP4nk0EOE.

Support is one of the reasons why Apache and Linux have become so popular. The hard-core community behind these two open source initiatives is famous for its online support. If a problem arises, it is sure to be solved promptly. It is interesting to see that Microsoft picked up on this and has built a vibrant technical support community for their technologies.

5. Training and Education
Probably the least explored application of social computing in the enterprise is for training and education. The on-line availability of high-quality audio and video and other rich media provides a very low-cost and frictionless way of providing training as well as "how to" and other learning materials. This rich content, when integrated with influential subject matter experts and the on-line communities and discussion groups, enables a very powerful environment for education and training.

8.4 Web 2.0

The recent history of the internet has shown some very significant and far-reaching changes. Ten years ago there were no web-sharing sites or applications, merely sites composed of static pages and e-commerce. Organizations had customer-facing websites to connect with internet-savvy consumers and used the internet as a way to market and sell their products. Internal corporate intranets were used mainly as a place to post news and policies in the company portal. More recently, websites have become destinations for communities of users to create and share rich and complex data such as music, images and video, and to discuss and rate that content.

People are no longer just consumers of content and applications; they are participants, creating content and interacting with different services and people. More and more people are creating blogs, contributing to knowledge bases such as *Wikipedia*, and using peer-to-peer (P2P) technologies. Sometimes referred to as the network effect, this increase in participation and content creation presents new opportunities to involve the user in deeper, more meaningful ways.

There has been a huge amount of discussion on what exactly is meant by "Web 2.0." Tim O'Reilly originally defined it as the following:
1. The web as a platform;
2. Harnessing collective intelligence;

3. Data as the next Intel inside;
4. End of the software release cycle;
5. Lightweight programming models;
6. Software above the level of a single device; and
7. Rich user experience.

These can be grouped into three areas:
- The use of the web as a platform;
- The web as a place to read and write rich content; and
- The social and collaborative use of the web.

The Web as a Platform

Web 2.0 systems use the web as a platform, conceptualizing the internet as a huge range of interconnected devices that can provide a new level of rich immersion for the user, an easy-to-use and lightweight programming model for the developer and a rapid and flexible deployment mechanism for the supplier. Web 2.0 uses the web to provide a new perspective for the user, developer and supplier, a new way of thinking about the internet, all of which allows new and creative uses of the internet.

It should be noted that an important concept underpinning all connected systems, which of course includes Web 2.0, is that of a service. A service-based system supports the concept of separation of concerns by the use of loose coupling and concomitant message passing. This loose coupling allows functionality to be created as a service and delivered over a network; so, for example, diary functionality can be provided by a blog engine and be delivered as a service to the end user or blogger over the internet. Software as a Service is this delivery of software functionality over the internet, and it underpins most Web 2.0 systems today.

Looking at the internet as a platform we can see that it has to provide a number of important platform concepts such as device independence, rich and common user interface, a common programming interface and a software deployment and management mechanism:

Software Above the Level of a Single Device
We are very familiar with software on a server providing services to software on a PC (in Windows or in a browser), which then consumes or displays

them. While this is a common and well understood model it does not cover a number of common cases such as peer-to-peer systems or delivery to non-PC devices like music players, phones or navigation devices. We need to have a model that includes these cases and covers a higher level of service than HTTP (the protocol used to transfer the pages of the internet we know and use) to connect them; it needs to address the concepts of a music service such as Napster or a communication service such as Skype. We need to have a model that addresses software above the level of a single device and a single service, but which includes rich, high level services interconnecting a mesh of different device types in a symmetric manner.

Probably the best example of this type of high-level service is in Microsoft's game computer, Xbox Live, where gaming services are supplied between specialist hardware devices working in a peer-to-peer manner. This model is the general-purpose case of service-based computing and is the Software + Services model of computing.

Rich User Experience

The value of rich and immersive user experience has been well understood in the PC world since the advent of Microsoft Windows, and this has been a focus of browser based applications for many years. Standards such as JavaScript and DHTML and technologies such as Flash and Silverlight were introduced as lightweight ways of providing client-side programmability and richer user experiences commonly called "Rich Internet Applications."

It was a true revolution when a web browser was first able to provide this Rich Internet Application functionality. For the first time, web application could approach the experience of "real" desktop applications. Microsoft broke ground in this field by porting the familiar email client Outlook to a webversion that very closely resembles the original. Outlook Web Access (OWA) also used JavaScript and DHTML to provide rich interaction. The collection of technologies used to provide these rich and dynamic browser-based systems has been called Ajax, standing for "Asynchronous JavaScript and XML." Ajax isn't a single technology or even a set of new technologies but rather a set of several technologies being used together in powerful new ways to provide Rich Internet Application functionality. Ajax includes:

- Standards that help styles and presentation (using XHTML and CSS);
- Dynamic display and interaction (using the Document Object Model);
- Data interchange and manipulation (using XML and XSLT);
- Asynchronous data retrieval (using XMLHttpRequest); and
- A programming language (using JavaScript).

Ajax is an important component of most Web 2.0 applications and is providing the ability to create web applications nearly as rich and dynamic as Windows-based applications. Indeed, we are now seeing the advent of Ajax-based applications that can work whilst disconnected from the internet and so provide offline functionality similar to Windows-based clients like Microsoft Outlook.

There are also sets of technology other than Ajax that are increasing the value of user experience in areas such as communications, voice and video. Instant messaging (IM) is heavily used in Web 2.0 applications to provide instant communications, and there is a wide range of agents and delivery options available for IM systems. Voice-over-Internet-Protocol (VoIP) systems allow voice and teleconference communication over the internet as part of the user experience. Finally, the provision of real -time, stored or broadcast video rounds out the client experience.

Recently, technologies like Flash and Silverlight have also been playing a big role in enabling media-rich, interactive user experiences, facilitating sophisticated read-write and streaming scenarios, among others.

The breadth, richness and flexibility provided by these technologies moves the user interface well beyond a dynamic UI to a fully interactive audio and video experience, which provides new and powerful ways for people to interact with systems and with one another that are still to be explored.

Lightweight Programming Models

In Web 2.0 the programming models, concepts and techniques are significantly different from those that have been used before. Whilst they are very heavily service-based and reliant upon the concept of message-passing using Representational State Transfer (REST) protocols, they focus on simplicity and ease of use. This has a number of implications:

- Web 2.0 programming is based on the concept of separation of concern using a loosely coupled, message-passing-based model on top of an internet-based and standard set of communications protocols (http), which is often called REST-ful programming. It implies notions of syndication and composition where services are provided without knowing how or if they are used. This is very different from a conventional tightly coupled, transactional and often object-oriented system. It has a different set of benefits (such as flexibility and speed of implementation) and challenges (such as integrity and management).

- The languages (such as Perl or Iron Python) and the frameworks used are simple and dynamic, which provides a low barrier to entry and re-use and high productivity. The frameworks have built-in support for common design patterns such as Model View Controller (MVC) and methodologies such as Agile. They are quick and easy to pick up, use, and become productive with.
- Web 2.0 applications are inherently composable and compositable; because they are built with lightweight programming models and standards-based services, new applications can be created by composing or "mashing-up" present applications and services. Mashups are where applications and services are composed at the UI; composition is the more general case of services being re-used.

End of Software Release Cycles and Deployment

The platform concepts behind Web 2.0 strike a new balance between the control and administrative ease of centralized systems and the flexibility and user empowerment of distributed systems. Web applications are by nature centrally deployed, so central services can manage applications and entire desktops automatically. Software as a Service builds on this concept to provide the idea of software and services delivery over the internet, and Web 2.0 builds on top of Software as a Service to provide social and content services over a web-based mechanism.

This usage of SaaS by Web 2.0 as a deployment and release methodology provides all the well-known SaaS advantages of simple deployment, minimized management and administration and, probably the most important, instant update and repair. Thus one of the most-touted features of Web 2.0 (and SaaS) is the concept that the system is being constantly updated and enhanced, often in real-time in response to user's requests. Of course, the issue with this perpetual beta that the community needs to come to grips with is what happens when downstream applications rely on services or functionality that the application is providing.

