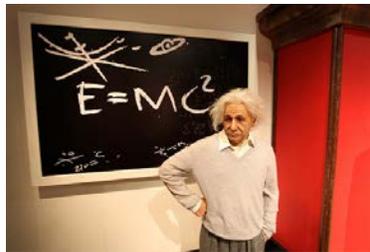Extreme Competition Peter Fingar

Cognitive BPM

In my April 2014 Column, I introduced three game-changing technologies and a huge game changer that will impact the three, cognitive computing. Organizations have a lot to learn about the coming impact of cognitive computing, so we we'll open with an Albert Einstein quote, "Once you stop learning, you start dying."

Cognitive computing will have an enormous impact on the use of data in solving real world problems and for process innovation. The impact on fields like healthcare, education, finance, legal (eDiscovery), manufacturing, logistics and retailing are where the power of technology has the chance to change entire industries. Some industries are likely to be negatively impacted by this type of technology, and many people in these industries will resist change. What the people in these industries need to clearly understand is that with the pace of evolution in technology, change is going to happen and it has the potential to change quickly —exponentially.

Understanding big data has everything to do with the process of discovery, advanced analytics and machine learning solutions that can help people in realizing that data is an asset and the data holds many of the answers to questions that improve industries.

Cognitive Computing uses hundreds of analytics that provide it with capabilities such as natural language processing, text analysis, and knowledge representation and reasoning to ...

- make sense of huge amounts of complex information in split seconds,
- rank answers based on evidence and confidence, and
- learn from its mistakes.

And, of course, this capability is deployed in the cloud and made available as a cognitive service:

In 2011 IBM's Watson had access to 200 million pages of structured and unstructured content consuming four terabytes of disk storage including the full text of Wikipedia, but was not connected to the Internet during the game.

Going beyond Jeopardy! and early uses in medicine, the Watson Engagement Advisor has the potential to bring the era of cognitive systems to the masses. Watson could help transform the way people and organizations interact over the lifetime of their relationships, completely changing the roles of customer service, a strategic Business Process.
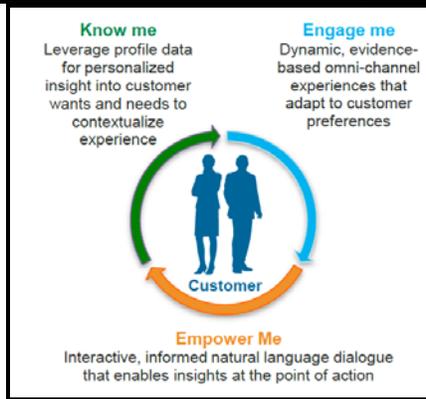
Business Process Management (BPM) will never be the same. Uh oh! What about all those services jobs that make up 85% of employment? With the advent of cognitive computing and the cloud, we've got some really grand challenges at the very foundation of our civilization.
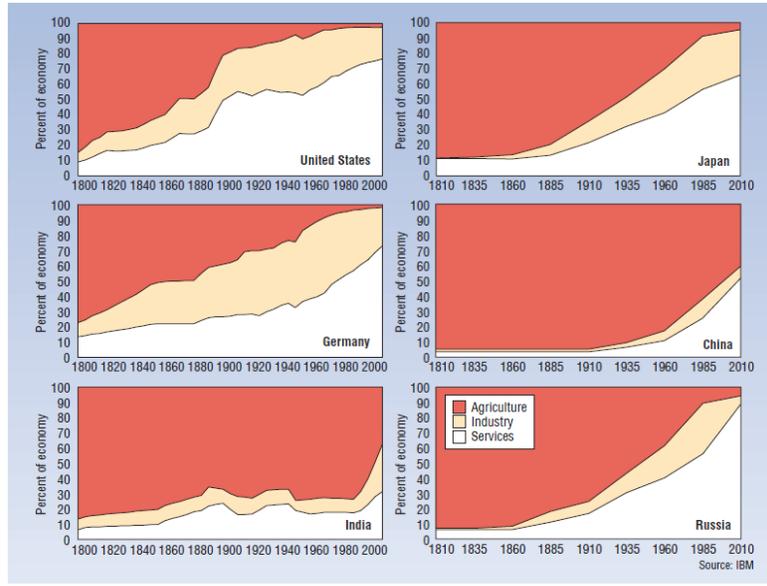
Figure 1. Services represent a growing segment of the developed and developing worlds' economies.

