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Technological challenges for Leaders in a global economy



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Technological Challenges for Leaders in a Global Economy

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There is a bidirectional causal relationship between leaders and their environment. They are influenced by the environment but also they can influence their environment.

“We live in the midst of a revolution in communication technologies that affects the way in which people feel, think, and behave. The web-based mass media has become the space where political and business power strategies are played out; power now lies in the hands of those who understand or control communication” (Castells, 2009). Mass self communication and all kinds of technology challenge leaders and how they will guide others in this new era.

The advanced information technology (AIT) enabled economy is creating new context for leadership. Its key characteristics of an AIT enabled economy are real time information availability, greater knowledge sharing with stakeholders, and the use of information knowledge to build relationships (Avolio & Dodge, 2001). Leaders are call to play a more proactive role in creating the social structures that foster the implementation of AIT.

The AIT includes, but not restricted to, email systems, message boards, groupware, management systems, social networking systems (Avolio & Dodge, 2001). “In this context the advanced information technology (AIT) is defined as tools, techniques, and knowledge that enable multiparty participation in organizational and inter organizational activities through sophisticated collection, processing management, retrieval, transmission and display of data and knowledge” (DeSanctis & Poole, 1994).

The AIT has grown tremendously in several countries, for example, The Indian information technology industry has played a key role in putting India on the global map. Thanks to the success of the IT industry, India is now a power to reckon with. According to the National Association of Software and Service Companies (NASSCOM), the apex body for software services in India, the revenue of the information technology sector has risen from 1.2 per cent of the gross domestic product (GDP) in FY 1997-98 to an estimated 5.8 per cent in FY 2008-09 (India Brand Equity Foundation, 2009).

Some researchers such Susan Annunzio (2001) used the term “eLeadership” to refer a leader who leads in an AIT environment, and defined as "shaking up your corporate culture and fostering an attitude of speed and flexibility in order to facilitate the internal transformation to an environment for the new economy." (p. 12). According to Annunzio (2001), eLeaders have the following qualities: honesty, responsiveness, vigilance, willingness to learn and relearn, sense of adventure, vision, and altruism. In addition, “in 2000, the Alliance with Forrester Research in the United States, surveyed 546 US business leaders across a wide variety of industries to learn more about the skills and experience necessary to function effectively in an AIT. They learned that the foundation skills traditionally associate with leadership; such as communication, retention,

motivation, direction setting, still apply but changing. However, technology is changing the context in which we work, accelerating ambiguity, the rate of change, and the need to work collaboratively across the borders. As a result many of our assumptions about leadership, teams and organizations must evolve” (Pulley, Sessa, & Malloy, 2002)

Pulley, et al. (2002) also used the term eleadership, however several researchers, including myself do not think that adding the “e” would make it a different leadership. Leaders have always dealt with several kind of technologies in each of different eras. Technology has traditionally played a very important role in facilitating protest for example; remember that the early anti-communist protests in Poland were facilitated with the help of the Xerox machines!, and now Iran twitter users have also use technology to protest. The devices or technology changed. In the last decade, we have seen technology play a crucial role in helping people gather and, most importantly, get heard to learn how leadership react to technologies or vice versa, we will have to briefly examine the context in which leadership process is emerging, and them define what a leadership role will be in this process.

The context is well defined by the Adaptive Structuration Theory (AST). This theory is formulated as “**the production and reproduction of the social systems through members’ use of rules and resources in interaction**”. DeSanctis and Poole (1994) adapted Giddens' theory to study the interaction of groups and organizations with information technology, and called it Adaptive Structuration Theory. AST criticizes the technocentric view of technology use and emphasizes the social aspects.

Groups and organizations using information technology for their work dynamically **create perceptions about the role and utility of the technology**, and how it can be applied to their activities. These perceptions can vary widely across groups. These perceptions influence the way how technology is used and hence mediate its impact on group outcomes.

Figure 1 shows that a combination of structural features of the AIT (restrictiveness, level of sophistication, comprehensiveness) and spirit (decision process, **leadership**, efficiency, conflict management and atmosphere) [p1] will enter in a social interaction, where the attitude toward appropriation will occur during a decision process [p5] generating a decision outcome [p7] that could be but not limited to efficiency, quality, consensus and commitment.

