

# The Digital Consumer Economy Demands Digital Reimagination™

How to Win in the Brave New World

## Abstract

The Internet revolutionized the way people gain information, share information, make purchases, and manage their lives. Now, we are well into a new and even more profound shift from the Internet Economy to what we call the Digital Consumer Economy. Five extremely powerful digital forces—mobility, Big Data, social media, cloud computing, and artificial intelligence—are converging to make consumers more empowered than ever before. The Digital Consumer Economy is placing significant demands on companies that compete for these consumers—and generating massive opportunities.

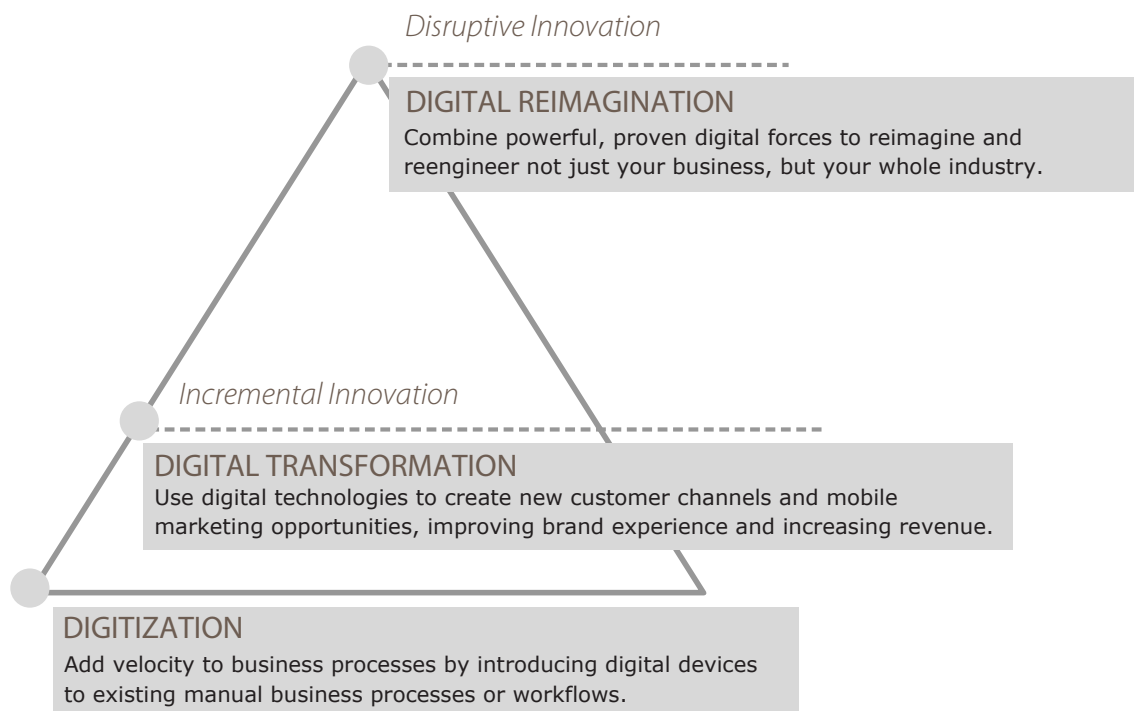
We call that opportunity Digital Reimagination. The Digital Five Forces enable you to go well beyond thinking of IT as a source of incremental improvement. They enable you to create new businesses, new business models, and new products and services. They provide the means to reimagine your customer segmentation, your business processes, and even your workplace. Ultimately, we believe that the Digital Consumer Economy will demand enterprise-wide transformation—and will reshape industries.

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An insurance company that equips adjusters with tablets to input—and automatically send—accident estimates and claim information from the field is adding **Digitization**.

When the collective potential of multiple digital forces is used to create fundamentally new processes, services, business models, and more, that's **Digital Reimagination™**. For example, a leading bank combined social media with mobility and pervasive computing to create the first 100 percent digital bank in Europe.



