

Every Enterprise is an Information Business

The rise of information in virtually every aspect of society is revolutionizing work and personal life. Every enterprise is now an information enterprise, either by plan or by default. This dynamic will only intensify in the future as the information explosion along with long-term trends in technology, regulation, demographics and the environment are disrupting virtually every market. Economic volatility and connected markets, combined with a plethora of information, only increase the pace, magnitude and the uncertainty that disruption brings in a world of both bits and physical products.

Leading enterprises are turning the competitive battle ground into a “datascape”, and those that grasp this inflection will show stronger performance. As evidence: a recent MIT study reported information centric enterprises had 6% higher productivity and 4% higher profits. This performance stems from reduced resource consumption, quicker service response, new products, increased customer loyalty, reduced risk and capital needs. Examples of success cut across new world technology companies to industrial sectors. (See Table 1 and 2)

The hype of new technologies--“big data,” “Internet of Things,” “M2M,” “3D”-- has caught the attention of most enterprises. In this world of information explosion, enterprises have to be conceived, led and operated with the attributes of an “information product” enterprise. The challenge revolves around what future to aspire to, in what sequence, and at what pace to transition. This challenge is all the more severe given the uncertainty of new technology, customer adoption, market and economic volatility, regulations and government policy. Enterprises need inventiveness to navigate the shift and take advantage of the transformative power of information to build a competitive moat. The challenge is **not** the technology and its power per se, but more often the organization’s capacity to imagine future products, business models, operations and organization to act in this connected, fast paced, transparent, multi-tasking and real time new world.

Promise

The promise of the transformative power of information comes from higher order computer powered intelligence, personalization and instant access. Higher level of intelligence from diverse and real time information flows with instant access are dramatically setting new standards of human interaction, behavior and decision making in both work and personal contexts. Smart mobile devices, for example, allow people to access intelligent information when, where and in the form they desire, from rational and emotional lenses.

This new promise is made possible by emerging hardware and software technologies that make cost effective access to vast and exponentially expanding reservoirs of data possible while simultaneously adding analytical power to convert the data into

actionable intelligence at nano speeds. Ubiquitous mobile devices and measurement sensors are increasing exponentially analyzable data that offer new sources of information and insight (See Table 2). For example:

- Biosensors track health data; smart phones track where people are shopping; utility meters track household activity by capturing consumption rates; sensors track aero engines and transportation fleets with the goal of optimizing equipment performance; sensors follow patient movement in a hospital; GPS tracks home grocery delivery.
- “Big data technology” distills the intelligence from the vast reservoir of data and expands the capacity to describe, explain, predict, prescribe and guide activities of humans and machines. Every personal or work activity can be tracked, guided and personalized instantly, shifting productivity and improving quality of decision outcomes.
- Information powers the transformation of every organization and industry in the ways that:
 - Products are created, produced, delivered and serviced;
 - Customers are engaged – whether it be for marketing or relationship building;
 - People interact, work and learn;
 - Risks and regulation controls are handled;
 - Performance of individuals and groups are tracked and measured.

With the growing value of information, many companies now see it as their most valuable and differentiated asset, next to their employees.

Change

The ability to unlock the transformative power of data will be a game changer for businesses positioned to seize the opportunity.

- The game changer stems from the ability to not just mine the data in order to personalize the product around the customer, but in the context of its use, while learning from experiences and outcomes **in real time**.
- The key is beyond harnessing data per se, but having insight into collecting and connecting the right sets of information and analytics to create 360 and lifetime views of customers as their user attributes change in all occasions of use and transactions.

Enterprises in information markets or enterprises fueled by information and even enterprises in the realm of “physical products” all have an opportunity to unlock the transformative power of data, analytics and technology.

- Enterprises where the core product is information and content will see new ways to create value – what content is provided, how users absorb and act on the information they choose to access any time and anywhere.

- In other enterprises, information offers the means to add value to existing products; develop new products and services; and, open new revenue generating avenues from monetizing data, analytics and technology capability.

Technologies like 3-D printing, Nano, Sensor driven Internet of Things, and Fog Computing are also disrupting the physical world. With these technologies, production shifts closer to the consumer's location.

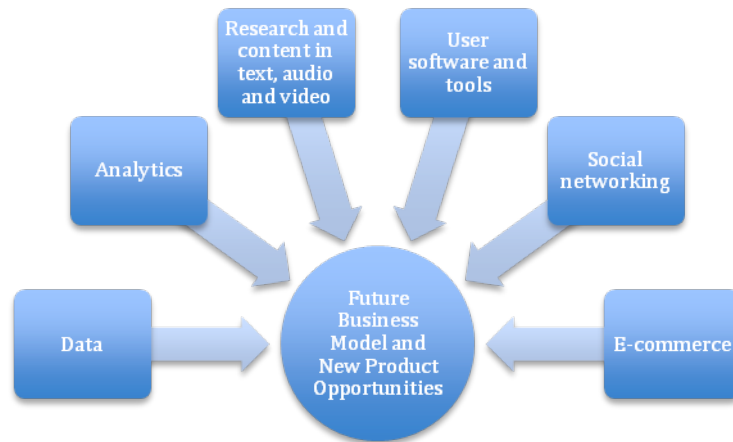
- Restaurants will deliver an order placed through a smart device in the middle of Central Park with the delivery person guided to the specific location by g-map.
- Manufacturing in a batch of one at point of use has the potential to change the economics of manufacturing, distribution, buying and consumption in ways that are limited only by imagination.
- Disruption in the use of these technologies has the potential to affect other parts of the economy such as storage, real estate and transportation.