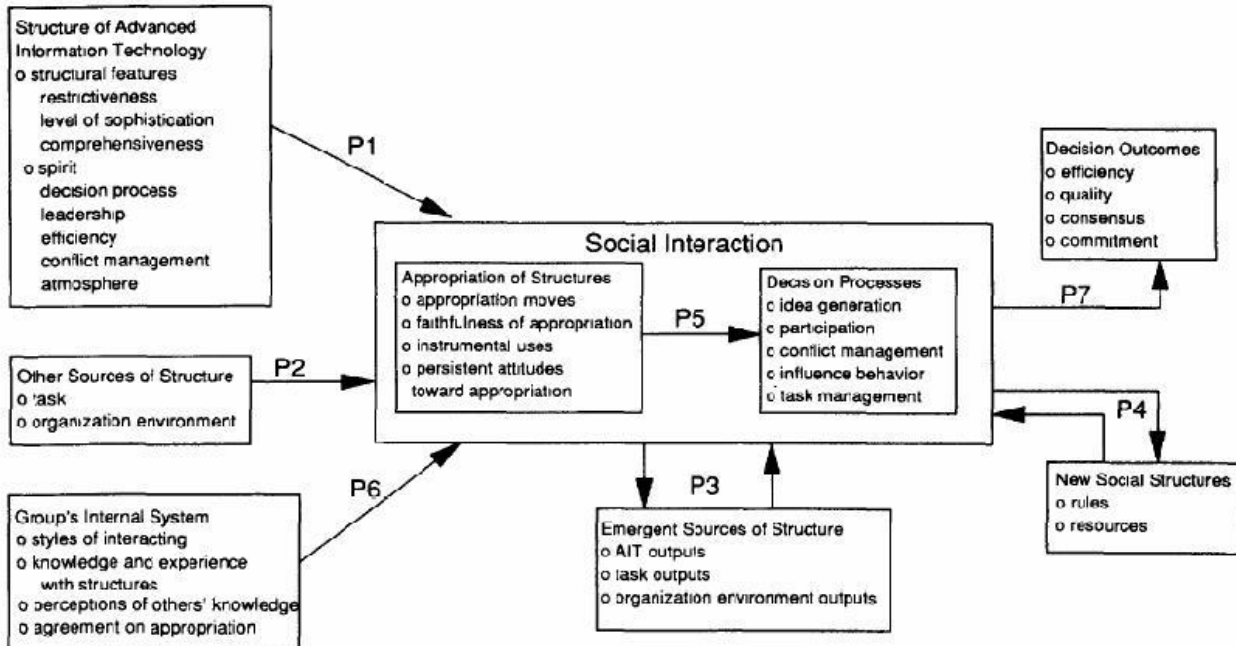


Figure 1. Capturing the complexity in advanced technology use

Source: DeSanctis, Geradine & Poole, Scott, M. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, 5(2), 121

AST is a viable approach for studying the role of advanced information technologies in organization change and how the role of leadership is shaped in this new structure. AST examines the change process from two vantage points 1) the types of structures that are provided by the advanced technologies and 2) the structures that actually emerge in human action as people interact with these technologies.

I believe that there is a bidirectional causal relationship between leaders and their environment. They are influenced by the environment but also they can influence the environment. In this lecture, we will talk about how technology as part of the environment challenges leadership in this global economy. How leadership influences technology and finally we will discuss about the leadership balancing act for success. We will discuss all under the AST framework.

1. *Advanced Information Technology Challenge Leadership*
2. *Leadership influences Advanced Information Technology*
3. *Balancing act: Leadership and Technology*

Advanced Information Technology Challenge Leadership

Technology affects our organizational environment and structure. Several empirical studies show how technologies challenge some industries, and, their leadership. Political leaders are also affected, Castells (2009) argues that in the new network society of instant messaging, social networking, and blogging--"mass self-communication"--politics is fundamentally media politics. This fact is behind a worldwide crisis of political legitimacy that challenges the meaning of democracy in much of the world.

