



A TCS Point of View

# Winning in the Digital Consumer Economy Requires Digital Reimagination

## About the Author



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Dr. Satya has more than 20 years of experience in digital technologies. He has done two successful startup companies in the mobile application and Big Data spaces. His counsel is sought-after by clients in multiple industries across North America, Europe, Latin America, Japan, and Asia-Pacific. He has been quoted by media across the world on the evolution and impact of digital technologies on the modern day enterprise. Dr. Satya has 6 granted US patents to his credit with another 14 patent applications pending. He has a Ph.D in Distributed Computing from the Indian Institute of Technology, Chennai and an MBA in Marketing and Analytical Consulting from the Kellogg School of Management, Chicago. He is based out of the TCS Silicon Valley Customer Collaboration Center in Santa Clara, California.

## Executive Summary

The world economy today is in the midst of a tectonic shift from the Internet Economy to what we call the 'Digital Consumer Economy'. This has profound implications for enterprises in every major industry. The emerging Digital Consumer Economy is populated by empowered customers with pervasive digital devices that provide anytime-anywhere access to real time information. These consumers are constantly connected to one another via social networks, and they base purchasing decisions on opinions and insights from their peers within those networks. In the Digital Consumer Economy, firms that compete for these consumers are also endowed with digital technologies that allow them to understand and serve these consumers better.

This level of digital empowerment, of consumers and the enterprises that serve them, did not exist even five years ago, when most of the digital technologies driving this economic shift were in their infancy. These technologies are turning traditional managerial wisdom upside down. Companies require fresh new thinking to succeed.

History demonstrates that every significant economic shift is accompanied by a dramatic remaking of the major players in the economy – the organizations that provide goods and services. In essence, there will be new winners and losers. The disruption was severe when the Agricultural economy shifted to the industrial economy in the 1800s; when the Industrial economy shifted to the Knowledge economy in the second half of the 20th century; and when the knowledge economy shifted to the Internet economy at the end of that century.

This shift to the Digital Consumer Economy has powerful new supporters. Governments across the world have recognized the economic and job creation potential of digital technologies. The European Union has published a 'Digital Agenda,' a set of policy recommendations that, if enacted, will boost European GDP by 5 percent over the next eight years and create up to 3.8 million jobs over the long-term<sup>1</sup>. Australia, the UK, the United States and other countries have created similar policy frameworks.

Companies that do not take seriously the shift to the Digital Consumer Economy will face extinction. Once thriving enterprises such as Blockbuster, Kodak, and Borders that didn't react when faced with digital alternatives no longer exist. The impact of today's digital forces will be even more profound.

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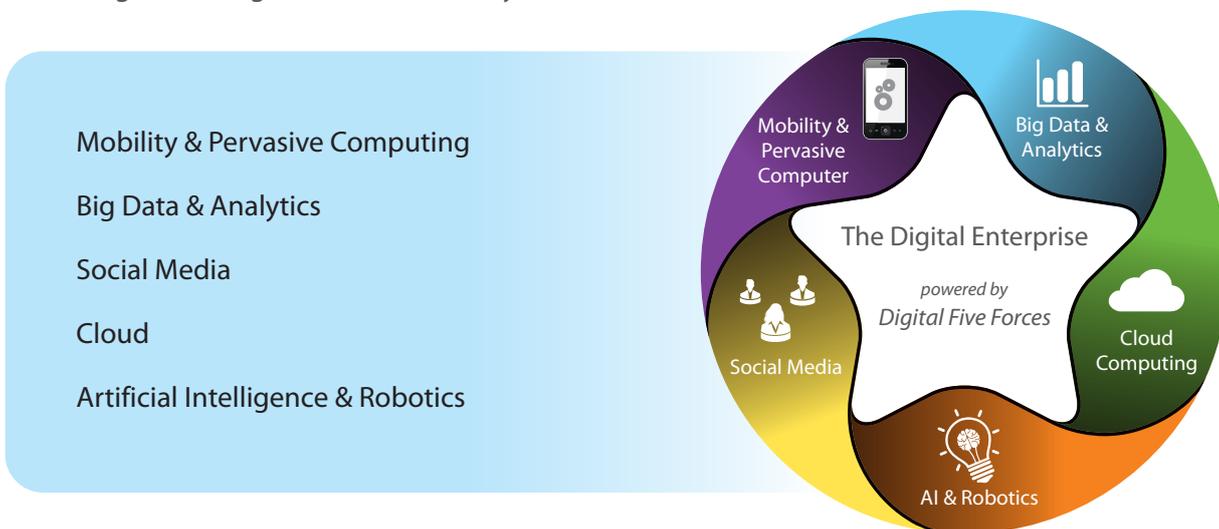
[1] <http://ec.europa.eu/digital-agenda/digital-agenda-europe>