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In today's Digital Pangea where the entire world and 'things' are interconnected, you can no longer just manage your enterprise, but must collaborate across the entire Value Chain. There won't be one cognitive system at your service, there will be many, many COGs (cognitive systems) serving all the companies and customers in your Business Network.
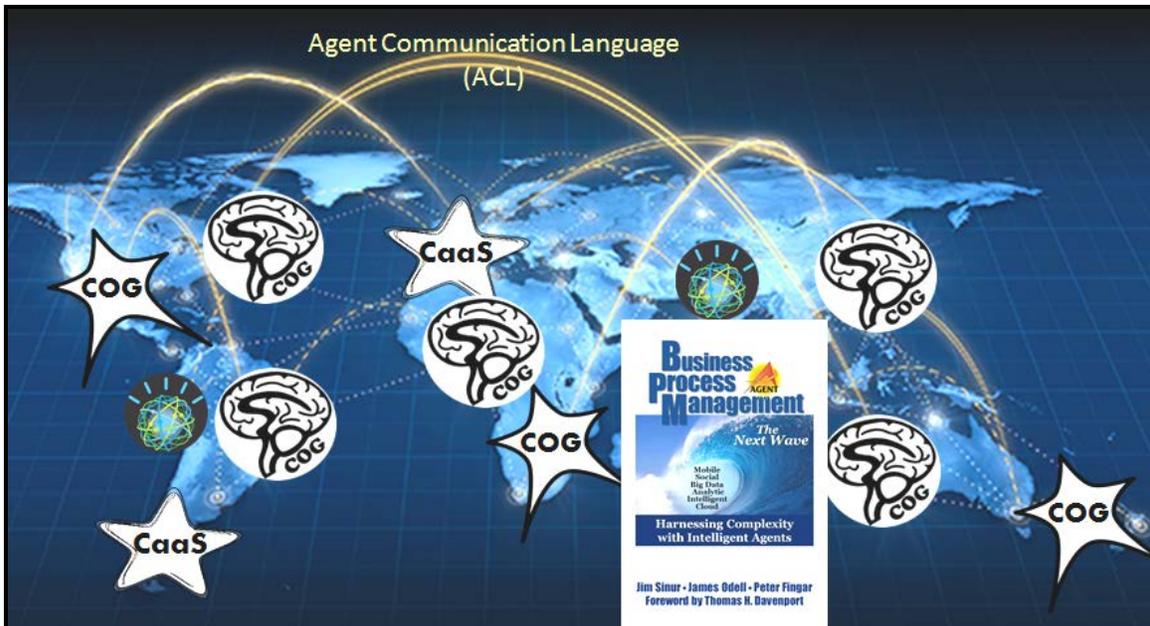
These special purpose COGs will interoperate via an Agent Communication Language (ACL) for multi-agent collaboration and problem solving.

These digital resources won't be limited to office workers in advanced economies. eMarketer expects 4.55 billion people worldwide to use a mobile phone in 2014.

Mobile adoption is slowing, but new users in the developing regions of Asia-Pacific and the Middle East and Africa will drive further increases. Between 2013 and 2017, mobile phone penetration will rise from 61.1% to 69.4% of the global population, according to a new eMarketer report, "Worldwide Mobile Phone Users: H1 2014 Forecast and Comparative Estimates." The global smartphone audience surpassed the 1 billion mark in 2012 and will total 1.75 billion in 2014. It's these billions of people with smartphones, that changes all.