## Why Now is the Time for Digital Reimagination™

New companies are being created with digital natives in mind. And that means existing companies have to work even harder to level the playing field and gain traction with digital natives in particular and the digital economy in general.

Technology enables the Digital Consumer Economy, and “digital natives,” a growing segment of consumers, are demanding powerful digital experiences. Twenty-somethings are often more comfortable buying online as in the real world. It’s likely they have never set foot in a bank branch or bought a newspaper, and expect to do their banking and get their news via phone, tablet, or computer.



*Digital Reimagination™ can reshape entire industries, creating products and services not technically possible before, and brand new channels to reach consumers.*

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## Digital Reimagination™ Requires Creative Combinations of the Digital Five Forces

Five digital technologies have reached a level of maturity and penetration that makes them compelling business change agents. 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:

### **1. Mobility and Pervasive Computing: Stay Connected to Customers and the Products Sold to Them**

Mobility has liberated information once trapped in desktop computers. Mobility technologies enable enterprises to accelerate business processes; field personnel, for example, can capture and instantly share data from anywhere.

Equipment manufacturers can now combine Big Data with cloud and artificial intelligence technologies to embed sensors in their products and sort through data fast enough to conduct predictive maintenance and increase equipment up-time.

Combining Big Data and cloud technologies with mobility solutions will allow makers of wearable devices such as Google Glass or fitness trackers to create contextual, personalized connections with customers. Sensors in TVs, cars, appliances, and industrial equipment give manufacturers unprecedented means to monitor the performance of their products—as well as the customer who use them.



*The Digital Five Forces are proven technologies that, when combined in creative new ways, can transform every aspect of the enterprise, from the products and services you offer to your entire business model.*

## 2. Big Data and Analytics: Make Sense of the Data Explosion

Big Data technologies have become essential for managing the volume, velocity, and variety of data that all enterprises now have at their disposal. Companies gain important and timely insights about customers, competitors, products, and new product opportunities from the huge volume of external data and unstructured data from sources like social media.

Equipment manufacturers can now combine Big Data with cloud and artificial intelligence technologies to embed sensors in their products and sort through data fast enough to conduct predictive maintenance and increase equipment up-time. Retailers can combine sales transaction data with social media activity to generate more complete perspectives on their customers and deliver a better buying experience.

### 3. Social Media: Turn the Whole World Into a Perpetual Focus Group

Just as mobile apps leverage physical context to know where users are, social media apps provide the social context of users, allowing companies to create new customer experiences.

Social media is not only an effective business-to-consumer marketing tool; it's a way for companies to tap into

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consumer-to-consumer communications. Handled intelligently, social media data can allow companies to learn about the views of million of consumers without the “observer effect” that often taints consumer research. Combining social media streams with Big Data analytics and artificial intelligence/deep learning technologies, companies can now process comments from hundreds of millions of consumers over long periods of time for true consumer sentiment analysis, as opposed to limited-sample interpretation.

#### **4. Cloud Computing: Get Huge Computing Resources With Minimal Investment**

The Digital Consumer Economy demands scalability, and the cloud enables easy, cost-effective scalability for any business. The cloud makes enterprises more agile. The rapid rise and availability of cloud-based infrastructure is a key factor in the growth of other digital technologies.

Combine cloud computing with mobile apps to streamline business processes. With Big Data and social media to communicate with customers, and with artificial intelligence to offer 24x7 automated support.

#### **5. AI and Robotics: Minimize the Need for Human Intervention**

Artificial intelligence and related technologies offer enormous potential for the Digital Consumer Economy. The rapidly evolving state-of-the-art in AI—such as deep learning and convolutional neural networks powered by graphical processing units—is adding insight and functionality to all kinds of applications. Natural language processing enables human-computer interactions that are natural, flexible, and easy. Sentiment analysis provides an easy way to gauge unstructured data and draw reliable, deep conclusions about opinion. AI also makes robots and robotics devices more useful and more human.