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# The Digital Five Forces

Five key digital technologies are maturing and precipitating the shift from the Internet to the Digital Consumer Economy. These technologies have been developing for the last seven to eight years but have now reached a level of maturity that makes them compelling business change agents. Very importantly, these technologies have reached the stage where, when used in combination, they offer far greater capabilities in marketing, selling, manufacturing, distribution, service and innovation than each could offer in isolation. Collectively we call these five technologies the 'Digital Five Forces'. They are:



Let us look at each of them briefly.

## Mobility: The Ability to Constantly Connect to Customers and the Products Sold to Them

Mobility technologies enable both businesses that sell to consumers and ones that sell to other businesses to connect to customers who use smartphones and tablet devices. In the seven years since Apple launched the iPhone, mobility has liberated information trapped in desktop computers and transformed customer service into 24x7 contextual interactions that can happen anywhere.

Digital sensors and other miniaturized technologies embedded in mobile phones such as global positioning, cameras, accelerometers, compasses and gyroscopes provide a wealth of information about their users. Companies can use this data to be fully informed about the people who are in their proximity. They can know a lot about the person who just walked into their clothing store, airplane cabin, grocery aisle, amusement park or other establishment. Organizations that give their employees such mobile devices can eliminate tremendous amounts of paper and pencil-intensive business processes that are costing them multimillions of dollars, numerous errors and delays in serving customers.

This electronic transfer of information substantially accelerates business processes and makes big organizations as agile as small ones in the minds of customers. For example, an insurance company has given its appraisers a tablet-based system to fill out forms, take notes, attach pictures and send them from the customer's premises.

Competitors that continue to use paper, pencil and camera to process insurance claims are at a competitive disadvantage because they can't pay customers' claims rapidly.

Consider the retailer that brings interactivity to the in-store shopping experience by helping customers use their smartphones to search for items in the store, get product ratings and rankings, find related products and ask questions. This retailer has a distinct advantage over stores that do business as it's been done for decades.

Today, mobility is evolving beyond smartphones to a broader set of digital devices that can be worn and embedded in the products that customers use. Wearable computing devices such as Google Glass and the fitness trackers that people wear on their wrists enable companies to digitally connect with their customers. Digital devices installed in televisions, automobiles, appliances and industrial equipment give manufacturers unprecedented means to monitor the performance of their products, as well as the customers who use them.

## Big Data Enables Companies to Make Sense of the Data Explosion

Big Data technologies, which sprang from Internet companies that had to handle enormous volumes of digital data, have gained prominence in the last few years. They have become essential to handling the volume, velocity and variety of data that all enterprises now have at their disposal.

This data can be structured as in traditional databases or unstructured as in free-form text found in social media postings, blogs, web pages, or video and audio. Whether structured or unstructured, Big Data and analytics technologies enable companies to exploit information they had to discard in the past because of the high cost of storage and retrieval. Now many companies are analyzing several years of data that sat dormant in the data center but which is now revealing opportunities for new products, customer segments to pursue, and process improvements to make. Companies could not identify such patterns from their processing and analysis practices of the past; essentially, they could only take snapshots of small sets of that data.

Data that lies outside a company's four walls provides even bigger opportunities. Companies can gain important and timely insights about customers, competitors, products and new product opportunities from the huge volumes of external unstructured data that is streaming in from sources like social media. These capabilities didn't exist before. They present a unique opportunity for early adopters to gain significant competitive advantage in their markets.

For example, manufacturers of power generators can analyze the constant stream of data coming from sensors embedded in their products to predict failures and intervene before an incident occurs. They can also generate incremental revenues from such services and improve customer satisfaction by keeping equipment up-time high.

A retailer using Big Data to analyze sales transaction data from its point-of-sale terminals combined with the social media activity of its customers can generate 360-degree insights about customers and treat them as individuals. Such techniques are likely to create intense customer loyalty.