The customer will benefit from the value added along with superior, more relevant and measurable product experience. These technologies have the potential to dramatically alter the work environment, what people do, how they are recruited, trained, measured and rewarded. The internal workflow becomes more efficient and analytical, making the work environment more stimulating for employees. Risks and controls can be handled and mitigated at a customer, product or transaction level.

The enterprise will have the potential to improve profit leverage in at least seven ways:

- 1) Infuse existing product lines with data knowledge to enhance value and better target, repackage and reposition the product line, and market share gains are a natural result of such targeting
- 2) Open the prospect of an entirely new marketable product line arising from data and digital capabilities
- 3) Stimulate and motivate customer demand from quick prediction algorithms
- 4) Price to capture a fair share of the value received by the user
- 5) Improve staff morale by making the work process more intellectually stimulating and interesting
- 6) Drive efficient workflow to function seamlessly across internal and external groups globally
- 7) Measure and mitigate risks and the associated capital and costs

Information product business boundaries have continued to evolve to combine curated text, data, analytics and workflow tools and software. Social networking and e-commerce will only push the boundaries further. The future business model for information intensive industries will be a connected mix of several elements that increase the potential for new products and business models. These are:



The impact of blurring boundaries among these elements, combined with expanding regulations and rising risks in the economy, markets, financial sector, cyberspace and environment demands a strategic transformation in the ways organizations operate to re-invigorate creativity and growth.

Challenge

The promise and potential is huge and growing; however, the challenges are many and present in every aspect of a business. Enterprises face a transition in building the next generation information products and services:

- **Data:** Rushing to secure unique and comprehensive data and being the first to develop the next insightful set.
- **Product Packaging:** Matching analytic breadth to user outcome remains an art, while packaging data, analytics and presentations increasingly require design trade-offs around user preferences and context of use.
- **Operating Model:** Many trade offs are required across product, operations, and revenue model to balance user value, costs and speed to market, e.g. : level of product standardization vs. customized service; subscription and recurring vs. transaction revenue; cost vs. value based pricing; global vs. domestic customization.
- **Organization:** Organizing and leading a more decentralized, tracked, open, transparent and fast paced business; the nature of tasks change as work processes become more information and judgment intensive and less people task driven.
- **People:** Talent demands for product designers; data scientists to analyze; data operations to source and process massive amounts of information; business leader skills to interpret and act on the information; marketers to engage around content.
- **Operations Scale:** Realizing leverage from scale and continual innovation of next “new” killer applications to stay refreshed.
- **Content Branding:** Maintaining brand reputations that are influenced by “content” and user experience.
- **Risk and Regulations:** Managing increasing risks and legal liability from regulations creeping into traditionally unregulated information markets.

Enterprises face significant hurdles in leveraging the data explosion. These include organizational gaps in leadership expertise and an entrenched mindset coupled with the fear of future uncertainty. This creates stasis and a sense of being overwhelmed. Additionally, the staff often is unable to view technology properly, i.e. as the enabler and means, not the end or a hurdle.

Path Forward

Capturing the ever-expanding information promise must be rooted in the basics:

- Beginning with the user and the existing use or new use or problems that user needs to solve;
- Identifying what is needed to solve a user problem better than one’s competitors;
- Understanding what value and benefit the user will derive from solving the problem – new opportunity, time to market or serve users, reduce costs, risks and uncertainty;
- Determining how much of the benefit the user will be willing to share and pay for;
- Pulling the levers to create operating scale;
- Creating strategies that will make the product and use differentiated and relevant.

These sound basics apply to either an information business or a business looking to capitalize on its information assets generated as a by-product of its core business or to transform the way it operates.

Table 1

Customer Campaigning	Retailer personalizes ad and email targeting, and search engine optimization
Service Response	Casino uses video analytics to spot service issues and adjust staffing levels real time
New Products	Social Network brought millions of new customers with a broad array of product offerings and features, including People You May Know, Groups You May Like, Jobs You May Be Interested In, Who’s Viewed My Profile, and several others
Customer Retention	Bank uses big data to monitor customer “journeys” through the tangle of websites, call centers, tellers, and other branch personnel to understand the paths that customers follow through the bank, and how those paths affect attrition or the purchase of particular financial services.
Fraud Detection	Health Care Insurers using a new crop of big data solutions for fraud detection— monitoring data patterns to pinpoint “points of compromise
Reputation Risk	Enterprises use social networking posts, including Tweets and Facebook posts, to determine the user sentiment related to particular companies, brands or products
Supply Chain	Apparel manufacturer adjust the supply chain at the earliest possible time and react quickly to changes in consumer demand

Table 2: Sensor Generated Data Performance

Customer Campaign	Retailers use location data to offer rewards and product information to motivate consumer to purchase at retail versus show rooming
Product Performance	Manufacturers use sensor-data analytics to monitor the health and performance of their products and to work proactively to address service and maintenance issues before they lead to product downtime.
Predictive	Predictive maintenance. Airlines use data from airplane sensors to proactively manage maintenance, improve reliability, reduce unplanned service work, and mitigate risk.
Asset Utilization	Fleet sensor data from helping businesses to enable intelligent route optimization to reduce fuel costs and emissions harmful to the environment.
New Service	Healthcare biosensors used to enable better and more efficient patient care across a wide range of healthcare operations spawning new tele-health/remote care services and reducing care costs
Product Usage	Smart appliances provide data to determine which product features are most used and to monitor the performance of their appliances.
Risk Pricing	Auto telematic sensor data offer drivers insurance rates based on the amount of driving they do, their driving habits, and even where they drive and park
Risk Compliance	Energy exploration sensor data verify compliance with safety requirements and spot merging problems