### **Every Aspect of Your Business is a Candidate for Digital Reimagination™**

In good enterprises, good managers continuously rethink processes and business models and all the other components of running a profitable business. But the Digital Five Forces allow for something even greater. Instead of rethinking how you handle, say, operations, reimagine how you do everything across the enterprise using the digital tools available today:

#### **Reimagine Business Models**

Digital technologies are destroying old business models,

fostering new ones, and generally leading to creative new ways to generate revenue and profit.

For example, adding IoT-connected sensors to products, from jet engines to thermostats to printers, adds an entirely new dimension to a manufacturer's business model. Sensor data managed by Big Data analytics strengthens the connection between producer and user and allows meaningful new business models and revenue streams to emerge. Sensor data also delivers a powerful benefit if you can monitor performance and make adjustments remotely or schedule service and maintenance preemptively.

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Another example of a new business model based on the Digital Five Forces: Combine digital space with physical space. When customers shop in a real-world store, their phone can effectively extend the inventory of that store—capturing the spend even if the store is out of stock. (The mobile device can also leverage the physical store, pointing a shopper to other items of interest or offers within the store.)

### **Reimagine Products and Services**

The online world can be seen as a massive, 24x7 focus group for companies willing to invest in using Social Media, the cloud, and Big Data analytics to derive real-time sentiment analysis on products, services, and company performance. Analyzing comments and other unstructured data can help you refine products, services, and offerings.

Many companies are embracing Big Data to move higher up the value chain. Amazon and Netflix both use data generated by streaming content to develop branded content—and both companies are now major players in the TV and film production business.

Finally, if your enterprise generates Big Data, you may be able to create a product or service based on that data. Mobile telephone companies sell location data, for example; financial services companies identify prospects for other companies.

### **Reimagine Customer Segments**

Traditional customer segments tend to be few in number and broad in inclusivity: "men aged 29–35 making between \$49,000 and \$61,000" for example. Social media and Big Data analytics enable much more granular micro-segmentation. Social media activity in particular reveals a lot about the preferences and make-up of customer segments; when combined with traditional customer relationship management



data, it's possible to get a 360-degree view of your customers. This isn't trivial: It requires cloud, Big Data, social media, and analytics expertise—but the rewards of reimagining customer segments are enormous.

### **Reimagine Channels**

The Digital Five Forces, particularly mobile and social media applications, are creating powerful new ways to serve customers in a highly contextual manner. When a mobile application, for example, interprets physical context—"Customer X, who shops at and loves Old Navy, is at the mall walking past an Old Navy store right now"—it offers an entirely new tool for reaching out to that customer.

At the same time, companies are moving from a purely physical channel to a mix of physical and digital channels or purely digital channels. With the digital channel, you gather much more data to create more personalized sales and marketing interactions. As an example, consider a retailer with an online and physical presence. A mobile application can transform the physical store experience, allowing the user to look at ratings, access more detailed information, see similar items, and receive tailored promotions.

### **Reimagine Business Processes**

In some ways, this is the most obvious form of Digital Reimagination: migration from processes that rely on physical artifacts to ones that rely on digital ones. Mobile applications managed in the cloud can leverage Big Data analytics to enable enterprises to transform paper-and-pencil tasks into digital ones, increasing speed, accuracy, and results. A digitally managed insurance claims process can begin on a tablet capturing pictures, damage assessments, and related content then upload the data to the cloud for real-time processing.

### **Reimagine Workplaces**

Finally, the Digital Five Forces are helping companies reimagine workplaces with the goal of improving efficiency across the enterprise and serving employees more effectively. The digital world is catalyzing the digital workspace. Mobile devices and the cloud are powerful business tools for communications, from texts and emails to dashboards. Enterprise social networks are fostering teamwork, creativity, and accountability.