## Social Media Lets Companies Make the Whole World a Perpetual Focus Group

Nearly two billion people around the world today use social media to share their thoughts<sup>2</sup>. Social media is not only a very effective business-to-consumer marketing medium; it has also become invaluable for companies to tap into consumer-to-consumer communications without invoking the observer effect that can taint consumer research. In traditional market research methods such as focus groups, where a small sample of consumers take part in studies about products and services, the observer effect is a major issue. The very fact that one is being observed changes the behavior of the consumer taking part in the focus group. For the first time in history, social media allows companies to learn about the views of millions of consumers about products and services without the observer effect.

Since Big Data analytics can handle with ease the comments of hundreds of millions of consumers over very long periods of time, companies can now exhaustively analyze consumer sentiment rather than superficially assess it on the basis of limited samples. Just as mobile apps enable companies to know unprecedented things about the customers that are near or on their premises by leveraging the physical context, so social media applications let companies provide new experiences by utilizing the social context of their customers.

For example, a banking social media application could allow the transfer of money from a customer to a friend in her social network simply because the friend is connected to her in that social network. All of this could happen without the customer needing knowledge of her friend's account number, routing number, and other details, which otherwise make a money transfer cumbersome in traditional banking systems.

## Cloud Lets Companies Have Huge Computing Resources at Their Disposal Without Having to Invest in Them

Cloud computing services let companies big and small inexpensively gain the industrial-strength computer capabilities they need to compete in this digital world. Vendors of public cloud services enable companies to bypass the hundreds of millions of dollars of investments they would have had to make in data centers, software and hardware and technology personnel to deal with the explosion in digital data. In this way, cloud has brought agility, scalability, reliability and cost-effectiveness to computing infrastructure along with pay-as-you-go business models.

All this is democratizing large-scale computing: Small firms can have the capabilities of large firms now. Cloud infrastructure allows server computing to grow or shrink with demand, thereby keeping utilization levels of costly computing infrastructure high. Cloud also lets consumers' mobile devices, whose processing power is limited, tap into the vast computing power of the cloud. The rapid innovation of public cloud infrastructure has been a key factor in the growth of other digital technologies.

## AI and Robotics Minimize the Need for Human Intervention

Artificial Intelligence (AI) and Robotics are the fifth of the Digital Five Forces. Modern AI, driven by Big Data technologies, is fundamentally different from traditional AI that was driven by rules and inferences. Because modern AI is data driven, it more closely mimics neo-cortex, the learning part of the human brain. This allows the use of techniques such as sparse data representation and deep learning in modern AI systems.

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[2] [http://www.mediabistro.com/alltwitter/social-media-worldwide-growth\\_b45043](http://www.mediabistro.com/alltwitter/social-media-worldwide-growth_b45043)

With this capability, it is now possible to bring automated expertise to resolve situations that in the past would have required human intervention. The robotics technologies of today not only take advantage of mechanical and electronic components and emulate human arms and digits more faithfully, they also embody significantly more intelligence by connecting with AI systems in the cloud.

Today's robots are not limited by the intelligence that can be installed in the device itself. They can tap into the enormous computing power, and thus powerful intelligence, of the cloud.

Combining modern AI and robotics, companies can now efficiently scale activities that were previously undertaken by people. Intelligent robots in retail stores can verify that store managers are complying with corporate 'planograms', the models that describe how products are to be allocated on store shelves, more accurately than store or regional managers can themselves.

## Why now?

Why is the shift from the Internet Economy to the Digital Consumer Economy happening right now?

For the last decade since the dot com-related market crash, companies have been under significant cost pressures. Most of the known cost levers in various industries have been discovered and applied. The options for dramatic cost reductions are limited. On the revenue side, intense competition has reduced firms' ability to increase prices. The net result of this pressure on both costs and revenues, is that companies are caught in what can be termed a 'value barrier'. Since investors' growth expectations will not allow firms to remain caught for long they need to find ways to break through this value barrier. They are looking for tools to help them do so.

The second important reason for the shift is the influx of so-called 'digital natives' into the customer base. In Europe and other developed regions where population growth is slow, new customers must come from younger segments of the population. These younger generations have grown up with digital devices and they expect the same experience from the companies whose products and services they buy.

To illustrate, a retail bank may continue to keep its branches active to serve these digital natives since many of them still need advice from a banking professional. But these branches need to be reimaged with digital technologies such as tablets and smart kiosks, available to meet this segment's demands for responsiveness, knowledge, engagement and individualized attention.

In many industries, companies are overcoming the value barrier and gaining large numbers of digital natives as customers by leveraging a potent combination of the Digital Five Forces.