The Read / Write Web

The second important area of Web 2.0 is the focus on data and content, and in particular the ability of people to create and interact with rich content rather than just consuming it. If the original internet provided read access to data, then Web 2.0 is all about providing read and write access to data from

any source. This ability of anyone to create content has caused an explosion of available content from all sources (and of all types of quality). At the same time, it has created a whole new set of issues around vandalism and the integrity of data.

As the bandwidth available to the end user continuously increases, the richness of the content that can be sent over the internet increases. The original internet was all about text, but Web 2.0 started with music and images and moved into voice and video. Now TV and movies are the content areas that are being investigated as part of Web 2.0.

Whilst people and organizations have been searching, uploading and downloading all this explicit data and content on the web they have, all the while, been creating a huge amount of implicit data showing where they are going and what they are doing. This implicit, or attention data, of Web 2.0 can be used to predict future behavior or provide new attention-based features. Of course the collection, storage and use of this implicit data raises challenging questions about ownership, privacy and Intellectual Property (IP).

Another issue with the huge amount of data on the web is finding and navigating it. Search engines use the implicit data to find textual data, but they will not work with audio, image or other binary data. In addition, the search engine often does not have enough contextual information to provide a valid result. In these cases tagging the data becomes a valuable way of assisting with data navigation. Web 2.0 applications use tagging and "tag-clouds" extensively as a way of finding and navigating through the vast amount of data available on the web.

Tag data is data about data, or metadata. One of the major concerns with data and content on the web arises from the lack of consistent standards for metadata and schema. It is impossible to cut and paste something as simple as an address on the web because there is no standard format for addresses. We need to understand the different levels of metadata and have standards for what that metadata is in order to liberate data on the web and, in particular, to allow composite applications to compile data. This standardization of metadata in the Web 2.0 space is similar to the goal of the Microformat effort.

The Social and Collaborative Web

The third key element of Web 2.0 systems is the concept of social networks, community, collaboration and discussion. People naturally want to communicate, share and discuss; this communication is a key part of understanding, learning and creativity. The unique element that Web 2.0 brings is that of social networks and community, which are typically enabled by blogs, discussion groups and wikis. In Web 2.0 the sheer scale and number of people on the internet creates an "architecture of participation" where the interaction between people creates information and systems that get better the more they are used and the more people who use them. This harnessing of the collective intelligence creates systems that have more and better information than any one person could generate; it becomes the wisdom of the crowd.

There are a number of different types of collaboration that can occur in Web 2.0 systems:

- **Content-based**
  This is where groups gather and collaborate around a piece of news or content, typically in a blog or a spaces-type environment.
- **Group-based**
  In group collaboration people gather around an idea or interest such as a hobby and discuss it in discussion forums.
- **Project-based**
  In project-based collaboration groups work together on a common task or project such as a development project, a book, or even something as large as an encyclopedia using wikis.

All three types of collaboration can be used in Web 2.0 systems, and in many cases more than one can be used.

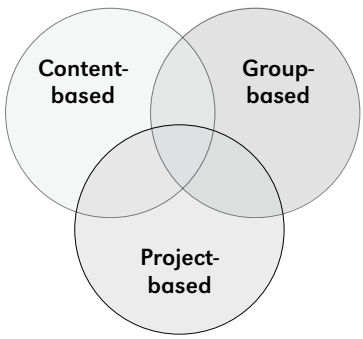


Figure 8.1: Different Types of Web 2.0 Collaboration

8.5 Software + Services Enabling Social Computing

We discussed Software + Services as the realistic hybrid model to use SaaS in combination with on-premises software. It provides a model to create right-sized IT for every user and gives the CIO the power to optimize the IT service portfolio. Software + Services is the model for situating cloud computing in a real business scenario.

If we look at collaboration and how cloud computing could help, there are four main reasons why cloud computing and collaboration is a natural fit:

- Autonomous users want **self provisioning** of tools;
- Both are **crossing boundaries**;
- Collaboration is about being part of the **conversation economy**; plus
- **Traditional reasons**, such as cost or performance.

Self Provisioning

When we want to stimulate bottom-up initiatives, and make units, teams, projects and people more autonomous in creating value for the company, we need to give them tools. Traditionally the IT department designed and supplied the tools, but we have seen that the "prosumer" users demand more control and faster service. Self provisioning and configuration is of the essence here. Cloud computing fits the bill perfectly, since a lot of the services being offered online are extremely easy to provision, try out and configure. Most likely, business users in every organization are already using them.

Crossing Boundaries

The best collaboration is across boundaries: bringing together value from two different sources to create something new and better. This is hard to accomplish when the tools to support the collaboration are strictly controlled from within one organization or unit. If we want to address identity issues, and answer security and ownership questions, a "cloud" tool is usually more suited for this than on-premises, corporately controlled tools.

Conversation Economy

This is an important reason to use the tools from the cloud. If we want to be part of the ongoing conversations, and join the discussions in progress on the internet, then we have to be where the social networks are. And the social networks are "in the cloud." Also, we will start to exploit the benefits of cloud-served solutions. We could, for example, use LinkedIn to update our CRM system, or use YouTube to do recruiting, or scan blogs for trends relevant to our business, *etc*.

Traditional Reasons

The reasons for choosing SaaS, as stated in Chapter 1, are as valid for collaborative tools as they are for other tools. If collaborative tools are becoming part of the IT infrastructure, a SaaS version is most logical. Hosted email solutions are well accepted, as are collaboration portals, messaging software, *etc*.

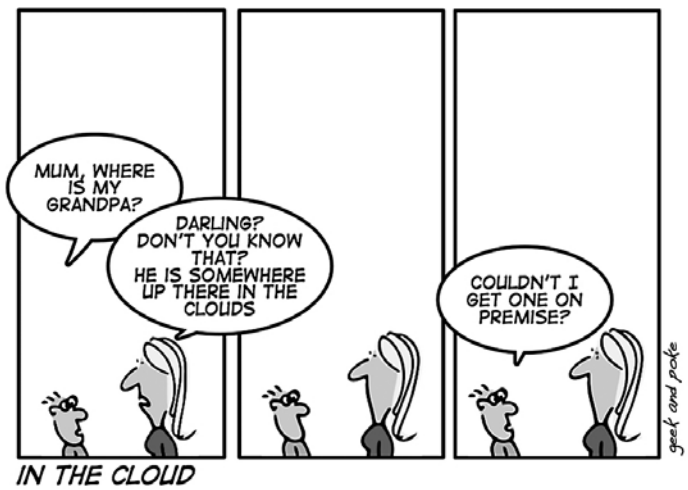


Figure 8.2: In the Cloud[8]

8 http://geekandpoke.typepad.com/geekandpoke/cloud.

8.6 The Web as the Hub

The value of the knowledge found in employees' heads and in the databases and unstructured documents found across the organization has been well known for a while, and there have been many attempts to collect it into knowledge management systems, with varying degrees of success. Clearly when people can quickly find critical information and subject-matter experts, and then work seamlessly together, productivity will soar. This has been difficult to achieve in the past, but new technologies such as dynamic workspaces, wikis, and enterprise searches for people and data may lower the barriers to knowledge management and provide a platform for collaborating on complex and creative tasks.

As we noted however, the real barrier to knowledge management is around social and value issues in organizations rather than technical ones. These are not addressed by the technologies per se and hence the expectations from the technologies themselves should be tempered with the right investments across people and processes.

8.7 In Conclusion – Where Do We Go from Here

The most appealing and potentially most rewarding uses of emerging collaboration and social computing techniques in the enterprise are in the customer-facing areas of organizations. The entire customer relationship management cycle will be transformed by the tools and techniques that are in common use in the consumer space. In marketing, the opportunity to exploit rich, interactive media and to enable a new world of digital customer intimacy through wikis, blogs and online communities will provide new ways of reaching out to and engaging with potential customers. In customer support, the use of video and other rich media to assist with problem resolution, and the use of online communities towards self-service-based models promises to create entirely new models and frameworks for support.

