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Boards and Technology – The Competitive Risk and Promise of Exponential Technologies

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TMS Academy

TMS Academy advances industry and enterprise performance by working with Boards and C-suite executives to examine and share the latest developments affecting business. TMS Academy's latest Directors-in-Dialogue session "Boards and Technology: The Competitive Risk and Promise of Exponential Technologies"[1] brought together 50 Board Chairmen and Directors of leading Asian companies to explore, discuss and debate the implications of emerging exponential technologies. Facilitated by Stanford University's Dan Siciliano, Director of the Rock Center for Corporate Governance, the dialogue was enriched by a team from Accenture who introduced best practice insights, leading edge research,

Big Bang Disruption and other thought leadership, and the latest technology trends. Pierre Noel, Microsoft's Asia Pacific Chief Security Officer, engaged the group on cyber risks and the importance of awareness and mitigation. A panel comprising César Cernuda, President of Microsoft Asia Pacific and Simon Israel, Chairman of Singapore Telecommunications (SingTel) shared perspectives on the role of Board Directors in accelerating the embrace of exponential technologies.

The unmatched expertise and varied experience across the participants and subject matter experts created an unprecedented environment that produced insightful discussion and important actions to move forward.

50 Board Chairmen and Directors from leading companies across Asia convened to discuss the impact of exponential technologies on their industries and the immediate actions that Boards must take in this new disruptive era.

Digital technology, once a tsunami sweeping through only high technology industries such as electronics, media and communications, is now flooding every sector and disrupting old economy industries.

In less than a generation, exponential technologies have transformed markets, creating enormous value for the companies that mastered them, while destroying industries and organisations which were complacent, slow or poor decision makers. Traditional advantages that once set leading firms apart have become liabilities, turning those firms into losers in this new economic era.

The stakes are high and the pace of change rapid. Traditional tools and experience put incumbents at risk of following strategies which will fail to address new opportunities or threats. The old world approach is to dig more and more trenches while the disruptive competition builds better and better missiles. It is crucial for Boards to recognise that the pace of these changes means that their organisations could be hit before the next board meeting (See Figure 1).

Figure 1: Board Director Views

67%
impact is game changing

<10%
companies are well positioned

80%
need to act by next board meeting
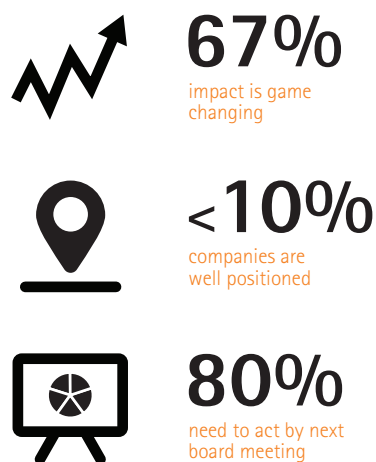
The New York Times. 67% drop in market capitalisation in 10 years [2].

Kodak, from height of its power in 1997 and market cap of $28 billion to bankruptcy 15 years later in 2012 while the number of photos taken and shared has grown 1000 times[3].

Alibaba, in 15 years creates $300 billion market cap company[4].

Blockbuster. Bankrupts in 2010. Online competitor, Netflix grows to 10 times Blockbuster's value[5].

Avoid Being Disrupted.
Become a Disruptor

Exponential technology advances in memory, processing power, and bandwidth have come together to rapidly drive down production cost while improving speed, accuracy, capability and quality. These key elements of economic disruption are continuously fused and split until a game-changing combination is reached. Once a perfect mix is created, not only do production cost decline, the cost of consumption (the price of a product and service along with the time, risk and effort related to consumption) reaches zero.... and true industry disruption takes place. Mobile phones are one advantage of this disruption, and have now put 80% of the world's consumer spend a call, click or text message away. Social media is using that connectivity[6], and large computers with sophisticated analytics, to engage, learn and sell to those consumers, and possibly taking them from traditional providers.

Photography is a great example. For a century taking a photograph was expensive, both in terms of production and consumption cost. Users had to buy a specialised device or visit a dedicated studio, visit a store to develop negatives, wait, and then mail the photos to others. Then, in less than 20 years, thanks to cheaper storage and increasing computing power, smartphones with in-built cameras grew exponentially. The last ingredient to the combination changed the industry forever – social media apps (such as Instagram) allow for a dramatic decrease in cost of consumption, lowering to zero the time, risk and effort of taking, producing and sharing photographs. In a world where the number of photos taken and shared has increased by 1000X, the legacy industry players, camera makers, chemical and paper manufacturers, and the local reprint stores have missed the growth, and in the face of unparalleled industry growth many have been put out of business.

