Intelligent use of technology: The key to successful business transformation

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Taking a deliberate approach

Changing business landscape

With the rising importance of technology driven business transformation, emphasis on certain enterprise and consumer-based opportunities and challenges emerges. Business leaders need to frame strategies in order to grab right opportunities at the right time to remain competitive in the current market.

To take advantage of the game-changing opportunities enabled by current technology mega-trends, businesses are looking to equip themselves with the latest tech advancements. The five mega-trends that will impact the technology business in a big way and most likely drive enterprise business transformation in the coming years include - **mobile devices, data analytics, cloud computing, social media and Internet of things.**
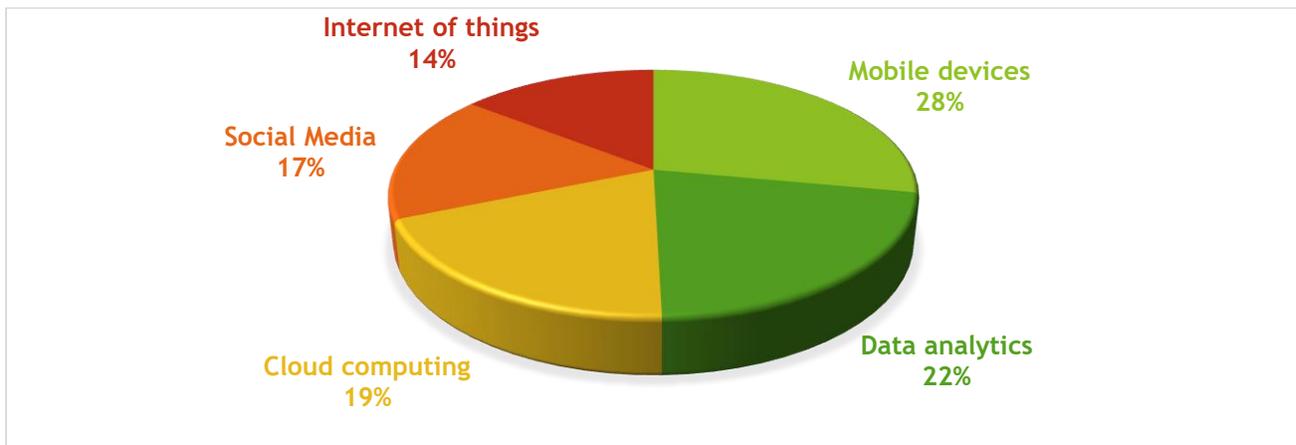

Figure 1: Biggest Technology Business Impact-Makers[1]

In addition, growth of these technologies will result in fueling innovation across many industries including IT, consumer markets, health care, automotive and manufacturing.

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[1] How the Digital Age Is Changing Business Forever, Dennis McCafferty, April, 2015
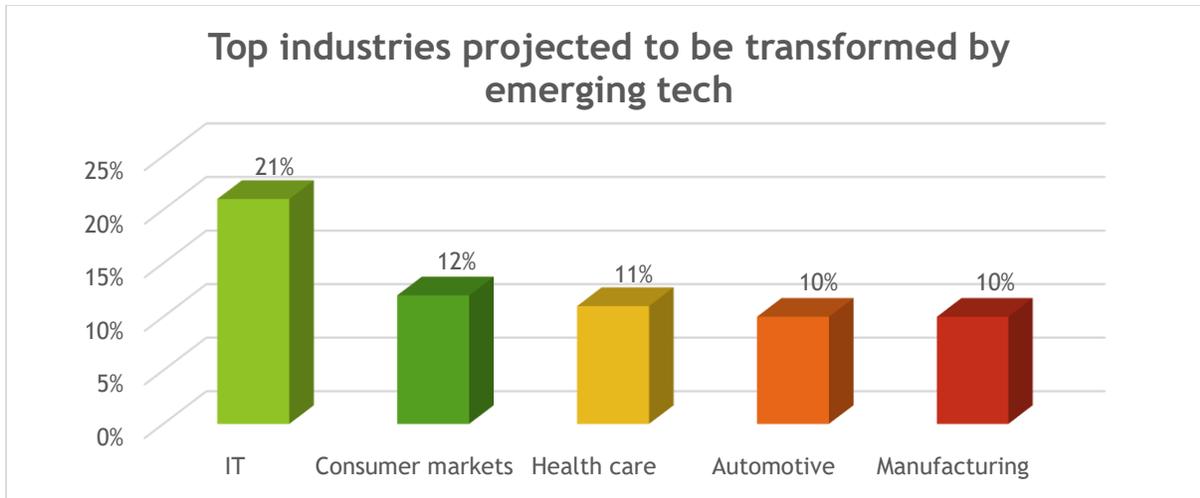
Figure 2: Top industries projected to be transformed by emerging tech[2]