Beyond the customer-facing business capabilities, it is product innovation where customer involvement and participation in product design and development using blogs, wikis, and discussion forums is heralding fundamental shifts in what is commonly thought of as the co-creation of innovation. The other business domain that has the potential to benefit from these tech-

niques is training and mentorship, where the use of rich media, messaging, and chat and other collaboration capabilities has considerable potential.

Overall, the use of new and emerging social computing and collaboration capabilities in the enterprise, enabled by a platform of on-premises software + cloud-based services, promises to have profound and far reaching effects on how organizations function, and create fundamentally new and powerful ways of innovating, marketing and selling to, and delighting customers.

Case: UVIT Embracing Collaborative Technology to Benefit from Recent Merger

Univé and VGZ-IZA-TRIAS are all active in the insurance business. Univé is an all-insurance company; the others focus on health insurance. On January 1, 2007, the companies officially merged into a new company with the temporary name *UVIT*. (For the benefit of the readers we will use the temporary name throughout this case. The new name will be announced at the end of 2009.) The core business is to provide health insurance coverage for 4.3 million people – a quarter of the Dutch population. Their other (non-health) insurance products cover 800,000 insured. This makes UVIT one of the largest insurance companies in The Netherlands.

After the merger, the companies started a centralization process. The plan is to reduce the number of office locations from 17 to 5. One of these 5 locations will be the new headquarters in Arnhem, which is scheduled to open in September 2009. This office has a completely different interior design. The architects of the building have designed the office with a limited number of floors, leading to a very open work atmosphere.

Merger as a Time for New Opportunities

According to Mr. Jo Knippenberg, CIO at UVIT, the merger offers an ideal time to reflect. It is a moment to closely examine the existing organizations and think about what the new organization will look like after the merger. It is a time to zoom in on the details, when you can look at what went wrong and what went right in the past, and then take these lessons into account when developing the future organization.

The merger offers a "a unique opportunity to create a new setting. It is a moment to think about how people work, how they collaborate with people inside and outside of the organization, and how technology can help. How do you forge all these elements together to form something that contributes to the greater good: to your clients, your prospects, to your relations?"

Challenges in Collaboration and Corporate Image

Mr. Knippenberg faced a couple of challenges in daily practice during and after the merger and subsequent reorganization. The first challenge that arose during the merger process itself was how to best support communication, because without communication there is no collaboration, and without collaboration you essentially do not have a unified company. A closely related question was how to stimulate and enable the employees to create effective collaborations among themselves. How do you make sure everybody has access to the right information, in the correct form, at the right time and the right location?

This, of course, is not only relevant for employees but just as much for third parties. The new possibilities here are way beyond the patterns used in traditional outsourc-

ing. New forms of collaboration can emerge as the result of the use of new technologies and tools. It could very well be that "the party that is best able to collaborate with his competitor, is the party best positioned to determine the future".
Another challenge that UVIT is trying to solve in the process of the merger is how to fix the problems with the corporate image. Traditionally, an insurance company is not a "sexy" company to work for, rather dusty and stuffy instead. This poses challenges whey trying to recruit new employees, since you also want to attract good people and young talent. They represent the future of business. How do you create an environment, a workplace where these people feel at home?

The New Organization

The big question of course was how to respond to the challenges above. One of the actions after the merger was to reduce the number of offices. Of the 17, only 5 remained. The new headquarters was designed to fit a completely new philosophy. As a departure from the old situation, people don't have fixed offices anymore but will be equipped with laptops and mobile phones. The idea is to create a more open and flexible working environment, offering new options in how to work and collaborate.
Next to this upcoming big-bang change, other modifications have been made. These changes were first implemented with a small group of people before addressing the larger worker population. First see if the experience is satisfactory, before implementing on a larger scale.
As an example, currently people are using Microsoft's Live Office Communications Server product. This product can show the status of people (free/busy), which sometimes produces resistance. Employees sometimes see it as "Big Brother is Watching You." Use of this function is voluntary and not required by the company. Experience shows that groups start using it whenever they are ready for it. If one sheep leaps over the ditch, others will follow. And greater adoption immediately leads to new questions. Why would we only use Live Messenger inside our company and not directly with our customers and suppliers?
Where Communication Server saw slow gradual adoption, Microsoft Office SharePoint Server was immediately more widely adopted. One of the most interesting consequences is that during regular meetings attendees no longer use paper. Meeting minutes and notes are directly recorded in SharePoint. Employees, including those who could not attend, can read back the notes immediately after the meeting. Here too, the process of adoption is a gradual one. It has to become part of the normal way to do your job. "On the one hand, this of course takes some training; on the other hand, it's a toolbox with a variety of tools from which employees have to select the right ones themselves."

Social Networks Build the Organization

From the commercial side of UVIT there was a growing demand for Facebook-like applications. At this point, UVIT still maintained a strictly controlled environment where it was not possible to use all sorts of applications available on the web. To meet the demands, a new organizational mindset would be needed. Such radical changes in policy are more or less prescribed by the outside world. UVIT wants to find a way to accommodate those kinds of options, but this is still undiscovered terrain. Control versus freedom: what is the wise course? UVIT is currently in an exploratory phase when it comes to these issues.

Meanwhile, a special UVIT social network was born and is being used frequently by a small group within the IT department of the company. Every employee is responsible for keeping his or her profile up to date with relevant information and added value to the company. Using someone's profile, you can directly explore the relations between colleagues. Who is close to whom? Who is his or her boss? Who is the boss of the boss?

In the old days, we needed all kinds of organizational diagrams. This is no longer necessary. The hierarchy has become self-maintained. A new employee joins the organization via his or her profile and can immediately contribute. New employees are also immediately part of the organization. An organization is very dynamic. The organizational movement of people is a dynamic in itself, and this social networking tool is great way to gain insight into this dynamic.

"Technology and opportunities happen to enter your life. The same happens to your company. As a company, you have two options: you resist or you embrace. At UVIT, the latter obviously was the case."

Trust Means Everything

UVIT is very aware that only providing the hardware and software will not make a new company. To create a new firm the whole concept has to become part of the DNA of the employees. It is a cultural thing, not something ordered by the top management, but embraced by the people on the work floor.

"Trust is of the essence in this transformational process. Without trust none of the things we have envisioned will happen. We have to earn the trust of our employees. Both employees and management have to trust each other, trust that we are building the new company together. Trust is one of the key factors of our new emerging corporate culture."

9 Fourteen Questions to Guide the Revolution

9.1 Introduction

Throughout this book, we have been promoting a new way of looking at your organization, of creating bottom-up management and better supporting cross-boundary collaboration by using Software as a Service. All bundled up, it amounts to nothing less than a revolution in the way you do business and the way you support business with IT. This chapter will help you keep a cool head by providing you with fourteen questions to continually ask in order to keep the revolution pragmatic and to facilitate any initiative that will help to achieve your goals. Fourteen questions to keep in mind to prevent being swept away by hype.

Most of the answers to these questions will depend very much on your situation, and on the specific project or challenge you are trying to address. Still, we can sketch certain elements that should be considered when answering these questions.

Questioning Evangelists

The IT industry is composed of a myriad of vendors and service providers, each offering their own value and point of view. Trying to convince you of abilities, and optimistic about the future, they will offer to solve all your problems using the latest tool or insight. So what do you ask when a vendor talks about a new collaboration solution? What do you say when someone from the IT department stops by your desk to talk enthusiastically about the newest project regarding wikis or SharePoint? You can use this list of questions to keep your feet on the ground. Ask the questions below and listen carefully to the answers you get and whether the important points are covered.

If you are not an IT manager but a provider or someone inside the organization who wants to see changes in the way collaboration is performed, this list will help you prepare the answers you will need to convince and involve

others. You will have to know the answers since the questions will be asked eventually, even if not at first.

The questions and conceptual answers are based on frequently occurring business-IT alignment issues. They are distilled from failed and successful collaborations or SaaS projects and from the personal experiences of people working in the collaboration or SaaS space. Some relate to collaboration specifically, while others are SaaS-related.