In 1980 a TB of storage cost between $200-700 million. In the following 10 years, the cost fell to $9 million. Today, it costs $100 to buy a TB device that fits in your hand[7].

The key is for leaders to recognise these tipping points and gauge the implications for their organisations (see Figure 2). Assessments and preparation quality could bring significant new opportunity or severe consequences and threaten the company's very existence.

Board Directors recognise the urgency to address technology related opportunities and risks – a majority call for immediate action.

Recognising and embracing potential disruption is needed both at an individual Board Director and at an enterprise level.

As individuals, Board Directors should focus on building a better understanding of the strategic implications of the new technologies, rather than on the details of each technology. Meanwhile, enterprises would benefit from rapidly relooking at their strategic positions through a disruption lens.

Stanford University's Rock Center has developed a set of questions that Board Directors can use to frame their understanding:

What is the old versus new and what is coming next?

What is the material impact of the technology on the business?

Is the technology a significant game-changer?

What is the "weirdest" thing that could happen?

What if we stretched that analysis out 100 years? (and understand that it will actually probably happen in the next 5)

Figure 2: Organisations need to embrace exponential technologies immediately to understand and react to potential disruption

How quickly does your organisation need to master technology, risks and opportunities relevant to your industry?

59%
act now

68%
next month
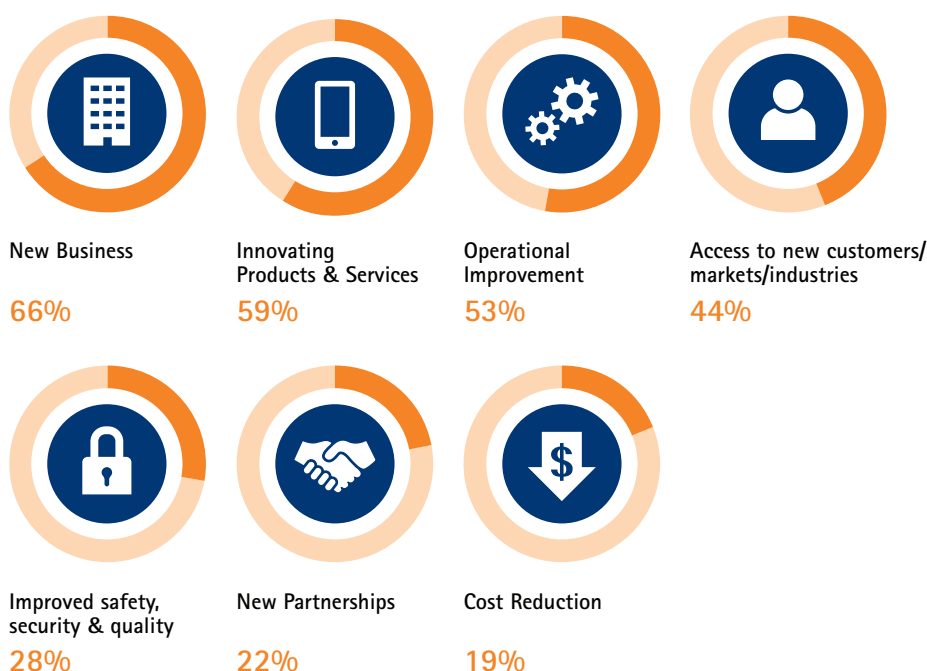
81%
this quarter

100%
this year
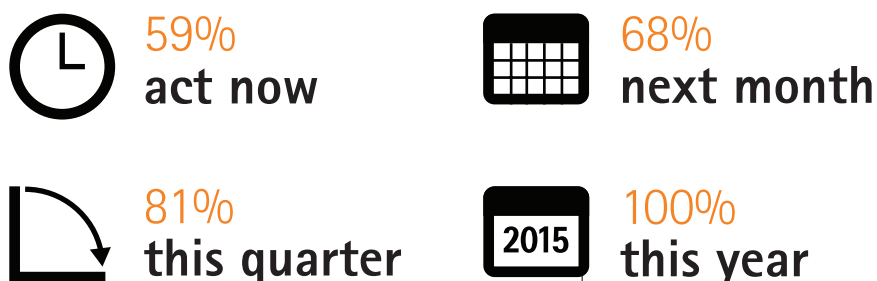
Opportunities and Risks Created by Exponential Technologies

Board Directors see compelling opportunities to generate significant enterprise value from exponential technologies (see Figure 3).

To tap into these opportunities, organisations across industries can draw upon a number of technologies. One example includes GE's use of the Internet of Things to optimise train velocity, planned maintenance, and improve the overall efficiency of the rail network[8].