Technological innovations can have important strategic implications for individual companies, and yet not all technological change is strategic beneficial. Technology challenges political leaders, as the individuals having access to it, can challenge some policies or leaders decisions. For example, on November 16, 2009 in Shanghai, China, President Obama, explained to a room full of Chinese Students that the free-flow of information strengthens societies by allowing citizens to demand accountability from their leaders. He was referring to the use of Twitter banned on China. It seems that as of today, the Chinese authorities have blocked internet access to Twitter, Flickr, Bing, Live.com, Hotmail.com and several other sites. Wordpress, YouTube, Blogger are also blocked. Chinese authorities want to quiet down the entire major social networking and social media part of the web ahead of the 20th anniversary of Tiananmen massacre on June 4th. In this case Chinese leaders felt that the uses of the social networking technology is challenge their social order. Chinese State media have alleged that social media "spread misinformation" and even that outsiders used them to orchestrate the violence. In this case, considering the AST in Figure 1, the group internal interactions (Chinese students –p6) appropriate technology that once in social interaction area (p5) to affects leadership, with the intention to create new social structures (p4).

Technology also affects the industry, Nobel laureate Lawrence Klein examined the role of information technology on increasing productivity in the finance sector, IT is especially relevant in the financial industry in that it was one of the first sectors to use computer services on a large scale—taking off by about 1980 in using electronic transfer, ATM machines, automatic accounting systems and other automated “back office” services to keep abreast of global markets and provide almost instantaneous services to customers (Lawrence, Saltzman, & Duggal, 2003). New information technologies are rapidly unsettling well-established business models based on the services of third-party intermediaries in executing transactions. Some of the traditional intermediaries in addition to banks and brokerage firms adversely affected by new technologies firms include postal services, retailers, real estate agents, auctioneers, and travel agents.



Meditation time!. 15 minutes

Watch this video, and meditate how technology would challenge your area of work. This video is about Elizabeth Fugitt, Chief, Records Management Application Unit, Federal Bureau of Investigation , Meeting New E-Discovery Requirements through Strategic Data Management.
http://www.youtube.com/watch?v=L_KM4HWVOSY

Leadership influences Advanced Information Technology

It is our government and policies that guides their countries to reach AIT. Leaders and the globalization affects technology, for example, due the world crisis, in Mexico, on November 17,

the congress reduced US\$900 million of their budget of science and technology for 2010 due the global economic crisis (Melesio, 2009). Then in this case, it is the government who affects the money invested in science and technology assigning a specific budget to that area, but that decision was done based on the current global circumstances.

The TAI, a composite index of technological achievement, reflects the level of technological progress and thus the capacity of a country to participate in the network age. A composite index helps a country situate itself relative to others, especially those farther ahead. Many elements make up a country's technological achievement, but an overall assessment is more easily made based on a single composite measure than on dozens of different measures (Desai, Fukuda-Parr, Johansson, & Sagasti, 2002).

The TAI has eight indicators, two in each of the four dimensions:

- *Technology creation*, measured by the number of patents granted to residents per capita and by receipts of royalties and license fees from abroad per capita.
- *Diffusion of recent innovations*, measured by the number of Internet hosts per capita and the share of high-technology and medium-technology exports in total goods exports.
- *Diffusion of old innovations*, measured by telephones (mainline and cellular) per capita and electricity consumption per capita.
- *Human skills*, measured by the mean years of schooling in the population aged 15 and older, and the gross tertiary science enrolment ratio.

As an example of how countries are rated, In this technology achievement index United States was rated number 2, Japan; 4, Germany; 11, China; 24, Mexico; 32, Chile; 50, Islamic Republic of Iran.; and 63, India (Desai, Fukuda-Parr, Johansson, & Sagasti, 2002).

What if I am in country with index 82? Am I in a disadvantage? No, although as a leader, I should push my own country needs for education, and also train my own people. I should also learn how to deal with my own team and my own environment. However, in the framework of a company, the true measure of **innovation is the ability to convert technology into products, services and solutions that increase efficiency, effectiveness and overall company performance** (Van der Does & Caldeira, 2009). **One of the main challenges leaders face today is how optimally to integrate human and information systems in their organization to fully leverage AIT** (Avolio & Dodge, 2001). Leadership is likely to play an important role in the adaptation between AIT and its environment. As Figure 1 shows organizational members, especially leaders play a major role in the creation and interpretation of AIT. AIT's interpretation determines how it used, what it can do, and ultimately its contribution to organizational performance (Avolio & Dodge, 2001).

Several cases of this AIT interpretation was used can be mentioned, one of them was Thompson case, Thompson formerly one of the world's greatest newspaper publishers, which decided in 2000, the all time best year for newspaper ad revenues, to get out of papers entirely (Colvin, 2009)! Thomson, now Thomson Reuters was adapting to the world it saw coming.