9.2 The Fourteen Questions to Guide the Revolution

1. What's what?
2. Who's collaborating?
3. Why collaborate?
4. What's wrong with email?
5. Is technology all we need?
6. When is the next version due?
7. What does it cost?
8. How does this integrate?
9. Is it secure?
10. Where do I start?
11. What is our competitive advantage?
12. What boundaries are we crossing?
13. As a service? Not as a service? Mixing Software + Services?
14. When have I won?

1. What's What?

What does collaboration mean? What is "cloud"? And SaaS and S+S? What do we mean with all the terms? Can we agree on terminology?

Thanks to the state of marketing and the chatty and dynamic nature of the internet, numerous interpretations will surface for anything new. Consequently, an essential part of any project these days will be to examine the concepts, assumptions and terminology used. What do the different partners who are in conversation to create strategy understand the terms to mean? What definitions and associations do people use when talking about the topic? Is collaboration something focused on people or focused on corporate

relations? Is cloud something cool and user-focused or is it technical infrastructure? You cannot expect two people to understand a term exactly the same way unless they have talked about it. As we have seen, even the term "collaboration" can cover anything from business-to-business platforms to email, document sharing or conference-call solutions.

To create this shared understanding of the concepts and terminology, a brainstorming session, a workshop or ongoing conversation can be very useful. Experience tells us that people-to-people contact works better than reading a website or one person defining meaning for everybody. This book, a website or an external expert can effectively provide the starting point for your own discussions.

2. Who's Collaborating?

Who are they? Where are they? What kind of people? Are they from our department? Are they only IT people? Who's collaborating with whom? Are they from another company? In what time zone are they? What language do they speak? Who's managing them?

Traditionally, collaboration is seen as something "between colleagues" or even "between people working in one project." As we have shown, collaboration is a much wider field, addressing all interactions between people (or even companies), crossing organizational and cultural boundaries.

The question of "who" is collaborating will give you insight into the challenges you will or will not face when creating a collaborative culture. Looking beyond job titles or department names and really examining the people and their characteristics gives you an idea of what you will run into in trying to stimulate or enhance their collaboration.

Once you have established whether the people belong to one organization or work across organizational boundaries, you will be able to look into the matters of provisioning, ownership, and confidentiality.

What to look for in an answer: in trying to formulate an answer to this question, talk about which people will collaborate, across which boundaries, and what kind of people they are (technical, business, older or newer generations, *etc.*). A good way to define the different collaborations and see who

is involved is to create scenarios: story-like illustrations that describe "a day in the life" of the different audiences.

Another way to find and define the different collaborations is to make use of existing technologies. Tools are available that help you explore your (social) network at the push of a button. The result of this network crawl can then be used to visualize the different kinds of relationships that exist inside and outside your company. The results will surprise you. Some people within your organization may play pivotal roles as community leaders, of which you weren't aware before.

3. Why Collaborate?

Why would they want to collaborate? Why do we want them to collaborate? Are they already collaborating? What's in it for me? What's in it for them?

People collaborate, by themselves, automatically. They will seek help, delegate tasks and look for contributions from others. When addressing collaboration from a corporate view, the question should be asked at these three levels:

1. Why do we need to address collaboration from a business perspective? What will be the corporate gain for addressing it across the enterprise?
2. What's the benefit from a team-perspective of better collaboration? What will get the project manager or team leader excited about this initiative?
3. What will motivate an individual to collaborate differently? What's in it for the individual user?

If you are missing one of these levels, it will make the adoption of new ways of collaboration problematic. The "goals" you are looking for with these questions can have the form of real business cases: for example, saving time and money that is currently wasted on ineffective collaborations, or increasing the quality of work in an administrative environment through improved communications and response to anomalies. Goals can also be more indirect: helping recruit and retain people by making their daily activities more fun and engaging, thus creating a better work environment and better knowledge retention leading to (ultimately) some higher business goals. The cascade of goals must be rooted in reality, preferably confirmed by the actual people who will be impacted.

As we have learned from Open Innovation (or "Crowdsourcing"), at the individual level the drivers for collaboration can be very business-like (money, efficiency in achieving goals, doing a better job) or very personal (peer status, social interaction, curiosity).

Any answer talks about the goals at the different levels, how they strengthen each other and how they ultimately contribute to explicit corporate goals. Every good answer will also include a personal answer for the person asking the question: and what's in it for you personally is ….

4. What's Wrong With Email?

Why has email worked so far? Will any new solution be better than email? Why? Will people stop using email? Do you still use email?

Anyone coming in to talk about new ways of collaborating will need to have a vision of how email fits in the picture. If email remains the preferred medium, alternatives will never reach full acceptance and maturity. As an analogy, if we were to give people bicycles but they still wanted to keep their feet touching the ground all the time – because they always have – we would not gain any speed by distributing bikes (if anything, it would slow people down). The same goes for the introduction of better support for collaboration: the advantage must be demonstrated, tried and proven to be a true advantage over email. Document creation in an online environment is much more efficient then sending links, emails and keeping multiple copies, yet only when this is shown in practice can it convince people to stop using email for this purpose.

Email itself has been too good for its own good. Its ease of use and wide adoption have made it the burden of present-day working life for many people. There are now even special courses in how to handle email efficiently! In essence, email is an old concept, ported to new technology; the paper letter, replaced by the fax, then by email still sticks to an old distribution model. You write something, address it, post it, let it go, and wait for someone to respond – or just hope it all works out, depending on the kind of message. More advanced solutions, as an add-on to email, have been around for a long time: project management tools, delegating tasks and reporting are examples found in most present-day email tools. Yet the actual use of these features is very limited, and they are hardly ever used correctly and to full advantage.

Not because the features aren't useful, but because nobody ever explained them, or people never "got used to them," or there was no corporate or team advantage and thus no real support was given to implementing the features.

A different way of looking at email is needed in order to move forward. By asking this question repeatedly you can begin to more sharply define how any new solution can and should be used.

An answer talks about the current role and use of email in your organization, perhaps the problems of email with regard to process control, versioning, knowledge management, governance, *etc.* It will talk about how different solutions will take chunks out of everyone's email load, leaving email as a minority medium used only where the other tools and communication channels do not suffice.

5. Is Technology All We Need?

What else needs to be done? What needs to change? What does your solution NOT address? How much should we spend besides this solution to get the right results? What is the most difficult part?

If a vendor or service provider states that collaboration will be greatly improved using a piece of software or a service in the cloud, perhaps sticking to the "build it and they will come" adage, it clearly shows an incomplete perspective. A tool or service can definitely help, but, as we have demonstrated, it is only a minor part in the larger effort to change how people work and how we provision IT support for it. Creating a strategy that is founded (and funded) on the business side of an organization, with a practical approach to delivering short-term visible results, would be the ideal combination. A strategy would also include statements as to how to anchor the collaboration strategy in the organization: who's the owner, what are the activities that we are trying to improve or support, and how will this evolve over time.

What to look for in an answer: it will talk about the role and impact of the tool or the service, the architecture (how the tool or service will fit in an ever-changing environment), the people (usage) and the change that is needed in culture and management.

6. When Is the Next Version Due?

Is this a stable solution? How long before we need to change this to the next version? What will be next? Will this work in ten years' time? Can we radically change business processes and structure and still use it?

One lesson from the past is that we can always expect change. Our vendors will keep offering new features and solutions, but even more importantly, our business-environment will keep changing rapidly. In a globalized world, business is changing at *real-time* speed. Especially in the SaaS world, versioning and upgrades are a continuous process.

Currently it is hard to change to a different set of tools: user and developer training, new licensing costs and other investments have to be made. Given the certainty that the only thing we can count on is change, we need to plan for change in the IT space, too. We must ensure that either replacing tools with the latest version (or different tools) is extremely cheap and easy or that a particular solution will be able to withstand a lot of change going forward.