## Three categories of digital initiatives

In our engagements across numerous industries, we see clients pursuing one of three distinct types of digital initiatives.

The first category can be termed 'Digitization'. In these initiatives, companies introduce digital devices to their existing business processes or workflows that are typically manual and have physical artifacts such as paper and

pencil. In other instances, they introduce digital technologies such as mobile devices or social media in an existing business process undertaken on personal computers. As we saw earlier, anytime a connected digital device such as a tablet computer is introduced into what is primarily a physical artifact-based business process, it adds tremendous velocity to that business process. Digitization can bring about significant benefits. However digitization by and large preserves the structure, actors, and flows of existing business processes and hence is rarely transformational.

The next and higher step in the spectrum of digital initiatives can be termed 'Digital Transformation'. In Digital Transformation, companies typically transform their channels to customers by introducing digital technologies. A company may restructure its web channels to move from product-centered design to user-centered design. It may redesign the web channel using adaptive and responsive web design so customers can view its websites on multiple types of digital displays. That makes it far easier for companies to use their websites and mobile apps as selling devices. Digital transformation may involve adding a mobile capability that enables customers to connect to them from their mobile devices – or creates a seamless customer experience across channels including mobile, desktop computer, stores and so on. Digital transformation can have a significant positive impact on a company's revenue and the brand experience it presents to its customers. It can also improve key sales metrics – for example, reducing the average deal approval cycle, time to bookings and deal cycle time. Digital transformation initiatives mostly impact one key aspect of a company, namely its channels, but leave many other areas of the company untouched.

While Digitization and Digital Transformation initiatives deliver key business benefits, they still do not tap into the full and collective potential of the Digital Five Forces. In our client work and in the digital strategy sessions we conduct with our customers, we are discovering a new trend emerging where companies can leverage all of the Digital Five Forces and fundamentally reimagine their businesses and the industry in which they operate. Here, we use the term 'reimagine' to denote creating things that are fundamentally new, not simply incremental improvements.

We define Digital Reimagination™ as leveraging a combination of the Digital Five Forces to reimagine six areas of an enterprise:

- Business Models
- Products and Services
- Customer Segments
- Channels
- Business Processes
- Workplaces

Two aspects of this definition are critical. The first is about leveraging a combination of the Digital Five Forces and not each of them individually. The second is about creating something fundamentally new in these six areas of a company. While doing so, Digital Reimagination™ fundamentally changes many aspects of traditional managerial wisdom. We will now explore examples of how Digital Reimagination™ works.

## Reimagining Business Models

Business models evolve in an industry over long periods of time and reflect the equilibrium between the various players in that industry including enterprises, their suppliers and customers. Technology also has a role to play in determining an industry's business model. Changing the business model in any market is very hard. However, if a company succeeds in changing the business model in an industry, then it usually enjoys a disproportionate advantage in that market. Let us look at three examples of how the Digital Five Forces can help enterprises reimagine their business models.

Data transparency created by a combination of mobility and pervasive computing, Big Data, and Cloud computing can be a key factor in reimagining business models. In many industries, companies lack critical information about how their products are performing for customers. The result is arms-length relationships: manufacturers removed from distributors, removed from the ultimate customer. Ownership of the product moves from the seller to the buyer in exchange for an agreed-upon consideration. However, after delivering the product, to a distributor or the final customer, the seller has no visibility into how the customer is using the product.

However, if the seller had continued visibility into the functioning and usage of the product after the buyer took delivery, a company could introduce a very different business model by making products available for rent rather than for sale. In doing so it could shift away from the prevailing capital expense-based business model. For example, that company could move to a usage-based business model where the buyer pays based on how often and how long it uses the product and how well it is maintained.

Equipment such as jet engines and power generators can fit this model. By embedding sensors that continuously monitor its engines and upload the data to a Big Data system on the Cloud for analysis, producers of such equipment can offer an operating expense-based, usage-driven business model to customers. Reducing the need for customers to make a big capital expenditure, these companies could rapidly expand the market for their equipment.

Using digital tools to improve a customer experience that will never be a purely digital one is another path to Digital Reimagination™. Combining both digital and physical experiences, call it digital-physical cohabitation, can also create new business models. Let's consider a customer who uses smartphone apps while shopping in a physical store. The customer could search for products not only in the store, but even those not on its shelves. While products in the store are available immediately, others could be delivered to the customer's home while the store is collecting the payment. All of this is enabled by mobility, Big Data and Cloud.

