

May, 2011

The Knowledge Cloud

“The most profound impact of the 20th century enterprise was in the way we moved workers to where the work was. The most profound impact of the 21st century enterprise will be in the way we move work to where the workers are.”

Redefining the Future of Knowledge Work

By Thomas Koulopoulos



DELPHI
GROUP

300 Brickstone Square, Suite 201
Andover, MA 01810

“Most of our assumptions have outlived their usefulness.”

Marshall McLuhan



We are masters of the supply chain. But we are just starting to understand how to master the Knowledge Chain

From Supply Chain to Knowledge Chain

Consider the following question: “What will drive the greatest achievements of the twenty-first century?” If you are like most people your temptation will be to answer in terms of advances in science, technology, or perhaps medicine. Certainly these are areas where we expect to see enormous change and progress. But what is the underlying force that will drive the next 100 years of innovation and human progress?

It’s a daunting question. Who among us has the ability to see so far ahead as to understand the forces and events that will shape the world 100 years hence. Perhaps an easier question would be to look back and ask, what were the forces that drove humankind’s greatest achievements over the past 200 years?

Although there was no dearth of innovations during the 19th and 20th centuries to pick from, it is still difficult to identify an underlying driver for all of them. Yet through each of these periods there has been one fundamental shift that has propelled commercial, social, and political innovation. It is a subtle shift that we often pay little attention to except when it directly affects us— it’s the shift in how we connect workers with work. Think about it for a minute. Two centuries ago all work was highly localized. Ninety-nine percent of the world’s population lived and died no farther than 100 miles from the place they were born. While there was some commerce based on trade, it was severely limited by the transportation options of the day. The options for workers were pretty much the same. In an era of hard goods, driven by the advent and evolution of factories and manufacturing, this made perfect sense.

Today the complex movement of raw materials, goods, machinery, ideas, and people is a commonplace task, which we take completely

There was a time when companies relied exclusively on their own power plants. But this created countless standards for the dynamos, motors, wiring, voltages, amperages, and machinery. As electric power became pervasive the costs incurred trying to resolve these problems became prohibitive. In fact, many factories began to sell power to local shopkeepers and municipalities in an attempt to shore up an eroding financial proposition. Still, it took decades for electrical grids to take shape across the globe.

However, the more interesting story is not about the advent of utilities and power plants but what happened to the factories that used them. As power utilities came on line, during the 1900s, factories, for the first time in history, did not have to worry about generating and managing power. They could instead focus on what really mattered—innovation. It is no coincidence that innovation surged in the early part of the Twentieth Century.

for granted. We are masters of the supply chain. But we are just starting to understand how to master the Knowledge Chain – the collection of activities involved in packaging and transporting the coordination of knowledge work. This is a daunting task that increasingly represents the bulk of the inefficiency in every industry. If you doubt that, just look at the amount of time and effort you personally devote each day to tracking down the right information, tools, and people to get your work done. We have all become conductors of an immense orchestra whose players and instruments are scattered about the globe. Add to this complexity the looming promise (or is that “the threat”) of living in the Cloud and it becomes clear that knowledge workers just don’t have the right tools to get the job done.

While the Cloud will eliminate many of the economic barriers and increase the convenience and reliability of computing for businesses, it will also radically change the way knowledge workers actually do their work. In other words, if you think it’s hard to manage the knowledge chain today, just wait! We are on the cusp of a revolution as dramatic in its impact on knowledge work as mass production was to manufacturing.

Moving Knowledge Work to the Cloud

The move to the Cloud involves much more than the popular analogy of a utility that just shifts the burden of computing power and data storage from users to a third party.

Unlike electric utilities, which only move power, in the Cloud we are also moving work and all of tools needed to perform it. It is this subtle but profound change that creates the greatest opportunity for the enterprise of the future since it is no longer limited by talent tied to geography.



Unlike electric utilities, which only move power, in the Cloud we are also moving work and all of tools needed to perform it.



However, the movement of work requires us to package up a great deal of scattered and disconnected information, links, applications, rules, regulations, skills, roles and even the workers necessary to perform the work—this is not a trivial matter. Think of the problem in this way. Tools for knowledge work to date have focused exclusively on the process, that is, the sequence, timing, and flow of information. Tools for knowledge work in the future have to focus primarily on the work, that is, the tools, methods, connections, and judgment needed to act on the information.

To address this, a new category of software is evolving that deals specifically with the way we package and transport work in the Cloud. It's called Adaptive Case Management or ACM.

A better analogy for ACM, than that of a utility, is to consider the impact of the Cloud on knowledge work as compared to the impact that the steamship and railroads had on economies in the early 20th Century. Railroads and steamships transported workers, materials and in many cases the fuel, such as coal and oil, needed to grow the global economy and to radically redistribute its population. ACM does much the same for knowledge work; it is the mechanism by which we connect and contain all of the components that go into the complex nature of today's knowledge work and provide a way to collaborate while the work travels across the globe.