Technologies that make the biggest business impact

Internet of Things – catalyst for real-time business models

Internet of Things (IoT) is creating unique opportunities for both individuals and organizations to realize greater business value by interconnecting people, processes, data and things. The ultimate aim of IoT is to increase the operational efficiency, evolve new business models, and improve the quality of life. IoT brings numerous opportunities for new, innovative products and services that can be offered through smart devices, machines and products. IoT is already transforming industries and will generate even more significant change in the coming years.

Associated risks

With more than 10 billion connected devices, which are expected to reach 50 billion by 2020, IoT brings significant risks for businesses and consumers as more devices come online. This indicates that with more connected devices, more personal and business data remain in the cloud and be exchanged back and forth giving rise to the possibility of being compromised.

> *"The IoT is big news because it ups the ante: 'Reach out and touch somebody' is becoming 'reach out and touch everything'."*
>
> - *Parker Trewin, Senior Director of Content and Communications, Aria*

In such scenarios, IoT can act as infection vectors causing damage to a great extent and spreading malware across organizations. These concerns were raised by twenty six percent and thirteen percent of people surveyed by the SANS Institute[3].

Take away

The Internet of Things (IoT) revolution has enormous potential to be astonishingly transformational and, at the same time, highly disruptive to business. The developers of IoT applications should focus on

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[2] Top Technologies for Business Transformation, Dennis McCafferty, Oct 2014.,

Source: http://www.cioinsight.com/it-management/innovation/slideshows/top-technologies-for-business-transformation.html#sthash.PMhdSZtH.dpuf

[3] New Opportunities, New Risks: The Internet of Things and Business Innovation, January 2015
Source: http://www.cio.com/article/2865766/internet-of-things/new-opportunities-new-risks-the-internet-of-things-and-business-innovation.html

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building security from scratch, including ways of updating the system in a secure way. The security elements include identifying risks, reviewing the complete environment and eliminating threats. In addition, they should keep IT networks properly segregated from the IoT to lock a security issue at its root and prevent its spreading in the entire network. They should not rely on traditional IT security controls such as firewalls, intrusion detection systems and anti-virus tools, as these systems are not enough to protect IoT assets. Hence, the need to deploy multi-layered controls is required to mitigate threats from IoT components that are not well equipped to deal with security threats and have less support for security patches and software updates.

Greater visibility into real-time information

Big data tools have enabled organizations to manage resources, anticipate activity relevant to their business and make informed decisions faster. Real time monitoring and evaluation of events have led to a positive impact on performances or operations of a business. It is reported that the quality of decision gets improved through real time analysis of significant data.

According to a survey done by Forbes, "Of the organizations that used big data at least half the time in their marketing campaigns, three in five (60%) said that they exceeded their goals. More than nine in 10 companies (92%) who said that they had made sufficient use of big data, met or exceeded their goals, while just 5% of them fell short."[4]

> "Without big data, you are blind and deaf and in the middle of a freeway."
>
> - Geoffrey Moore, author and consultant

Associated risks

Privacy and confidentiality issues are one of the biggest risks associated with big data. Apart from these, due to large volumes of data it may become difficult to compute the accuracy and uncertainty, which may often lead to a bogus pattern or correlation of data among the variables having no existence. This results in misleading the decision makers in the process of analyzing data.

Take away

Most organizations are still not ready to invest on the IT infrastructure and rely on cloud-based applications to manage big data. In order to improve the security, responsibilities of the cloud service providers and users must be predefined. Also, the services must be monitored and audited regularly to maintain data integrity and confidentiality.

In order to improve data quality, the data must be well sanitized by applying techniques such as, filtering, cleansing, pruning, conforming, matching, joining, diagnosing, among others. To maintain accuracy, the data source should be linked and accessible to consumers enabling them to review and correct the information if needed.

Mobilize business operations by 'Computing Everywhere'

"Computing everywhere" refers to services available on all devices and platforms, which help in mobilizing the business process. This has been a topic of great interest for enterprises so far and now these enterprises are defining their plan of action to bring mobility into the workplace. This enables the user to easily connect to the ERP system using any device which ultimately results in increased employee productivity, better tracking and decision making at all levels with improved quality of information.