The Human Resources function is particularly ripe for reimagination using the Digital Five Forces. Artificial

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intelligence-based systems can help reimagine people management. Hiring can use Big Data analytics on the cloud to evaluate social media and narrow a search considerably. HR can also use sentiment analysis to take the pulse of employee morale continuously without using formal employee engagement surveys.

## Reimagination Reshapes Industries

It seems obvious to us that the Digital Five Forces are already reshaping the enterprise. In some cases, people are embracing digitization. In others, they are rethinking their businesses in light of the Digital Five Forces. And a few really forward-looking companies are embarking on radical reimagination initiatives, trying to see just how far mobility, Big Data, social media, the cloud, and artificial intelligence can and will take them.

It will take them far, especially if they use these powerful new technologies not only to rewrite their rules but also to rewrite the rules for their industry. Think about what we've already seen: branchless banks with no physical presence. Auto insurers basing premiums on actual driver behavior, not broad customer segments. A reshaped media landscape where content deliverers have become content providers.

No one is the least bit surprised that the web and much more recent technologies are having a profound impact. But few realize just how much transformation is in the offing given the ubiquity of the Digital Five Forces.

## Implications and Next Steps

We believe most serious enterprises are already evaluating and adopting the Digital Five Forces (and if you're not, you should be). But our counsel is not to seek incremental improvement but to make bold, imaginative leaps. By all means embrace digitization, but set your goals on the higher levels of digital transformation and Digital Reimagination.

Use the Digital Five Forces to:

- Disrupt your business models by creating data transparency, by combining traditional physical products and spaces, by identifying and reaching new, previously unreachable market segments.



- Find new sources of revenue from products and services using crowdsourced product design; move upstream in the value chain by leveraging consumer data; monetize data by selling it to other enterprises.
- Increase market efficiency by moving from coarse segmentation to fine-grained segmentation, redrawing current segment boundaries to create new ones.
- Improve distribution capacity dramatically by creating new digital channels and by integrating digital capabilities with redesigned physical channels.
- Modernize processes by migrating physical ones to digital ones; make business processes much more data driven and improve efficiency by eliminating workflows altogether.
- Inject excitement in the workplace—and boost productivity and job satisfaction—by creating digital workspaces, making HR more data driven, and empowering employees to contribute regardless of their physical location.

In the Digital Consumer Economy, the winners will be enterprises that embrace and master the Digital Five Forces to reimagine their businesses from the ground up.

### About The Author

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As head of the Digital Enterprise Unit at TCS, Dr. Satya helps customers undertake Digital Reimagination™ projects: leveraging the Digital Five Forces (mobility, Big Data, social media, cloud computing, and artificial intelligence) to create new business models, business processes, products and services, customer segments, channels, and workplaces.

Dr. Satya has more than two decades of experience with digital technologies; before he joined TCS, he led two successful startup companies in the mobile application and Big Data spaces. Dr. Satya is the holder of 10 US patents. 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 manages the Digital Enterprise Unit from the TCS office in Santa Clara, California.

### About the TCS Digital Enterprise Unit

TCS adapts the capabilities of the digital five forces—Mobility and Pervasive Computing, Big Data and Analytics, Social Media, Cloud, and Artificial Intelligence and Robotics—to the unique needs and opportunities of each industry. We leverage a combination of these technologies to help clients digitally reimagine their business models, products and services, customer segments, channels, business processes, and workplaces to gain sustained competitive advantage.

Our experienced global team includes strategy experts, business analysts, digital marketers, user experience designers, data scientists, and engineers trained and certified in the latest technologies. By combining our technology vendor partnerships, our pre-built customizable products and reusable assets, and our deep industry expertise, we offer enterprises everything they need for a complete digital transformation—from strategy and use cases to system implementation and maintenance—and everything in between.

### Contact

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### About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting, and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering, and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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