Meanwhile, Ford harnesses car usage data for future car design, and offering add-on services. Singapore is increasingly relying on artificial intelligence[9] and advanced analytics to increase the safety of its citizens. By equipping engineers with smart glasses, an Israeli utility company is improving the quality and speed of service calls[10]. Many examples exist, and the technologies constantly change. The critical point is less the specific technology, and more the governance, strategy, and pace of companies in the age of disruption.

What if patients only needed to visit the doctor in-person in emergencies and all other checkups and treatments were done remotely, with the use of connected devices?

What if there were no more queues or road congestion, thanks to perfect visibility of traffic flow and real time decision making?

How do auto insurers assess the risk of driverless cars that eliminate human error?

What if Harvard and MIT's free eLearning service starts taking away students from every other university on the planet?

When will your refrigerator start reordering and paying for groceries for you? And work with your gym equipment to calculate the health impact of what's in it on your life expectancy?

Figure 3: Top opportunities related to exponential technologies

New Business
66%

Innovating Products & Services
59%

Operational Improvement
53%

Access to new customers/markets/industries
44%

Improved safety, security & quality
28%

New Partnerships
22%

Cost Reduction
19%

Each year, Accenture evaluates the key technologies in the market and highlights the few that represent the true mega trends. The technologies explored by TMS Academy's recent Directors-in-Dialogue session draw on the Technology Vision 2014[11] findings and are emerging as among the next biggest industry disruptors.

The Board Directors also examined how exponential technologies pose significant threats to companies or entire industries.

Cyber-attacks are the key concern of Chief Security Officers. As the adoption of Internet of Things increases, the focus will shift to securing ever expanding vulnerabilities. Organisations that transform cyber security capabilities from business inhibitor to business enabler will reap massive rewards from enhanced brand trust, reduced clean-up costs, and enhanced resilience.

Internet of Things

Physical objects enhanced with sensors, GPS, camera and connected to the internet.

Implication: Increasing control over the physical world and access to contextual information which can be used to optimise performance, design future products or transform a product into a service.

Digital Platforms

Platforms that enable users to connect and draw from unprecedented numbers of online users.

Implication: Organisations can now have access to talent, expertise, resources or customers at a scale never thought of before.

Wearable Technology

Wearable objects enhanced with sensors and made avaliable to the user at a point of need.

Implication: Access to information at any time changes the way products and services are delivered (e.g. decreasing the time of maintenance workers' training).

Social Media

Platforms enabling people of similar intentions to connect and collaborate.

Implication: Organisations and individuals have the ability to assemble people around a specific topic, contribute to research and development of new products.

Artifical Intelligence

Application of machines in detection of real time events and decision making related to these events.

Implication: Increasing amount of information at hand can be utilised to make better decisions, eliminate human error and make the best possible recommendations for the customer.

Increased Challenges to Strategic Decision Making

The very nature of exponential change is that it is impossible to predict by common extrapolation.

Analytic modelling must be done. Just like in the data storage case, where it was unthinkable in 1980 that the cost of TB of data would drop 7 million times in the next 30 years[12] and all that this would enable, it is important to look at detailed models rather than rely on intuition or experience.
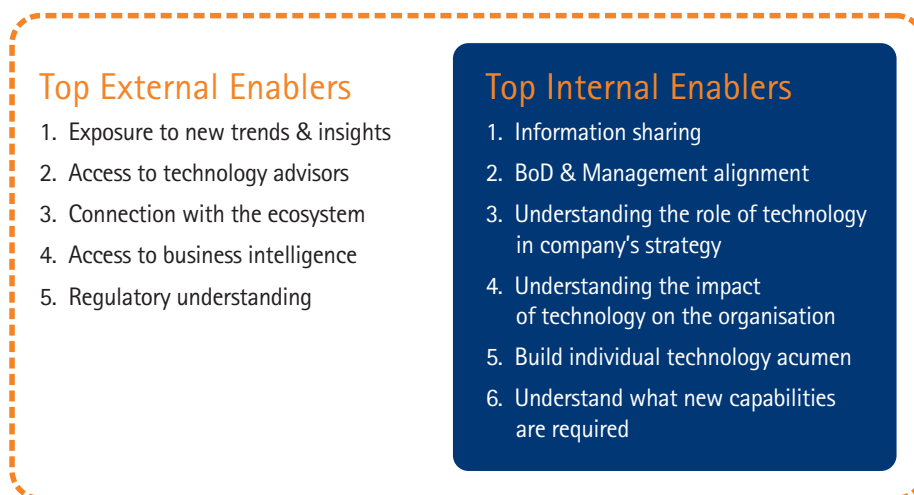
Prior strategies, advantages and management capabilities developed can be handicaps rather than enablers.

Staying current with exponential technology trends along with access to the right information and tools are key enablers for Boards to effectively recognise and act on exponential technology opportunities and risks.