Both solutions, "easy to change" and "resistant to change," revolve around the use of standards and the actual design of the tools and services themselves. Also the architecture surrounding the tool or service must be ready for change. When selecting technology, attention to (open) standards, insight into future product roadmaps, or testing changeability can help to prevent getting stuck with any solution. For example, a good way to test the changeability of any solution is to start a proof of concept where a radical change to the configuration has to be made within a minimal timeframe, demonstrating that future investments can be kept low when changes are needed.

Also, it pays to examine the way a vendor or service provider handles changes: is there an open forum discussing features and updates, or is it a closed innovation process? How long are multiple versions supported (if at all)? How accessible is the service provider for feedback and support? All these will give insight into the risk of change: *their* change and *your* risk.

A lot of software available on the internet is in a permanent beta stage. Can your company handle that? In the past most companies waited for the "next version" or "the first service pack" before implementing something. This attitude might not be wise in the now real-time economy.

An answer to this question will show how change will not affect the core elements of a solution, how new needs can be met with the current tool or service. Also backward compatibility, open standards and release planning are part of the answer. Ultimately, the solution should fit your overall IT and business architecture, which in itself of course is also adaptable to change.

7. What Does It Cost?

How are we paying for this? What are the costs over time? What will it cost to abandon this choice in the future? Does this make sense from a financial planning perspective?

SaaS is often sold using the payment model: pay-for-use with little upfront investment. It is often a variable cost, making it attractive to bookkeepers and giving the illusion of being easy to scale down in times of need. In reality, comparing cost is actually hard to do. How do we get the real cost of hosting something on-premises and how do we compare it to renting something as a service, taking into account an uncertain future? When contemplating the model of software and services, and finding the right balance, an honest comparison must be made. Take into account risks, costs of human resources, costs of downtime and ongoing licensing, and usage costs for different provisioning scenarios. In particular, the cost of extra support or unexpected growth in usage can drastically tip the scales in the comparison if a contract is not carefully screened in the course of this comparison.

When estimating cost we look at the contracts of any "as a service" offering and compare it to on-premises numbers and estimates of support, staff, overhead, *etc.* Pay special attention to the cost of scaling and exceptions. A useful method can be to describe several scenarios, then for each scenario estimate the likelihood that it will become reality, and then calculate the cost (as a range).

8. How Does This Integrate?

How does the tool or service fit into my existing IT infrastructure? Are we using the same user database? Is it integrated into my Enterprise Search? How does it impact my content management system? Is it integrated with my email system? What else needs to be done to assure good integration? How do we migrate?

This is one of the hardest questions for any new IT solution, and even more so for functionality provided as a service. Often the simplicity of the solution provided in the cloud will look attractive, but soon there will be a demand from users and management to integrate it with existing systems: perhaps initially for sign-on credentials but quickly also for integration of all kinds of other data, such as client information, stock data or internal financial feeds.

When looking at collaboration services, the need for integration with existing data might not be obvious at first, but soon it will become evident that it is closely tied to information management tools (content management, business intelligence), governance structures (users, rights-management) and existing presentation platforms (websites, portals, desktop environment). The closer systems integrate, the lower the barrier to using the technology and the greater the chances of widespread adoption. A platform that is disconnected from everything else will either slowly die out (due to the difficulty of keeping data in synch with other sources) or it might become the new authority leaving data in other sources more and more unreliable.

Existing basic interfacing standards allow for integration, but beware of solutions needing lots of manual integration: it might make the "as a service" solution more expensive and more difficult to maintain than something installed on-premises.

When talking to vendors or service providers or when selecting a service from the cloud, the options for integrating should be among the most important decision criteria. Over time, as the "cloud" matures, we would expect more and higher level standards to become available, making integration slightly easier.

At the same time, this is also an important question to ask your own IT staff, since their estimate on ease of integration might differ from that of the service provider.

What to look for in the answer: it will demonstrate how the technology fits in with – and makes use of – existing data, it will show how business intelligence and integration of information will help create better interactions between people.

9. Is It Secure?

Will others be able to access my data? Can my employees do things that are bad for our company? Will we run into trouble with the auditors?

This question is brought up most often by people who say that SaaS "will never happen." Because how can we rely on the confidentiality or security of a service running somewhere in the cloud, on physical hardware that is shared with perhaps thousands of unknown others from countries all over the world?

Yet there wasn't much concern when the business world introduced the Blackberry mobile email solution: confidential email flows through servers worldwide without it causing too many worries. In the end it's not just about security, but about trust and service levels: can we trust the service provider to observe the terms of the SLA regarding security (and availability, confidentiality and all the other elements that make up an SLA).

You do need to keep asking this question, perhaps not so much as to prevent SaaS from happening altogether, but to make sure that any SaaS solution you introduce fits corporate policy.

Surprisingly, sometimes the people who are the most notorious detractors can turn into true supporters if engaged early. An auditor will help find solutions to keep an external service conform to auditing rules; a security officer can be engaged to scope an SLA to cover the basics needed to keep new services from compromising corporate security, *etc.*

10. Where Do I Start?

How do I start? How do I manage this change? What are the first steps? How do we maintain progress over time? Is there an easy way in or are you proposing a big bang? How can we be sure every step of the way has value?

As a rule, big bangs don't work. Experience tells us that the best way to improve IT or organizations is to create an active evolution toward a future goal, allowing for many small steps and minor (or even major) detours along the way. Improving collaboration is no different: start small, where the chances of success are largest and a win is likely. Create support among tech-

savvy early adopters but aim for greater "late majority" adoption by the less tech-savvy users by listening to *their* demands and feedback. Start small with a (perhaps self-selected) group of enthusiasts and then spread the initiative using the early adopters as seeds within new groups. The first advances will be in the "easy" category, perhaps only later involving different organizations, time zones, languages, cultures, *etc.*

Also, when trying new ways of collaborating, freedom is key: don't oversystemize the initial solutions but allow for enough freedom to see what works best. If the freedom is essential to the collaboration, it might even be part of the final solution. If the freedom is too much for the later adopters, the early experiences will tell you how and what to formalize. It is important to note that this freedom is not just in the tools and support but even, and especially, in the way the collaboration team is managed. Experiment with different levels of involvement to find what works.

The answer to this question for your organization will talk about the scope, the people and a situation where improved collaboration will provide immediate value to the participants. Expect to think small, to select a small group of people who will start using the new technology. If they are happy with the new technologies, they will automatically become your evangelists who will spread the tool within the organization.

11. What Is Our Competitive Advantage?

What are we doing that competitors aren't doing? What are we doing differently? How is that visible in our IT investments? How is that visible in our systems architecture? How quickly will this competitive advantage erode?

If you are replacing a proprietary solution with a commodity solution, either as software or as a service, you need to ask whether you don't squander your competitive advantage by the move. And vice versa: when looking to find specific solutions for parts of your business that are definitely NOT differentiating you from the competition, it wouldn't make sense to build a custom solution when a commodity is available. Especially when contemplating SaaS solutions, and the levels and methods of customization, a keen eye is needed to define and manage competitive advantage. Most often it's not the tool or service itself that is part of your advantage, but it's the way you use the tool: the processes and configuration that make the end result unique. So if you

are in the market to procure a service that allows for NO custom process and NO configuration, don't expect to beat the competition with it!

As an example, imagine a small web retailer that has thought of a unique way to checkout and pay for online shopping, while a competitor would differentiate on price, assortment, branding, shipping, or some other element. Our web retailer would probably choose to build or configure a specific shopping-cart and checkout solution, while the competitor would be happy to choose one of the many standard shopping-cart services available. While the example is one dimensional, when creating a business-and-IT strategy, these are the choices to be made.

Answer this question by looking at the business strategy and the competition, and translating it to focus on areas within the IT portfolio that are more important than others, that have higher priority than others, and should (probably) be more flexible than others, too.

12. What Boundaries Are We Crossing?

Are we connecting to anybody or anything outside our department or company? Are we crossing internal or external boundaries? What is the rationale behind these boundaries? Where do they come from? Will people object to crossing these boundaries? How can we make it easier to cross?