Leadership play a key role in the AIT assimilation, several industries have found the way to learn what to use or not use about technology, and train their people to affects their adaptative

structuration. The leaders see this need coming and act towards it, examples are on several areas, industry, health, education.

For example Xerox hired a consulting firm to create a leadership development program that would address technological and changes issues in a practical way (Pulley, Sessa, & Malloy, 2002).

Balancing Act for Success

It is important to consider how AIT interacts with leadership to influence both the structure and effects of leadership and how leadership, in turn, might influence AIT's adoption and effects on organizations (Avolio & Dodge, 2001).

President of the United States, Barak Obama harnessed the Internet to help raise money and rally supporters during 2008's historic election, believes in the power of the web. In 2008, his website managed by Hughes (co-founder of facebook) mybarakobama.com allowed Obama supporters to create groups, plan events, raise funds, download tools and connect with one another. The numbers talk with themselves, by the time the campaign was over, volunteers had created more than 2 million profiles, planned 200,000 offline events, formed 35,000 groups, posted 400,000 blogs and raised 30 million dollars. That is using technology for success!

“Obama team acted using virtual teams, a new challenge for a leader, is a group of individuals who work across time, space, and organizational boundaries with links strengthened by webs of communication technology. They have complementary skills and are committed to a common purpose, have interdependent performance goals, and share an approach to work for which they hold themselves mutually accountable”. A leader in a global world will have to learn to master these virtual teams.

“Unlike any previous time in our history, it is imperative that leaders have the ability to master new technologies, and in particular, developments in information technology. Knowing how to capitalize on the advantages of evolving communications systems is essential. As Frances Hesselbein from the Peter F. Drucker Foundation remarked in her interview, “the globalization of ideas is far more powerful than the globalization of business.” Information and knowledge are replacing physical resources as the most important currency in the world. Great leaders of the future will be good interpretive thinkers who now how to look at both the big picture and the micro vision and propose realistic solutions. They must be able to help communities comprehend and act on complex interconnected issues and problems with intelligence, creativity, and good judgment.” (W. K. Kellogg Foundation Building Leadership Capacity for the 21st Century A Report, http://www.wkcf.org/Pubs/CCT/Leadership/WKKF.LeadScan_00312_03800.pdf)

“dramatic changes are impacting the social, economic, natural and political environments of people and communities throughout the world. While these impacts are as diverse as the communities themselves, they do present both similar and unique challenges and opportunities that demand leadership at all levels of society in order to create and sustain social progress. Effective leaders know how to marshal resources and motivate people to solve problems in their communities, whether that be a rural town in Appalachia, a barrio in Mexico City, or a township in South Africa. Successful leaders help communities learn to influence and respond to national,

regional and global issues and events, by encouraging people from diverse socioeconomic, cultural, and religious backgrounds to work together, improving the quality of life for all.” (W. K. Kellogg Foundation Building Leadership Capacity for the 21st Century.

We have discussed that Technological innovations can have important strategic implications for individual companies and can greatly influence industries as a whole.

Before we discuss what leaders can do in this new global world, watch the following video



Meditation Time – 15 minutes

Watch the video from minute 12 to 18, the presenter talks about patiently achievement consensus. The video is Chuck Harrington, Chairman and CEO, Parsons Corporation Visit UCLA Anderson School of Management, in his presentation “Leadership Skills and Style for a Global Technology”

<http://www.youtube.com/watch?v=cmNFVMMu39c>

“AST considers that it is useful to consider groups and organizations from a structuration perspective because doing so: (a) helps one understand the relative balance in the deterministic influences and willful choices that reveal groups' unique identities; (b) makes clearer than other perspectives the evolutionary character of groups and organizations; and (c) suggests possibilities for how members may be able to exercise more influence than they otherwise think themselves capable of” (DeSanctis, Geradine & Poole, 1994).

We should learn that our mental models of leadership must evolve to embrace the changes brought by technology. Leaders should consider the AST (a, b, and c) and may follow 1-2-3 step to achieve success in this globalization as described by Robson. As Robson (2009) advice in his article *changing systems, changing minds*; leaders should

1. Build the will for change
2. Cultivate promising improvement ideas
3. Put those ideas into action through effective leadership and execution

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