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[4] Survey Demonstrates The Benefits Of Big Data, November 2013
Source: http://www.forbes.com/sites/forbesinsights/2013/11/15/survey-demonstrates-the-benefits-of-big-data/

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Associated risks

If proper precautions or security policies are not put into practice, mobile IT devices are prone to security breach by unauthorized entities. The devices that are lost or stolen, virus-infected mobile devices and web-based threats are the main concerns that organizations face.

Take away

When using mobile devices that connect to the company network, security should be of utmost importance. The company network needs to be secured through data encryption, reinforcing passwords and protecting from unauthorized access. Businesses need to control information access by defining levels of access based on the sensitivity of information. With defined mobility and security awareness programs, organization can keep users happy and the network secure.

Blend into the digital world with Wearables

Wearables are tiny computers that users can put on their bodies. The devices being portable and hands-free can help organizations in improving workplace productivity and overall efficiency. Remote workers stay connected with the office, which helps them in communicating as and when required. For example in retail business, wearables can help in faster and effective customer service and purchasing, and greater opportunity to advertise special deals. With wearables, business has become more mobile than before.

Associated risks

The risks associated with these devices are same as that of the Mobile IT devices – the security issues. The devices are ON all the time making them vulnerable to attack by cyber criminals. Even employees from within could pose a threat by restricting wearables use by disabling certain functionalities.

Take away

Upgrading the network and computer security regularly will help organizations in preventing any loss of data or security breaches coming out as a result of wearable technology implementation. Implementing advanced security may help in analyzing the data flow while identifying the device types at the same time. Also, the policies need to be defined for the use of technologies in enterprises, so they create value, not hamper efficiency.

Gain valuable insights with Smart Machines

This decade, the world is going to watch the emergence of a broad and powerful range of new systems – Smart Machines. As the name suggests, the machines will be capable of understanding the environment, learn for themselves and act autonomously. The smart machine era will be the most disruptive in the history of IT.

Sixty percent of CEOs believe that these smart machines absorbing millions of middle-class jobs within 15 years is a "futurist fantasy," according to Gartner's 2013 CEO survey. However, Gartner predicts that smart machines will have widespread and deep business impact within only seven years through 2020.[5]

Associated risks

One of the most concerning issue is the financial risk that evolves from adopting a new technology and the return on the investment made. Besides this, smart machines also bring in the risks of operability, sustainability and maintenance of the assets that it is made of.

Take away

Smart, connected machines require robust security management to protect the data flowing to, from, and between other machines. These machines need to be protected against unauthorized use and should be accessed securely between the product technology stack and other systems. This will require

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[5] Gartner Says Smart Machines Will Have Widespread and Deep Business Impact Through 2020, October 2013:- http://www.gartner.com/newsroom/id/2605015

new authentication processes, secure data storage, protections against hackers for both product data and customer data, and controlled access of privileges.

Improve production efficiency with 3D Printing

3D printing has been there for decades and also known as addictive manufacturing. It means building an object layer by layer. This is now becoming much convenient, affordable and efficient. In addition, new materials and techniques are making many new things possible, and the Internet is making this happen. Technology has matured to the point where we are reconsidering industry. The technology once used for prototyping is quickly becoming universal and is being adopted in other areas of material world, including fashion and domestic furnishings, transportation, medicine, architecture, aerospace and defense, automotive etc.

Canalys, a market research firm, anticipates changes ahead and predicts that the global market for 3-D printers and services will grow from $2.5 billion in 2013 to $16.2 billion in 2018, a CAGR of 45.7 percent.[6]

Associated risks

With the rise of increasing popularity of 3D printing, several associated risks emerge that include unregulated manufacturing, risk related to counterfeit products, intellectual property, product liability and other safety and security concerns. 3D printing enabling mass production is subject to government regulation and inspection. It also increases the risk of counterfeit products, making the digital design vulnerable to be captured by third-parties. The digital design when shared across unencrypted boundaries imposes potential security risks.

Take away/Opportunity

Before undertaking any assignment, the brokers must first assess the company's risk management profile to prevent risks emerging from unregulated manufacturing. To protect the integrity, file sharing and transferring must be processed within secure boundaries with well-framed encryption and firewall.

Conclusion: What businesses can do next

The key attributes required in every business to stay relevant in the technology market within the next 5-10 years include the ability to spot new opportunities, demonstrate transparency, and innovate in an agile way. The advancements in technology can enable businesses to ensure that these aspects are built and sustained. A thoughtful and deliberate approach would warrant sustainability and growth.

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[6] The road ahead for 3-D printers, March 2014:- https://www.pwc.com/us/en/technology-forecast/2014/3d-printing/features/future-3d-printing.html

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