In business and IT, more often than ever we are crossing boundaries: we are using external resources, we are working with people from other organizations. Be it in a supply-chain collaboration, or in a buyer-vendor relation: we are not simply exchanging money and goods but we're also exchanging information. So when thinking about any project, the specifics that define your interactions with the environment are the ones that ultimately define your company. You ask this question to find the best model for provisioning solutions. You also ask this question to get an idea of how difficult it will be to create or improve collaboration: the more boundaries you are crossing, the more work needs to be done to cross these boundaries. If all people collaborating report to the same manager, it will be easier than if they report to different managers, let alone different companies.

In answering this question, look for a description of well-known explicit boundaries, but also look for implicit or cultural boundaries that might handicap successful collaboration.

13. As a Service? Not As a Service? Mixing Software + Services?

Can't we host our own? Should we host our own? Should everything that we have be as a service? Is there an actual business case for SaaS in this situation? How do you address the insecurities that come with SaaS?

Your instincts might still tell you that, to minimize risk and dependence upon others, owning and hosting everything "in-house" or "on-premises" is still best. The case for providing Software as a Service has been made many times over, yet the reality is that owning IT solutions gives the illusion of greater control. When exploring the right mix between services that are "in the cloud" and services that are owned, maintained and hosted internally, a rational view of costs and risks is essential. Include the actual costs of on-premises people, hardware, licensing and (increasingly) power and compare them to the costs of an off-premises solution. Compare the features of generic solutions with the features of custom created solutions. Compare the risks of downtime and disasters to SLA's that are not met, *etc.*

As mentioned before, any conversation around the "as a service" question will revolve around setting boundaries: What functionality is generic, what is specific to us? It will also talk about the different levels of "as a service": hosting and support on a hardware platform ("servers") is a different level than generic part-solutions ("collaboration portals"), and is different from a business solution or service ("CRM"). The technology-level "services" might be easiest to use, but the business-level services will provide the greater benefit provided they offer the right services needed by your organization.

Finally, keep in mind that the model of "as a service" is also a valuable model for IT departments to use in defining and offering their own "services." The choice then becomes not so much between "as a service" and "not as a service" but rather between "as our own service" and "as someone else's service."

What to look for in the answer: it will take organizational strategy and input as to competitive differentiators to define what to have and what to hire, what to produce and what to procure. The answer will define the boundaries of the organization-specific IT.

14. When Have I Won?

What defines a successful implementation? How can we measure success? What would be the end-goal for this solution? Can we track progress? Who will determine if this was a success? Are there early warning signs of failure we should watch out for?

For any project or initiative, the definition of success is probably half of the success itself. Once we know specifically what we want or need, it becomes easier to get it. Collaboration is an area that is often ventured into without a clear definition of success: "we want to support people, but we can't predict how they will adopt it," or even "We want to install a portal." While the exact usage might be unpredictable, and perhaps even intentionally so, there must be a way to track progress. There must be a way to know if things are evolving in the right direction, or if perhaps corrective action is needed.

The measure of success for any organization will, of course, depend on specific circumstances. At the same time, there should be early signs of change, in the way people work and the tools they use. Some things to look at could be:

- Email is used less;
- When people come to work, they start their portal, tool, collaboration environment before they open their email;
- Users start talking about "their" collaboration portal;
- News and success stories are no longer spread using email but posted in the "right" places; and
- People start experimenting with new additions to the tool, create mashups or start requesting new features.

After the new situation is starting to become "normal," the real business benefits should become visible: better knowledge retention, better responses to exceptions, quicker answers to questions from clients or suppliers, improved success rates on proposals, *etc*. Ideally the signs of success are visible at the personal, team and organizational level.

When answering this, talk about how to track progress, how to correct or stimulate if progress is not as expected. Look for the early signs of success and know how to measure business success.

Case: Toyota Material Handling Europe Sheds Paper Processes for Mobile Collaboration

IT Seizes Opportunity to Establish Collaborative Best Practices

A few short years ago, the service operation at Toyota Material Handling Europe was living in the dark ages, technologically speaking. Toyota Material Handling Europe (TMHE) began operations in 2006 to manage the Toyota and BT materials handling business in Europe. With more than 100 years of combined Toyota and BT experience, they are active in more than 30 European countries.

TMHE provides a complete range of Toyota counterbalanced forklift trucks and BT warehouse equipment, supported by services and added value solutions. TMHE is the European regional organization of Toyota Material Handling Group (TMHG), which is part of Toyota Industries Corporation (TICO), the world leader in materials handling equipment.

That is, service personnel at TMHE were drowning in paper processes. Technicians got their monthly maintenance plans on paper. Then they submitted paper worksheets with feedback on customer calls, and it took back office staff sometimes up to two weeks to update customer histories, invoices and parts replenishment data.

What's more, the processes differed by country. And with 4,800 technicians spread amongst 30 countries, making more then 3.5 million service assignments a year, that meant a lot of unnecessary complexity as the back office was asked to translate widely varying types of forms and data into useable intelligence about customers' maintenance needs.

The technology team looked upon the situation as an opportunity to implement best practices that could help standardize data, introduce a layer of collaboration, and give back office staff and field technicians better access to more up-to-date information. The result would be improved service efficiency, and thus increased service revenue. Because more than 3,300 of the technicians work from vans, mobility was a key consideration.

Team Approach Yields Streamlined Mobile Process

Working with a team of 10 back office staff, service technicians, and IT personnel from Toyota Material Handling, Sogeti consultants joined representatives from Lawson Software and field service automation specialist Intermec in building an integrated solution that today combines a Lawson ERP environment, a web-based interface used by back office staff, and a mobile Intermec application built on Microsoft's .Net framework. That application resides on the 2,200 PDAs that have been deployed and are in use by mobile technicians.

When a customer initiates a call with one of 400 service center personnel and a nearby technician is located, the service dispatcher is able to immediately push information,

such as the customer history and directions, to the customer site, to the technician's PDA. The back office can continue providing the technician with any information he or she needs, such as safety and inspection rules, or even broadcast bulletins to all mobile technicians. Conversely, technicians can communicate directly with the back office to provide information, such as a corrected vehicle identification number, that can be instantly updated throughout the system. (The PDA is also equipped with the diagnostic tools and documentation needed for technicians to troubleshoot.)

When a service call is completed, the PDA is used to capture the customer's signature and submit it electronically, along with the job worksheet, directly to the back office, allowing service center staff to review the job immediately to better ensure quality of service.

System Designed to Combine Standardization and Local Touch

Despite the obvious gains it knew it would achieve in transitioning from paper processes to automated ones, Toyota Material Handling Europe also made sure to take into account the myriad of potential cultural impacts such a project can have, says Bo Sivenius, director of IS promotion. Among the factors considered were:

- how a core process is implemented across operations in multiple countries that are running sometimes widely varying technologies;
- how to standardize forms sufficiently to create uniformity while also leaving room for local customization; and
- how older employees are affected when asked to embrace a new technology.

Solution Delivers Award-Winning Results

The total project – inclusive of a wholesale business process change, extensive education and training for all the technicians, and significant software and hardware purchases – required a substantial, undisclosed investment. It was money well spent, says Sivenius.

"The payoff has been quite good," he says. "We're being perceived as a more innovative, efficient company."

In addition to improved customer satisfaction, Sivenius says the effort has resulted in more accurate information, improved cash flow, increased efficiency among technicians, and a 30% reduction in back office costs. It also has garnered recognition, as the third release of the system was named Best Mobility Solution at Microsoft's .Net Awards in Sweden last year. The fourth release, with updated technology as well as support for additional countries and languages, will go live in the first quarter of 2009.

10 Debunking Collaboration Myths

10.1 Introduction

There has always been collaboration. Our ancestors worked together in their struggle to survive, and their descendants did the same. Up to now, collaboration has always occurred among small bands huddling together in strongholds. Companies, organizations and groups of people act as self-reliant entities in battle with the outside world. After all, there can only be one best.

The internet has, however, brought about a change. The introduction of new technologies has caused small cracks to appear in these bastions. New forms of collaboration have been created by people who are looking beyond their companies' own walls.