Using the Digital Five Forces in combination can also help enterprises target customer segments they weren't previously focused on. For example, use of customers' mobile devices, with inbuilt sensors such as GPS, compass, gyroscope, and accelerometer, in combination with cloud applications can help firms engage customer segments they could not have targeted before – that is, segments for which the company would have previously had to sell its own mobile devices to those customers at prohibitive capital expense. Since customers have their own devices, companies can take advantage of digital infrastructure that's already in place.

Any time a company targets and services a new segment, it inevitably has to change its business model.

## Reimagining Products and Services

Firms that are leveraging a combination of the Digital Five Forces create new products and services that increase revenues. These technologies are forcing tremendous changes in the traditional ways in which companies have created new products and services and updating existing ones.

One example is crowdsourced product design. Traditional consumer product design relies heavily on obtaining feedback from consumers through sampling methods such as focus groups. The efficacy of such methods is limited by the effectiveness of these sampling methods and is often expensive. In addition, in observing customer attitudes and behaviors, companies have had to factor in the 'observer effect' – the behavior of those observed changes simply due to the awareness that they are being observed.

For the first time in history, we now have a tool in the form of social media that allows firms to tap into consumer-to-consumer communications at mass scale in an unobtrusive manner without the observer effect. Users of social media such as Facebook and Twitter are commenting extensively on products they use. By utilizing Big Data analytics on the Cloud, it is now possible to derive precise consumer sentiment on products and services and segment it to various levels. It is also possible to far more accurately discern consumer needs for various product features by analyzing their comments on existing products. In these ways, the Digital Five Forces allow companies to improve existing products. At the same time they can gain far better insights for new products by crowdsourcing product design.

The Digital Five Forces also enable companies to move up the value chain and closer to the end consumer of their product. Companies that interact directly with end customers and use Big Data to analyze those interactions are shifting the balance of power in many industries. Take the example of movie and TV industries. Distributors of content now have access to click stream data from set-top-boxes or media client software that provides valuable insight into the preference of consumers on a mass scale. The ability to obtain and process this data was not available before.

By analyzing when consumers stop, rewind, pause, fast forward content, and correlating this data with the actual content these consumers were watching, content distribution companies now have precise insights into the viewing preferences of consumers. This allows them to create original content that incorporates these insights. In effect, they can figure out what makes for a popular TV show or movie – what plot, which kinds of characters, which movie stars, what types of endings, where to film and so on. This puts them in a strong competitive position against content producers that do not have the benefit of this consumer viewing click-stream data. Content distributors now have a new source of revenue in content production by moving up the value chain.

Data monetization is another important way in which the Digital Five Forces collectively increase revenue in some companies. They are using Big Data analytics to understand where and how to make major operational improvements and cost reductions. But they could use this data in other ways as well and monetize the data itself by selling it in whole or in pieces to other companies that need it. Companies in several industries are awash with data that if processed and packaged would be valuable to companies in the same industry or even in other industries. Consumer privacy and security are of paramount importance while monetizing data. While monetizing individual consumers' data is problematic, there is a lot of value to be harvested in monetizing at the aggregate level. Mobile telecom companies have valuable data about traffic patterns on major highways. Credit card

companies have data about demand characteristics of various products and services. Even at the aggregate level, this data would be valuable to industries ranging from retailers to government agencies.

## Reimagining Customer Segments

The Digital Five Forces are rewriting traditional marketing wisdom related to segmentation. Traditionally, consumer segmentation is driven by a small number of variables. Companies divide a few million consumers into a handful of segments based on two to three variables. They then decide which segment(s) to target and then develop products for those segments. The Digital Five Forces make it possible for companies to abandon such hugely imprecise segmentation approaches. Micro-segmentation and even potentially a segment of one are now possible.

Mobiles and mobile applications provide a wealth of data about individual consumers. Their social networking activity also reveals a lot about their preferences. It is now possible to get a 360-degree view of an individual consumer by combining traditional customer relationship management data with data from social media. Once such data is available, companies can target products and promotions for the individual consumer.

What has made the difference is the newfound ability to track preferences of individual consumers and the ability to store such data about millions of consumers and do automated analytics on it. This is made possible by a combination of mobility, Big Data, social media and Cloud.