Watch Morgan Freeman: "Global Network's Effects on Humans," Through the Wormhole   https://www.youtube.com/watch?v=mfv7r7nfiks

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Many analysts have come upon the idea that new technology can lead to higher unemployment and rising inequality. The British economist John Maynard Keynes coined the term "technological unemployment" back in the 1930s when he predicted that the displacement of workers by machines. In the early 19th century, power looms introduced during the Industrial Revolution threatened to replace the artisans with less-skilled, low-wage laborers, leaving them without work. In short, what can be done with cognitive computing will be done. The question is "Will you be the doer or the one done in?"

Enter the Luddites, the movement that set out to smash the power looms.
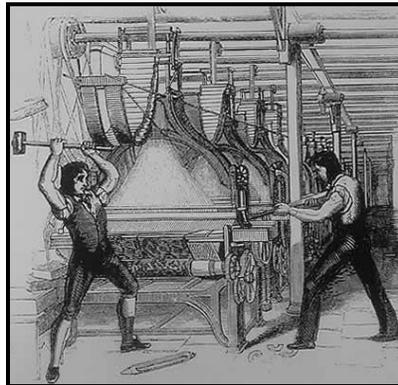
Will we have 21st-century Luddites using all their political power to smash the transformation of wealth distribution, energy sources (dirty hydrocarbons vs clean hydrogen), and work, especially knowledge work that makes up the huge portion of the Services Economy. How will we distribute wealth in a Post-Work economy where technology tends to agriculture, industry and, now, services? Economist Milton Friedman's Negative Income Tax?

So, it's not just process innovation and business transformation, it's societal transformation that we must now tend. Change won't come from the top, from the

folks who want to cling to their economic and political power. It won't come from the bottom of organizations where folks are not fully informed and cling to their jobs with uncertain futures. It will be the middle of organizations, the places where innovation takes place, where new digital products and services are developed, where organizational restructuring occurs to adapt to the needed outside-in transformation demanded by today's fully-empowered customers. As business analysts and architects, our future is in your hands as you take on corporate social responsibility (CSR), compliance, risk and governance issues (GRC) and other issues that go far beyond back-office process improvement.

You know, the term 'management' didn't exist until the Industrial Revolution demanded it and Fredrick Taylor, Alfred Sloan and Peter Drucker invented this thing we call management in the 1920s. From the early 20th century until today, it's been command-and-control management. In our current digital age, it must transform to connect-and-collaborate, where transparency becomes the invisible hand of management control.

Knowledge is the most democratic source of power.

—Alvin Toffler

These are your challenges. It's no longer just mastering project management and process modeling techniques. In a sense, the grand challenge is no longer enterprise reengineering; it's social transformation, one enterprise, one government institution at a time. Such transformation begins with an awareness that spreads throughout society. We cannot smash the smart machines that are taking over so much work in the services sectors with the Luddites' hammers. We can only chip away at the forms of governance that no longer work for the people by becoming fully-informed citizens, fully-informed workers and fully-informed digital Millennials. And, we call on you as knowledge workers in the middle of your organizations to be the Transition Generation.

According to the late James Martin, "The individual is immersed in such an expanding ocean of capability to process knowledge. That makes the twenty-first century both more exciting and more perilous than any other century so far. We are heading toward an inflection point, but our leaders are not preparing to make the passage smoother for us. That will be the job of the Transition Generation."

Author

Peter Fingar

Peter Fingar, independent analyst, internationally acclaimed author, management advisor, former college professor and CIO, has been providing leadership at the intersection of business and technology for over 40 years. Peter is widely known for helping to launch business process management (BPM) with his book, *Business Process Management: The Third Wave.* He has taught graduate and undergraduate computing studies in the U.S. and abroad, and held management, technical, consulting and advisory positions with GTE Data Services, American Software and Computer Services, Saudi Aramco, EC Cubed (for clients including GE TPN, American Express, Master Card and GE Capital), Noor Advanced Technologies, the University of Tampa, the Technical Resource Connection division of Perot Systems and IBM Global Services. He is a sought-after keynote speaker and his latest of 15 books include *Business Process Management: The Next Wave,* which is about the use of distributed intelligence in business and *Smart Process Apps: The Next Breakout Business Advantage*. http://www.peterfingar.com peter@peterfingar.com

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