This expanded work sphere introduces an extra measure of complexity, as it involves more than just collaboration between people. It also requires collaboration among companies as reciprocating entities that together generate a completely new chain of value. Furthermore, it requires collaboration among computers in the form of mashups and the cloud, for example.

> *The Internet of the future will be suffused with software, information, data archives, and populated with devices, appliances, and people who are interacting with and through this rich fabric.*
>
> – Vint Cerf[1]

Extremely wild rumors are circulating about all these new forms of collaboration. This chapter is intended as an antidote to these myths. Each section will debunk a specific tall tale that is currently making the rounds.

1 http://edition.cnn.com/2008/TECH/11/02/digitalbiz.rfid/.

10.2 The Myths

The Tool Is All You Need

"Make me a community" is a request that companies are frequently heard to make. They think that by simply installing a social tool, such as a wiki, blog or forum, the entire company is immediately transformed, obtaining the stamp of Web 2.0.

In practice, the process runs entirely differently. Tools do not make an organization, people do. The employees have to put these tools to use; they must propagate and spread the underlying ideas.

Companies have a history, a period of existence during which they have succeeded in creating a certain culture, now more or less inscribed in the company's DNA. And this genetic inscription is not so easy to re-write (or overwrite). It has become a feature that distinguishes one company from another.

Therefore, change must occur gradually. It can be stimulated by employing a social tool but must certainly also be reinforced by a small group of people capable of motivating and inspiring other employees to use these applications. Only when the number of users of these tools has reached a certain size, at which time a certain "tipping point" is reached in the organization, only then can this behavioral change be written into the company's chromosomes and, as a result, a new species of company (with a new form of collaboration) be created. It is consequently an evolutionary process and not a revolution.

Humanity was not created in one day. There is 7 million years of evolution inscribed in the human genome.

Must Be Invented Here

Many programmers fall into this trap. Code that is written by another developer and has to be applied to a company's own program never fully satisfies one hundred percent of the requirements. The code must always be tinkered

with in order to make the best possible use of it. The code is made the company's "own," so to speak.

This attitude has been adopted by many companies, even in terms of all the web services that they now use: anything not built by the company's own IT department cannot be any good.

This view is of course incorrect. Hidden behind service providers are often communities of intelligent people attempting to earn their living by means of the service, as incredible as this may sometimes seem. How could such an industry possibly survive if its practitioners were only offering ramshackle services? If such were the case, would they not just be digging their own graves?

In fact, the web runs on trust. Parties throw in their lot together in order to jointly profit from a given situation. As soon as one of the parties harms this online relationship, then the defaulting party will suffer the consequences. The web is especially unforgiving in this regard. It is a big machine that relies on reputation and holds a grudge; thanks to search engines, past indiscretions are remembered forever. Parties must therefore always endeavor to put their best foot forward; failing to do this means that they soon will be stepping into their grave. In order to earn trust, organizations have to be transparent. Show the outside world what you're doing.

It is certainly good to realize that a great many services exist in a permanent beta stage; they are never finished. Millions of people currently depend on online services, for example for email, that have never been officially released from the beta stage of their development. There are often no guarantees.

Data Cannot Be Made Secure (Except Behind a Closed Door)

Many companies are afraid that the internet is not safe. A great deal of money is spent by IT departments on making company computers secure against all kinds of external viruses and other marauding threats from outside. The danger is, however, somewhat of an illusion.

Many employees have complete freedom on their home computers and want similar freedom at their workstations as well. When the IT department does

not cooperate in this regard, then employees are often smart enough to find ways to nevertheless realize their desires.

It would be much better for companies if they schooled their own employees on the dangers of the big bad internet. Every day sees another new article posted on the internet describing how yet another company has allowed sensitive information to leak out. Often, these breaches of security result from the thoughtless actions of company employees. A slight lapse in thinking and information is suddenly available on the street! Companies need to alert all their employees to all types of dangers that risk loss of information. Policy must be geared to this point, and this policy must be embedded in employee minds. As a consequence, security is a continuous process in which companies are constantly training and retraining their employees.

Tools Change People

> *We're seeing an evolutionary change. The people in the next generation who are really going to have the edge are the ones who master the technological skills and also face-to-face skill".*[2]

Recent research has suggested that the internet is causing our brains to function in a completely different manner than the way to which we were accustomed. With increasing frequency, we are basing decisions on right-brain activity; creativity and intuition are becoming progressively more important.

Tools, such as the internet, transform humanity, and humans then modify their tools. The result is a circle from which there is no escape but that may, indeed, be virtuous. It is important for humanity to take the lead in this dance. Without human beings there are no tools. Therefore close and constant examination of human behavior is crucial in order to adapt the tools to meet human needs in the best possible way.

In the near future there will be all kinds of intelligent tools (agents, bots) swarming the internet, tools that are intelligent on their own, tools filled with all kinds of artificial intelligence that will help us. These tools will facilitate our on- and offline collaboration.

2 http://www.reuters.com/article/technologyNews/idUSTRE49Q2YW20081027.

Tools are therefore subordinate to human beings (extensions of man). They are only facilitative and can never be dominant.

Collaboration is Difficult

People need each other in order to achieve certain goals. If we did not band together with other people, we would still all be living in the Stone Age. We would be cowering in holes in the ground in order to escape as much as possible from the various threats of the external world.

People are therefore accustomed to working together, which is not to say that collaboration is easy. Collective action has always been complex, and the internet has only multiplied the degree of complexity. In a previous age, you could look each other square in the eye when making a deal; now, you have to rely on a virtual personality, who might be located on the other side of the world. How do you build up a relationship with such a remote person in order to do business together and realize a shared goal?

Examples from practice, such as the online encyclopedia *Wikipedia*, show how it is possible to work together on the internet and collectively attain results. Such web collaborations make completely different demands on companies and their employees. Instead of closed, they have to be open; organization is no longer top-down, but bottom-up. And consequently, in the year 2009, there is an entire list of traits that employees and companies must now acquire in order to survive.

The section above has already suggested that an entirely new race of humans is emerging and that these new men and women are using their brains differently than their ancestors did. This development is literally and figuratively an evolutionary process. Companies will therefore have to invest in training in order to bring these types of employees to maturity and enable them to realize their full potential.

There Is No Final Solution

Every company is different. What works for one company does not necessarily work for another. In fact, companies can be viewed as a kind of jigsaw puzzle, so to speak. As result of the most recent technology, the pieces form-

ing the puzzle of company profitability can now also come from locations outside the company itself.

Companies must therefore actively be on the lookout for external pieces that fit well with what they already have. One assembly of the jigsaw can result in a picturesque landscape; another might end up as a self portrait, while a third attempt may yield a cubist interplay of lines.

No single solution can be the right one forever. We live in an around-the-clock economy in which people are always capable of contacting each other. The possibility of radical overnight change makes it necessary to constantly re-examine the ways in which companies must operate. And this continuous monitoring of feedback also evolves as it adapts to a type of business organization undergoing constant revision in response to changes in the environment and in anticipation of future developments. All this looping occurring as far as possible in real time!

It Must All Go Online

Mashups and clouds are now making it seem as if everyone just simply has to release everything and publish it on the web. This is of course untrue. Critical information that enables a company to distinguish itself from competitors is typically information that companies want to keep within their own walls. There are, of course, unforeseeable consequences of allowing competitors free access to such information. Commercial distinctiveness is then instantly lost, and a company is robbed of its ability to provide added value. Companies must certainly keep a close eye on their own value chains. Parts of the business process can undoubtedly be easily outsourced. The issue is therefore to identify the element that can be replaced by a service in the cloud.

Making this determination could result in the creation of new value chains extending beyond company walls. In such circumstances, companies must focus on what they do best, outsource things that others do better, and keep an eye on the ecosystem of services on offer. A service that is perfectly good on one day might on any subsequent day be replaced by a still better service from another party. The field in which companies are now operating is so dynamic that they cannot permit themselves the luxury of overlooking any

opportunities. The IT department, in collaboration with the business department, must constantly be looking out for the next environmental change.

It Is All or Nothing

It is best to begin small. A company cannot, of course, transform itself all at once. In just procuring the tools, a company is far from finished its process of adaptation. It is ultimately the company's people who must be changed, along with the associated business culture.