## Reimagining Channels

A growing number of companies are using the Digital Five Forces to reimagine their traditional distribution channels to customers. They are creating new channels that give customers more options. Mobile and social media applications driven from the Cloud have created a new way to serve consumers in a contextual manner. Mobile applications interpret the physical context, whereas social media applications assess the social context to provide a personalized experience to customers in the consumption of products and services. Consumer-facing enterprises ranging from retailers to banks are now deploying these new channels to create an anytime, anywhere contextual connection to their consumers.

New channels that enable companies to migrate from pure physical channels to digital channels can dramatically reduce the costs of marketing, sales and distribution, while increasing personalization. Digital channels make it easier to personalize the sales and interaction processes. Data on what consumers are clicking on their digital devices makes it far easier for companies to understand consumer behavior. This is because such click-streams can be recorded and analyzed in depth using Big Data, while the physical interaction is less amenable to such analysis. To illustrate this, just consider the difference between a customer that walks into a store and leaves without purchasing anything because he couldn't find the items he was looking for, and the same customer who goes on a retailer's website looking for those items. In the former case, the in-store retailer has no idea what the customer was looking for, and thus has lost the opportunity to make a sale, in the latter case, the online retailer knows exactly what he wanted.

The Digital Five Forces are also forcing companies to redesign existing channels to market, most notably their physical channels. There are lots of benefits available to companies that enrich physical channels with digital tools. Consider retail stores, most of which today don't offer consumers a digital experience once they walk through the doors. Unlike an ecommerce store, once you walk into the physical store, there is no easy way to search for a product, get more information about a product, find related products, or know about the ratings and rankings of a product. In this setting, a mobile application that helps a customer search for a product from the store's inventory, provides information about the products, and delivers promotions on products displayed where the customer is standing would be very useful in increasing sales. These promotions can be delivered from a Big Data system that can analyze the purchase history of the customer and identify just one or two products that can be sold to the customer through a targeted promotion. This is one of many examples of how companies are reimagining their existing channels with the help of the Digital Five Forces to grow revenue.

## Reimagining Business Processes

The Digital Five Forces are also helping companies in numerous industries to reimagine critical business processes and boost their efficiency.

One of the more common impacts of business process reimagination that we see in our client work is the migration from physical artifact-driven business processes to digital processes. Mobile applications on the Cloud that can leverage Big Data analytics let companies reengineer paper and pencil-based business processes into highly accurate, speedy and responsive business processes. For example, airplane cockpit instrumentation is being converted to tablet applications on the Cloud. Insurance claim verification business processes are being converted from paper-pencil-camera business processes to tablet-based applications.

The Digital Five Forces enable companies to reimagine business processes by making them data driven. The ability to connect mobile devices to Big Data systems on the Cloud allows companies to institute data-driven validations and process steps in business processes where it would not have been possible before. Again, it's the digitization of business processes and the constant connectivity to Big Data systems on the Cloud from the digital devices that makes this possible.

The real-time availability of data and the constant connectivity from digital devices can even lead to elimination of certain workflows that require multiple levels of approvals. Many companies' workflows were designed in an age when work flowed in files from one worker to another and across multiple organizational silos and hierarchies.

For example, insurance companies have needed experienced workers to ensure claims approvals or rejections were done according to company policies. In today's environment where all data is available in real-time and machine learning has created the ability for automated validation checks, there is no need for the traditional hierarchical workflows involving the time and effort of a series of human personnel. When an employee needs to purchase an item for a manufacturing operation, it will significantly speed up the business if the validation is performed using Artificial Intelligence systems as soon as the employee raises the request instead of having two or three layers of checks by human supervisors that could take days or weeks.

## Reimagining Workplaces

The Digital Five Forces are also helping companies reimagine their workplaces. The workplace has undergone a lot of change over the years but that change is being significantly speeded up by the Digital Five Forces.

The workplace is being reimagined from being a pure physical place to a digital environment and in many cases a combination of the physical and digital. Mobile devices are increasingly becoming the place from where employees perform their work. Be it responding to emails, making sales presentations to prospective clients, or analyzing company performance from dashboards on mobile devices, employees conduct much of these activities on devices that use Cloud applications. Similarly, enterprise social media platforms are becoming the water coolers of the modern day workplace. The ability of enterprise social networks to transcend location and time barriers across global organizations in spreading knowledge and identifying talent is becoming crucial. As enterprise social media increases the velocity of communication and democratizes, companies have an unprecedented opportunity to reimagine a far more productive workplace.