The better understand exactly what ACM is, consider the example of a mortgage process, a classic complex knowledge chain. As with most knowledge chains, a mortgage process involves collaborations among a wide group of people who form a loosely connected network of players, including bankers, mortgage brokers, underwriters, investors, credit reporting agencies, inspectors, appraisers, lawyers, real estate brokers, government agencies, administrators, loan

If we were using the analogy of an orchestra to describe knowledge work we would say that every player has the potential to be a conductor – they just don't always have the baton!



officers, processors, assistants, escrow officers, notaries, closers, funders, account executives and, of course, the buyer.

The amount of information that flows through this process is daunting, but so is the intricate set of activities and regulations involved and the complex connections each has to the people who perform the work. If you were to try and map the process you may well end up with a neat and tidy flow chart, but in practice that chart would be close to useless as all of the exceptions, nuances of each situation, and unexpected delays set in. Today all of this knowledge work is coordinated in multiple paper and computer systems such as files folders, faxes, local and remote storage, and directories, which are managed through a combination of automated and manual processes. Items get lost, have to be resubmitted, and reverified. With all of the technology we have to throw at the process, it's no wonder that it still takes most banks 3-4 weeks for a simple mortgage to be written – a time frame that hasn't changed much over three decades!

However, some banks are seeing enormous competitive advantage in speeding this process and reducing errors by using case management to gather, package and orchestrate these myriad components of the knowledge chain into a "case" that progresses through the process with all of the necessary items and links needed to perform the work of writing a mortgage. This means that every knowledge worker in the process has access to all of the information, links, people, and resources they need to get their work done. This is where virtually every solution to knowledge work that we have put in place to date falls short. Unlike industrial era work, knowledge work does not have one process flow, one manager of work, or one way to do the work. In knowledge work every worker has the potential to be a conductor and to redirect work, as needed based on judgment and experience. If we were using the analogy of an orchestra to describe knowledge work

By some estimates 90% of the time and effort in a mortgage process is the coordination of non-task activity.

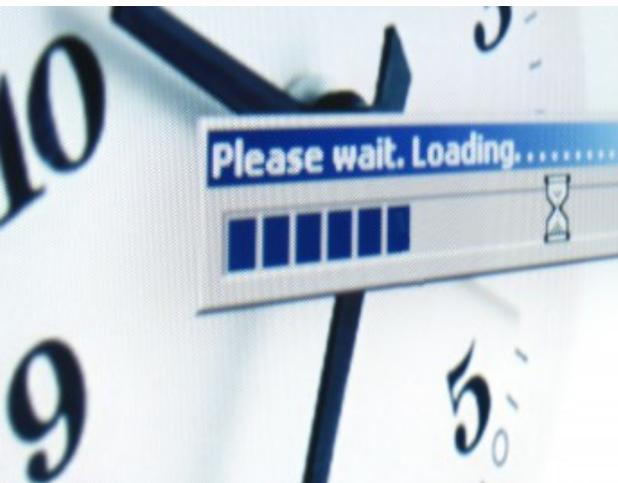
we would say that every player has the potential to be a conductor – they just don't always have the baton!

While this sort of complexity has always been part of the need that information systems were intended to address, the reality has fallen far short. For example, if you look closer at our mortgage process you will find that many of the steps involved use different tools, software applications, networks, content, formats, and methods. Often the work is redirected, sent back, rerouted. Much of the time to process the mortgage ends up being not in the tasks but in manually getting work out of one system and into another. (Just think of how often you have to fill out the same information in multiple forms at a bank or doctor's office.) And just because much of this information is electronic does not mean it all works easily together. By some estimates 90% of the time and effort in a mortgage process is the coordination of this non-task activity. That 90% is the white space in the knowledge chain that has simply not be addressed before the advent of ACM.

By the way, if the problem was limited to the current state of affairs we could probably just continue to deal with these issues. But complexity is not going away. In fact things are going to get much, much worse, to the point where the complexity I just described will crush many processes under the weight of the problem. Here are a few reasons why:

The Increasing Prevalence of Risk and Uncertainty

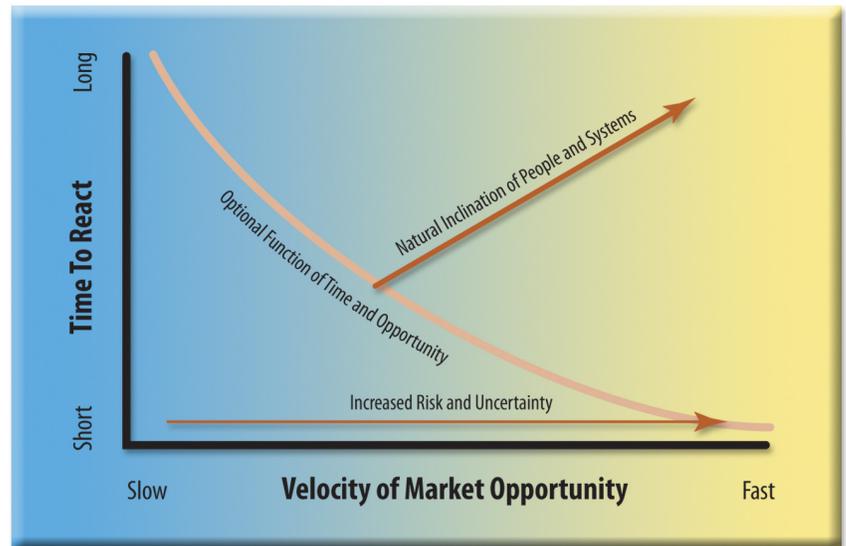
- ▶ Continued Pressure to Cut Costs
- ▶ Increased Transparency and Governance
- ▶ Quantum Increases in the Size of the Global
- ▶ Educated Work Force



As uncertainty increases the duration of each opportunity decreases – what I will call the uncertainty principle.

The Increasing Prevalence of Risk and Uncertainty

The global interconnectedness of markets is creating unprecedented levels of uncertainty and risk. Incidents that could once be contained to a small geography or population now seem to ripple across the globe at light speed. From the near financial meltdown of world economies in 2009 to the effect of the 2011 Japanese Tsunami, we have seen markets react instantly and synchronously. This has a peculiar effect on our behavior and our businesses. Namely, as uncertainty increases the duration of each opportunity decreases – what I will call the uncertainty principle. Moving in these smaller windows of opportunity means faster coordination within our entire value chain of partners and customers with far better levels of agility and resiliency. The hardwired and often-haphazard nature of many processes does not allow for either. ACM promises to deliver on both by coordinating and delivering work to where it needs to be with all of its relevant resources and connections intact and ready for action



The Uncertainty Principle: As Uncertainty and the Velocity of Market Opportunity Increases the Time to React Decreases. Without ACM Knowledge Work Will Reach a Point Where we Simply Cannot React in The Time Available to Seize the Opportunity.

Cost cutting is like an arms race in which there is always a better weapon system over the next horizon.



Continued Pressure to Cut Costs

The recession of 2008-2010 may have been cyclical, but the associated wave of cost cutting is not an episodic phenomenon. While we may well have triggered renewed attention on the topic through the difficult economic cycle of the last decade, the pressure to run efficient and lean operations will continue to increase as global pressure and competition also increase. Cost cutting is like an arms race in which there is always a better weapon system over the next horizon.

This relentless global cycle of cost cutting will not end soon—even as we proceed through the innovation and investment portion of the economic cycle.

This means that organizations will put every aspect of their processes under intense scrutiny in order to optimize resources and create new efficiencies. If you consider that our mortgage example is just one of countless such instances where processes spend up to 90% of their time in non-task and non-value adding activities it is clear that eliminating as much of this as possible has to be an area of intense focus. ACM addresses this directly by creating work product that is always ready to be acted on, requiring little time for additional intervention to search for the right information, tools and methods to get the job done.

Increased Transparency and Governance

The mandate to create transparency plays a critical role in forcing organizations to better define and then shed their noncore activities. In a recent study we conducted we were amazed to find that the vast majority of organizations do not partner or outsource to outside organizations and contractors due primarily to the fact that they

Even more perverse is that some of these same organizations see this lack of “describability” as a competitive advantage, sort of like a secret sauce, that’s a secret even to themselves!



do not believe they adequately understand their processes well enough to describe them! Even more perverse is that some of these same organizations see this lack of “describability” as a competitive advantage, sort of like a secret sauce, that’s a secret even to themselves!

Transparency provides a means of sharing processes with partners; contractors and customers in order to involve each when and where appropriate in order to expedite work. But implicit in this is a better understanding of your processes.

ACM is an ideal way to increase transparency, while also maintaining the right level of security and privacy. For example, in the UK tax authorities have used ACM to create cases for every taxpayer. These cases are available to the taxpayer, employers, financial institutions and the tax authorities. The cases stay with a taxpayer for life and provide a simple and error free collection of the documents, rules, filings, individuals and links to relevant data (for example, sections of the tax code effective when the filing was made). In this way the burden of record keeping is greatly reduced, precision is increased, access to information is simplified, regulations are always linked correctly, time frames are recorded, methods of calculating tax are documented, supporting documentation is archived, and the people or roles involved are all connected to the case. And access to all of this is provided based on the privacy of the information involved. Those who might cringe at the notion of all of this information being in the Cloud should first consider that in a single week alone more than 1,200 laptops are lost or stolen at Los Angeles International Airport. Now think of how many of those laptops have all of this information and much more freely accessible on their hard drives. Security in today’s world of local and portable computing is an illusion.

