

Game Changers: TMT Leadership Skills in the Digital Age

Industry Consultation and Needs Assessment



CANADIAN WOMEN IN COMMUNICATIONS
ASSOCIATION CANADIENNE DES FEMMES EN COMMUNICATIONS



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FOREWORD

In the digital economy, talent is key.

With the Cloud, streaming video and mobile devices—Canada’s technology, media and telecommunications (TMT) sectors are undergoing dramatic change. Not only for consumers, but also for professionals who must lead in this digital convergence environment.

For this reason, Canadian Women in Communications commissioned Digital Theory Media Consulting to develop this trailblazing report, *Game Changers: TMT Leadership Skills in the Digital Age, Industry Consultation and Needs Assessment*. This Report, funded in part by Status of Women Canada, is a forward-looking perspective on the key executive skills needed in the digital environment. It is also a first step toward enabling executives and organizations develop the most relevant skills and knowledge needed to harness career opportunities and actively lead the TMT sectors in Canada.

Report highlights:

- The TMT digital management environment is more collaborative, and increasingly focused on new products, with condensed timelines, relentless change and ambiguity.
- There is need for TMT leaders, who are bold, consumer focused, comfortable with new technology and highly collaborative.
- As technology and business become even more tightly entwined, industry leaders report a greater need for executives with combined business and technology skills—even those who are in non-technology roles.

Above all, this Report is a catalyst for action. Building on its recommendations, CWC is developing new curriculum guidelines to be made available industry-wide as part of our efforts to ensure that Canada remains competitive in its talent strategy. We welcome corporations and educational and training organizations to contact us about the guidelines to build relevant and robust professional development training.

Are you ready to help create tomorrow’s TMT leaders today? I encourage you to make use of *Game Changers: TMT Leadership Skills in the Digital Age* and its comprehensive examination of the new skills that will ensure Canada’s TMT executives are prepared to lead and succeed in the digital economy.

Sincerely,

A handwritten signature in blue ink that reads 'Judith Campbell'. The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Judith Campbell



1 Acknowledgements

Canadian Women in Communications would like to acknowledge and thank all of the individuals and partners who have made *Game Changers: TMT Leadership Skills in the Digital Age* possible.

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Canada** **Condition féminine
Canada**

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Canadian Women in Communications and Digital Theory Media Consulting acknowledge that any opinions, findings, conclusions or recommendations contained in this material are those of the author and do not necessarily reflect the views of Status of Women of Canada and other Report partners.

Game Changers: TMT Leadership Skills in the Digital Age was prepared by Digital Theory Media Consulting, under the direction of Kate Hanley, president, with Hillary Connolly and Kismet Goodbaum (research consultants), Meredith Gullons and Ainsley Schoppel (research coordinators) and Madonna McManus (editor).



Canadian Women in Communications and Digital Theory Media Consulting gratefully acknowledge the contributions and commitment of the project's Digital Economy Advisory Committee members, who guided the development of this report from its inception. A complete list of Digital Economy Advisory Committee members can be found in Appendix C of this Report, on page 56.

Canadian Women in Communications and Digital Theory Media Consulting would also like to acknowledge and thank the many TMT industry leaders who gave so generously of their time, expertise and insights through in-depth interviews. A full list of TMT 'Key Informant' leaders can be found in Appendix B of this Report, on page 54.



2 EXECUTIVE SUMMARY

“*Managing in disruption is very different than managing in a steady state environment.*”

TMT Leader

As the Canadian technology, media and telecommunications (TMT) sectors are transformed by digital technologies, leadership skillsets are in parallel transition. Traditional management skills and knowledge alone will no longer assure success for executives or their organizations. *Game Changers: TMT Leadership Skills in the Digital Age* reveals that today’s TMT executives need a new leadership toolkit to advance their careers and lead their organizations in the digital economy. Skills upgrading and targeted career planning will be critical to retaining and advancing women, who are already underrepresented in key TMT industry senior management.¹

Commissioned by Canadian Women in Communications and prepared by Digital Theory, this consultation employed in-depth interviews with 61 TMT industry leaders from across Canada and the U.S. and a secondary literature review.

An Evolving TMT Leadership Paradigm

Digital transformation and convergence is fuelling the need for TMT executives with the skills and attributes to lead in a setting where timelines are condensed, change is the only constant and innovation is a key driver of success.

- A composite in-demand TMT executive is a bold, consumer-focused innovator and highly collaborative leader, who is well versed in TMT trends and new technologies, and is able to execute in fast-paced, ambiguous environments.