Big Data analytics augmented by Artificial Intelligence systems can help HR executives reimagine people management. Consider the process of hiring employees. The traditional process involves creating a job description and having human recruiters sift through resumes submitted to the company directly or via recruitment agencies. With the help of Big Data this process can be completely reimagined. Big Data on the Cloud can compare information on social media and the web to identify the best possible candidate from among all the workers in the industry. Therefore, the candidates being considered are not just the ones who have applied for a job in the company but the best matches in the whole world, including even those who have never applied for a job in the company. HR managers could also use sentiment analysis of enterprise social networks and Big Data to take the pulse of company morale all without the need to conduct formal employee engagement surveys.

## Industries will be reshaped by Digital Reimagination driven by the Digital Five Forces

In these and other ways, practically every industry is ripe for Digital Reimagination. Profound economic shifts create discontinuities in industries and new winners and losers. Enterprises that adapt quickly to the discontinuities from the shift of the Internet economy to the Digital consumer economy will emerge winners. Enterprises that fail to adapt will end up as losers. In many industries, enterprises that never existed in the Internet economy and hence are not burdened by legacy will build themselves from the ground up by reimagining new business models, developing products and services to serve reimagined customer segments via channels that never existed before.

Take retail banking for example. Digital Reimagination will give rise to branchless digital banking driven by segment-of-one services. The baby boomer generation enjoyed personal banking via physical bank branches. The branch manager and clerks knew each customer personally and their finances, and provided personalized attention and advice whenever a customer visited the branch. Customers from the post-Baby Boomer and Gen-X generations were treated as mere account numbers, expecting nothing more than impersonalized mass service.

That won't fly much longer. Younger generations of customers from Gen-Y and the millennials, the digital natives, expect personalized attention. But with the dramatic increase in the number of customers and need for cost reduction, it is not possible to provide personalized attention via human touch. The Digital Five Forces however can make a difference. Mobility and social media combined with Big Data analytics and AI can help companies deliver personalized attention to each customer via digital channels even without needing human intervention.

The mobile channel allows companies to know each and every customer's preferences. Social media analysis using Big Data lets companies know the views and tastes of each customer. The power of Big Data to analyze customer needs without customers having to articulate them now makes it possible to understand each customer individually. The individualized attention need not be limited to digital channels. Many European banks are realizing that the customers who most often visit their bank branches are the younger segments, not the older segments. Older customers know about various banking products and how to use them, while the younger segments need to discuss with a banking advisor personally. A bank that needs to attract and effectively serve younger customers in bank branches cannot live in the pure physical world. It has to adopt digital technologies even within the physical bank branch to make the bank branches attractive to these younger segments. Financial advisors, for example, need to do research on their customers before meeting them. Social Media analytics using Big Data can help do just that.

Digital Reimagination will impact the insurance industry in a big way. Smartphone-based telematics combined with Big Data on the Cloud will give rise to new models of risk management. Traditionally, the insurance companies targeted large and diverse consumer segments. For example, in auto insurance, many companies marketed and developed products for just a handful of segments based on past driving and claims history. They looked at 'good' drivers, 'bad' drivers, and a few segments in between. These customer categories, however, ignore profound differences, and thus risk, within each category.

Auto insurers using the Digital Five Forces are more accurately tracking driving behavior on a voluntary basis. The modern smartphone is endowed with a set of sensors that provide accurate physical context. The GPS, accelerometer, and gyroscope on a smartphone can provide sufficient information about the physical context when activated by a mobile application. Instead of installing a physical tracking device that requires capital expenditure by the insurer, now the insurer can tap into an easy-to-use smartphone application on the customer's smartphone to track his driving behavior. The driver is expected to switch on a mobile application on his smartphone every time he drives. The application can now record how far the driver drives each day. It can identify how smoothly the driver starts and stops, how well the driver makes turns, etc. This information can be analyzed at the individual level, which allows insurance policies to be determined based on the actual risk profile of each individual customer, and not the broader customer segment that he used to be lumped into.

Of course the customer must be willing to share this data with the insurer, but the right set of incentives can in fact convince the customer as many Insurance companies are finding out. The pricing for customers who agree could be usage based as compared to broad segmentation based, thereby changing the business model. Apart from creating a new business model and enabling better risk profiling, such smartphone applications fundamentally

change the way insurers engage with customers. Instead of the low-touch model of interaction, where the customer interacts with the insurer only when renewing the insurance or when an event happens, in the new model described above, the mobile application switched on by the customer every time he drives creates an opportunity for the insurer to connect with the customer on each occasion. This is extremely valuable. The same applies to health insurance, also an industry that has minimal interaction with customers. However, through mobile applications that interact with wearable health devices, health insurers get the opportunity to connect with their customers on a more regular basis, reinforcing their brand loyalty.