On technology-related risks, Boards are challenged to find the right balance between drawing on data, analytics and insights from external sources such as social media, and managing and respecting customer data privacy.

Participants shared a number of internal and external areas which when improved, will significantly help Boards govern better in this new age of disruption (see Figure 4).

Figure 4: Top external and internal enablers

Top External Enablers

1. Exposure to new trends & insights
2. Access to technology advisors
3. Connection with the ecosystem
4. Access to business intelligence
5. Regulatory understanding

Top Internal Enablers

1. Information sharing
2. BoD & Management alignment
3. Understanding the role of technology in company's strategy
4. Understanding the impact of technology on the organisation
5. Build individual technology acumen
6. Understand what new capabilities are required

*in order of importance

8

SingTel – from Disrupted to Disruptor[13]

Five years ago, traditional Telecommunication businesses were being heavily challenged by over-the-top players.

Core sources of revenue were rapidly being siphoned off by new entrants. Faced with this increasing competition and anticipating the change that lay ahead, SingTel's board and management team made several decisions that positioned SingTel to now be the disruptor of other businesses. SingTel's transformation included the following principles:

Board – Management alignment

SingTel established a strategic planning process where the strategic agenda is set jointly and collaboratively by the Board and Management. They incorporate external expert insight into their process and use their Technology Advisory Board to validate specific themes.

Constant and robust dialogue

SingTel continuously runs a robust dialogue between the Board and Management that consistently and critically challenges the strategy and business model. The Board ensures there is alignment with management, clarity on expectations and priorities and the Management team has a clear mandate by which they take the company forward. This helped SingTel to recognise a "edge of the cliff" risk to its business model and the need to transform a traditional mobile business into a data-centric mobile internet business.

Infused the Board with technology expertise

SingTel assembled a technology advisory board with global experience to help Board Directors understand the exponential technologies and new business models.

Pulse check on new disruptions

SingTel has set up a venture capital company to invest in emerging technologies and businesses.

Immerse Board members in disruptive environments

Immersion included SingTel Board Directors visiting a number of disruptive new companies based in Silicon Valley.

New businesses

SingTel is building new disruptive businesses that let the company venture into new industries (advertising, big data analytics, video streaming, mobile banking).

Managing risk

SingTel is investing in cyber security and establishing joint ventures to build cyber risk management centre in Asia.

Ultimately, success requires proper decisions to be made and actions to be taken.

The role of Boards in today's uncertain environment is to help organisations navigate through the decision making and strategy execution. Board Directors highlighted that the key was to start with clarity and alignment on a revisited strategic plan and building technology prowess.

The stakes are high and the pace is rapid. With traditional tools and expertise becoming obsolete, the need to fundamentally rethink enterprise strategy and operations is immediate. Boards are now more than ever obliged to be stewards of a new mind-set. They will be the first to notice and protect their enterprises from disruption and enable them to gain from becoming a digital disruptor. The new world, driven by exponential technologies, presents a great opportunity to re-create and redefine businesses and industry, and create lasting competitive advantage with significant enterprise value. The potential for growth is limited only by the creativity of the enterprise itself. The key is to move quickly, and immediately with experimentation, and increase agility to pivot decisively once you have identified a tipping point and a set of actions that you will use to be the disruptor.

Priority decisions and actions for Boards

1

Develop a strategic plan that explicitly accounts for the major disruptions at work

2

Identify opportunities and understand the business case created by the disruption

3

Significantly enhance the technology prowess of the board and enterprise

4

Immediately weigh in on the technology investments decisions the company is making

5

Clarify the customer value proposition in the new world unbiased by current market position

6

Develop new networks, partnerships and alliances

7

Immediately assess the vulnerabilities and resilience of enterprise operations

References

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12. Accenture analysis

13. TMS Academy's Directors-in-Dialogue Forum on Boards and Technology: The Competitive Risk and Promise of Exponential Technologies

About TMS Academy

TMS Academy is the integrated leadership development arm of Temasek Management Services (TMS), a fully-owned subsidiary of Temasek Holdings. The Academy's mission is to contribute to the development and success of Asian organisations through providing world-class leadership development and global insights for their business leaders and board directors. To find out more about TMS Academy, please visit its website at www.tmsacademy.com.sg

About the Rock Center, Stanford University

The Arthur and Toni Rembe Rock Center for Corporate Governance is a joint initiative of Stanford Law School and the Graduate School of Business at Stanford University. The Center was created to advance the understanding and practice of corporate governance in a cross-disciplinary environment where leading academics, business leaders, policy makers, practitioners and regulators can meet and work together. The Center is led by outstanding Faculty with active collaboration from its Advisory Board.

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