In this knowledge-based workforce ACM will be as critical to success as plowshares were in the agricultural age.



Quantum Increases in the Size of the Global Educated Work Force

One of the most important benefits of ACM is its ability to provide a reliable platform for collaborative work. While this is important in any situation that involves multiple people and tasks, it is especially important when your workforce spans time zones and cultures. Without everyone in the same place or same time the work product must be able to stand on its own and provide the next person in line with all of the necessary components to get the work done. In many ways the work has to become its own administrator with the intelligence to deal with changes in the process as it flows through the process.

Fueling this mass migration of knowledge work will be a globally concerted effort to educate more of the world's population.

The number of universities in the developing countries of the globe is increasing at an astounding rate. For example, India today has nearly 300 universities and more than 10,000 colleges, a ten-fold increase since the 1950s. Consider that in India alone there are over 500 million people under the age of twenty-five. While only a few of those are today competing in the global marketplace – what the Indian press has dubbed its generation of Zippies – the pool of talent is still enormous and the competition is fierce. Infosys, one of India's largest outsourcers, hires 9,000 employees yearly from more than 1 million applicants. With the estimates of jobs that are being sent overseas already in the tens of thousands each month, it's not hard to imagine the significance of this trend. Across the globe these trends are reflected in a growing pool of talented and capable workers. This will create a massive increase in the number and quality of knowledge workers who will need tools to better share and

A Lesson In Moving Work

Henry Ford understood the power of this concept nearly 100 years ago. Ford did not create new technology or even radically change existing technologies. Rather, his genius lay in a simple change in the movement of work.

In contrast to what most of us are taught in grade school, Ford's innovation was not mass production, nor the principle of interchangeable parts. Both had been in use for at least 100 years prior to the invention of the Tin Lizzie. In fact, Ford did not even create the assembly line. Ransom Eli Olds and the Cadillac Motor Company were already using complex interchangeable parts and assembly lines in their manufacturing processes.

Ford's innovation was so simple as to be overlooked in most history books. His assembly lines moved – work was transported to the worker, not the other way around. The cornerstone principle of the twenty-first-century organization will be that the work, and all of the tools needed to do the work, can be moved to workers – wherever they are. This is not a revolutionary concept when applied on a small scale, but when considered in the context of today's global, information-based economy it directly challenges what is perhaps the most salient feature of modern capitalism and the cornerstone of industrialism: the growth of the centralized enterprise, in which workers came to the work.

collaborate on work across a broad global spectrum of workers. In this knowledge-based workforce ACM will be as critical to success in the knowledge age as plowshares were in the agricultural age.

Surviving and Thriving in Complexity

When you consider the impact that all of this change will have on knowledge work it is difficult to conceive of any knowledge workers maintaining their sanity much less getting work done correctly and effectively. Without ACM providing the superglue and the intelligence to handle the complexity and coordination of knowledge work, business would simply be unable to keep up. In a free market this is not an option. To compete, companies will need to look towards tools such as ACM to allow them to continue accelerating and growing their business while also equipping their workers with the tools they need to be able to continuously innovate.

Imagine that all of these underlying forces are similar to the fault lines on which many of the world's largest cities have been built. We cannot ignore their consequences but it is not an option to move the city. Instead we have to build cities and economies that can withstand earthquakes and survive the future. In that same light, we need to build businesses that can apply ACM to grow and thrive in spite of their, and their markets, complexity.



DELPHI
GROUP

300 Brickstone Square, Suite 201
Andover, MA 01810

June 22-23, 2011

ACM
live

The Adaptive
Case Management
Virtual Summit

Featuring the Presentation of the
2011 Global Excellence in
Adaptive Case Management
Awards



Visit the Summit website for full details: www.delphigroup.com/acmlive



Thomas Koulopoulos is Chairman and founder of Delphi Group, a Boston-based think tank that has been providing insight on leading edge trends and technologies for over 20 years. He is also an Executive in Residence at Bentley University and past Executive director of the Babson Center for Business Innovation, and the author of eight books, including his latest *The Innovation Zone*.

About Delphi Group

Delphi Group is a leading provider of business and technology advisory services to Global 2000 organizations. With offices established around the world, Delphi has assisted professionals across disciplines and industries at nearly every major national and global organization and branch of government. Its clients and subscribers include more than half of the Global 2000. All content ©2011 Delphi Group.