Another industry that is at the precipice of massive digital reimagination is brick-and-mortar retailing. This industry is facing intense competition from online retail. Online retailers that use Big Data technologies provide a highly personalized experience that is missing in brick-and-mortar retail. The intense interactivity that we have come to expect from online retail is simply not there in physical stores. Detailed product information, ratings and rankings, related products, personalized promotions make online retail enriching. But once you walk into a retail store, all of this goes missing. However the Digital Five Forces will make interactivity come to the in-store shopping experience, thereby altering the competitive dynamics vis-à-vis online retailers.

Mobile applications on the Cloud now enable a shopper within a brick-and-mortar store to get the same type of information about the products on the shelf as exists online. Simply scan the bar code on the product and the mobile application can give every detail about the product he needs. Indoor location technologies now enable delivery of very targeted promotions to shoppers within the store. When the shopper is in the men's section of a store, the indoor location technologies such as Bluetooth-Low-Energy technology can accurately identify his location within a few feet via the smartphone he carries. Now, when the shopper is in the men's section, just a couple of well targeted promotions that relate to his earlier purchases, available from loyalty data, can prompt him into action. This approach is much more effective than bombarding him with untargeted promotions that are not in any way related to where he is in the store or his prior shopping history and potential current need. If brick-and-mortar retailers can reimagine the store experience by applying the Digital Five Forces, they can reimagine shopping and turn the competition with online retailers in their favor.

Another industry that is being completely reimaged with the Digital Five Forces is media. These forces are blurring the boundaries of the media industry, transforming media companies from providers of just content services into providers of consumer experiences.

Take the example of the book publishing industry. Reading a book is an enriching experience, whether you are a child or a scholar. The book publisher who brought all that content to the reader traditionally had a weak link to the individual. The publisher sold the book to the retailer who sold it to the reader so the publisher had no ongoing connection to the reader.

The Digital Five Forces are changing this. Now publishers are launching companion mobile apps that go with the book. The reader can download these apps and this enables the publisher to establish a continuous connect with the reader to the benefit of both parties. The mobile applications and companion web sites offer supplementary information, tests on the content of the book, social media connections to other readers and experts in the field. These add-ons can be priced separately providing additional revenue as well as a deeper and ongoing relationship with the reader.

## Implications and Recommendations

Human history shows that progress is relentless. This is driven by the constant advancements of technology, cultural and demographic changes and the fundamental competitive nature of modern institutions such as the private enterprise. Whenever a set of tools that can provide a differential advantage for an enterprise within a socio-economic context becomes available they are most certainly leveraged.

The Digital Five Forces are rapidly maturing. They are ushering in a Digital Consumer Economy in which digital natives will have immense purchasing power. Enterprises that are early adopters are already beginning to deploy a combination of the Digital Five Forces and obtaining competitive advantage in the market by reimagining six key areas of an enterprise – business models, products and services, customer segments, channels, business processes and workplaces.

The transition to the Digital Consumer Economy will create new winners and losers. Those who adopt the Digital Five Forces and reimagine key areas of their businesses will emerge successful. Those that do not will lose. We recommend that every enterprise keen on winning in the Digital Consumer Economy undertakes the following:

- Disrupt the established business models in its industry by applying the Digital Five Forces to create data transparency in its products, combining traditional physical products and spaces with digital capabilities, and targeting new, previously unreachable segments
- Find entirely new sources of revenue from new products and services that utilize crowdsourced product design; moving upstream in the value chain by leveraging consumer data; monetizing available data by selling it to other enterprises
- Dramatically increase marketing efficiency, and thereby revenues, by moving from coarse segmentation to fine-grained segmentation using the Digital Five Forces to redraw existing segment boundaries and creating new, previously unidentified segments
- Radically improve distribution capacity by creating new digital channels, combining digital capability with redesigned existing physical channels.
- Modernize by migrating physical processes to digital processes, making these business processes data-driven and, where possible, eliminating workflows altogether
- Inject excitement into the workplace and make it attractive for young talent by creating digital workspaces, making people management data driven, and empowering employees to contribute regardless of their physical location.

The winners in the Digital Consumer Economy will be enterprises that master the Digital Five Forces and reimagine their businesses.

**Contact**

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