A big bang scenario will only run into resistance. It is much more sensible to follow a gradual approach. Allow the company to first become familiar with a blog or a wiki. When one of these tools is accepted by everyone and people are capable of using the tool on their own, the next tool is then made available.

Be ready in advance to accept the fact that not every tool will be accepted by everyone. If such is the case, don't try to enforce acceptance, but withdraw the tool. Attempt to discover what is causing the resistance; gain consensus and offer a new tool in order to achieve similar results. Tools might be used differently than was envisioned. Don't be scared, let it happen, the results might positively surprise you.

It is a question of trial and error. Web 2.0 might not only transform the heart of the business but also, most assuredly, the hearts and minds of employees.

Collaboration Will Not Work in Old-Fashioned Hierarchies

On the web we can find all kinds of examples in which people collaborate. One of the common myths within all these examples is that they only work within bottom-up organizations. Leaders are no longer needed. The old hierarchies have to die in order to create a true collaborative organization.

Clearly this is not true. Organizations without leaders cannot exist. However, the role of a leader – whom we have implemented within our organizations since the rise of the industrial revolution – has to change. Leaders can no

longer work the old-fashioned way by pushing orders top-down to the working people.

The new leaders must listen to the ideas of the working people. Encourage the people and their ideas. Empower them in order to spread and embed those ideas within the organizations.

Management guru Seth Godin has written a book *Tribes: We Need You to Lead Us*[3] about this subject. From his point of view,

> *Management is about manipulating resources to get a known job done. Leadership, on the other hand, is about creating change that you believe in.*

Linda Dunkel and Christine Arena published a white paper called, "Leading in the Collaborative Organization: How Collaboration Drives Innovation and Value Creation in Today's Corporations."[4] In it they say,

> *Collaboration is not about shifting from command-and-control to coax and cajole. Instead, collaboration is an essential tool for the new kind of business leader – the facilitative leader – one who engages relevant stakeholders in solving problems collaboratively and works to build a more collaborative culture in his or her organization or community.*

The Credit Crunch Will Kill Collaboration

We are now experiencing difficult times. Every country, every organization is facing the fact that the financial crisis has vaporized zillions of dollars. How are we going to survive this disaster?

Organizations now have the choice. Do they stop investing or not? Will they sit on their money and wait for better times or will they invest in innovations, hoping that they will be the new leaders in the near future?

Collaboration within and outside the organization can make a huge difference in these harsh times. By using all kinds of online tools, organizations

3 Seth Godin, *Tribes: We Need You to Lead Us*, Penguin Group, 2008.

4 Dunkel, Linda and Christine Arena, "Leading in the Collaborative Organization: How Collaboration Drives Innovation and Value Creation in Today's Corporations," Interaction Associates, June 2007.

can tap into the collective mind of their customers. Plug in to their knowledge in order to improve products, invent new ones and survive! Collaboration is the killer application for murdering the financial beast!

10.3 Conclusion

In an interview on November 1, 2008, *Wikipedia* founder Jimmy Wales stated that:

> *We're really just at the beginning, still, of collaborative efforts. In video, right now, we're still back in many ways in the Web 1.0 era. If you look at almost everything on YouTube, it's individuals doing videos, either funny cat videos, or drunk girl videos seem to be quite popular there. What we haven't seen yet in video is large-scale collaborative projects.*

And with this observation, Wales hit the nail on the head. Considering the time that has passed since the introduction of the internet as well as the disruptive effect of this new technology on entire industries, it is impossible not to conclude that the impact on our society has been enormous. And the repercussions are only just beginning. Some of the world's most prominent companies online have only existed for less than 10 years!

All of us are standing on the threshold of a fundamental transition. The ways in which we are accustomed to doing business are based on an organizational form created in the industrial revolution, an historical phenomenon that reached its zenith at the end of the eighteenth century. The blessings of the internet have entirely transformed our overall worldview. It is therefore no longer possible for us to continue following the road that we first began travelling back in the seventeenth century. We are at a crossroads but do not precisely know which road to take.

According to Al Gore, the technologies behind the internet can save us all:

> *Now is the time to really move swiftly, to seize these new possibilities and to exploit them... Web 2.0 has to have a purpose. The purpose I would urge as many of you as can take it on, is to repair our relationship with this planet and the imminent danger we face.*

It is therefore not so strange that a large number of horror stories are now cropping up. However, we should not let these ghost stories frighten us. Instead, we need to continue to probe to the very heart of the matter in order to discover the new types of collaboration that the future has in store for us. In this way, we will be able to make use of the emerging new practices in our own companies as quickly and adaptively as possible.

About the Authors

Erik van Ommeren – http://www.linkedin.com/in/erikvanommeren

Erik van Ommeren is responsible for VINT – the International Research Institute of Sogeti in the USA. He is an analyst, public speaker and co-author of the books *SOA for Profit: A Manager's Guide to Success with Service Oriented Architecture* and *Open for Business: Open Source Inspired Innovation*.

Sander Duivestein – http://www.linkedin.com/in/sanderduivestein

Sander Duivestein is a senior analyst at VINT, the International Research Institute of Sogeti. He is also an internet entrepreneur. Prior, Sander was a software architect at Capgemini. He is co-author of the book *Me the Media: Rise of the Conversation Society*.

John deVadoss – http://www.linkedin.com/in/jdevados

John deVadoss leads the Patterns & Practices team at Microsoft. His responsibilities include platform and architecture strategy for the Microsoft application platform and developer tools. He has over 15 years of experience in the software industry and has been at Microsoft for over 10 years.

Clemens Reijnen – http://www.linkedin.com/in/clemensreijnen

Clemens Reijnen is a software architect at Sogeti and was awarded Microsoft Most Valuable Professional (MVP) by Microsoft. Clemens has a broad background in software development and architecture. He also runs a technical blog.

Erik Gunvaldson – http://www.linkedin.com/pub/0/103/558

Erik Gunvaldson is a senior program manager for Microsoft Online Services. He manages the partner, customer, and community programs of Microsoft Online. He has over 20 years of experience in IT.

Index

Collaboration in the Cloud

How Cross-Boundary Collaboration Is Transforming Business

Improving collaboration between people and between organizations is no longer optional if you want to survive in today's hyper-connected business world. Rapid change, unpredictability and the increasingly social nature of the marketplace make collaboration instrumental to your company's ability to differentiate. New ways of collaboration are starting to take place within your company, across value chains and in the individual social domain of your employees. At the same time, new architecture and delivery models are bringing many new collaborative tools within reach of every person in your organization, with or without your knowledge or control. The use of personal email is one example we have learned to address, but how do you respond to personal workspaces, document sharing or instant messaging? More importantly, how does your business benefit from them? On the technology side, a volatile mix of acronyms like SOA (Service-Oriented Architecture), SaaS (Software as a Service) and Web 2.0 is brewing that is drastically changing our view on the role and value of information technology. If left to chance there is little hope for success: you need a strategy.

The new business world that is emerging around us is driven by autonomous, bottom-up organizations where innovation and collaboration are part of the culture. In Value Chain 2.0, it is about quickly establishing combinations that offer value to the marketplace. It is about crossing boundaries and taking the full benefits from cloud computing and anything available as a Service, from platform to complete business solution.

About VINT

VINT is the International Research Institute for the Analysis of New Technology. With VINT, founded in 1994, Sogeti inspires people to create the right strategy for their organization. Using publications, seminars and workshops, VINT engages in a dialogue to explore the business value and imminence of changes in technology and helps bring a sense of reality to the hype of the day. With vision and a broad view of trends, the institute helps you navigate the turbulent waters of organizational change fueled by technology.

Recent research topics have been

- Me the Media:
  The Rise of the Conversation Society
- SOA for Profit:
  A Manager's Guide to Success with
  Service Oriented Architecture
- Open for Business:
  Open Source Inspired Innovation

VINT | Vision • Inspiration • Navigation • Trends

ISBN 978-90-75414-24-0

9789075 414240