The Innovative Leader

“*We need leaders to help shape the company vision, to come up with new ideas and to understand how to get to the customer with new technologies.*”

TMT Leader

No longer exclusive to R&D professionals and entrepreneurs, innovation leadership today is a core executive skillset. Creating new digital products that consumers demand while re-imagining business models requires innovation from across the TMT organization.

- An overwhelming majority of industry leaders told us that executive innovation skills are very important to the success of their organization or sector.²

1 Canadian Women in Communications, *Game Changers Part II: Career Advancement in the Digital Age, a Gender-Based Analysis*, December, 2012.

2 ‘Sector’ was discussed in the case of those stakeholders who were consultants, academics or industry association executives.



- Innovation demands bold leaders able to take calculated risks and move forward despite ambiguity, turn on a dime and recover quickly from inevitable failures.
- Executives need the capabilities to vision new opportunities, assess digital business models with strategic rigour and sell their ideas across the enterprise.
- Leaders must be influential change drivers, with the skills to leverage networks and communicate persuasively, uniting multiple stakeholders around a vision. Equally important is fostering an innovative culture and nurturing creative talent.

The Collaborative Leader

“Technology has blurred the lines between the product, content, services, IT and marketing roles. It’s critical for senior people to be able to work across the company to deliver initiatives.”

TMT Leader

The complexity of many TMT digital offerings coupled with the hyper-fast marketplace, make it extremely challenging for any one company, let alone department, to realize opportunities on its own.

- An overwhelming majority of TMT leaders viewed leading collaborative teams and business relationships as a very important executive skill.
- Today’s executives require skills to deliver results by working with and leading multiple outside partners and cross-functional teams across the organization, often without direct authority.
- The ability to use collaborative platforms and tools has become essential as team members often work remotely.
- Some stakeholders reported a new transparent and collaborative leadership style, promoting maximum decision-making participation from team members at all levels.

The Consumer-Facing Leader

“The basic relationship with the customer has changed... There is an opportunity now for constant iteration and change to suit customer preferences.”

TMT Leader



TMT executives will increasingly need to place the customer at the centre of the enterprise, understand their pain points and develop solutions to address those needs.

- This entails the ability to leverage data analytics, social media and other tools to gain customer intelligence and enable ongoing, meaningful customer collaboration.

The Multi-Specialist Leader

“There is a massive collapse of technology and media... Today, if you’re not well versed on how your fridge is a potential media distribution mechanism then you will be behind the market in four years.”

TMT Leader

More TMT organizations are pursuing hybrid digital opportunities—from cloud-based software services to mobile entertainment—that by their nature cross departments, organizations and TMT sectors. There is increasing demand for the one-stop executive with the breadth of experience and knowledge to identify and execute on convergence offerings.

- The majority of key informants viewed knowledge of at least two TMT sectors and the ability to exploit cross-sector opportunities as very important to the success of their organization or sector.
- There is demand for leaders with multi-functional knowledge and experience who can recognize holistic innovation opportunities and work seamlessly with professionals from other disciplines.

The Hybrid Business/Technology Strategist

“When I am interviewing people I expect that they will be completely versed in Twitter, Facebook, that they’ve experienced Apple TV, have an iPad and an iPhone, etc.”

TMT Leader

As technology infuses business, hybrid business/technology skills are gaining importance across the TMT sectors, and are critically important in ICT industries.

- Today’s ICT executives must leverage technology expertise with business, management and leadership skills. There is a rising expectation that non-technical leaders possess enhanced technology skills, including data analytics and the ability to converse with technical colleagues and staff.
- According to industry leaders, it is essential for TMT executives to actively engage in the latest consumer digital devices and platforms in order to understand customer trends. Some organizations report hiring young digital natives in senior roles to ensure market currency. However, gaps in management skills could limit their potential without training.



A Critical Need for Digital Leadership Training and Career Planning

As digital technologies proliferate and organizations focus on new business models, many of which will require extensive collaboration, the importance of these skills will very likely grow. In fact, significant skills gaps were noted in key areas throughout the sectors. A full compendium of common and critical TMT digital convergence leadership skills is set out in this Report.

While no one executive can possess all skills and attributes, if senior women are to retain employment and advance in the TMT sectors, enhanced provision of career planning and executive skills upgrading will be critical. This includes re-focusing executive career paths to gain in-demand experience and repositioning professional branding for a digital marketplace. Ensuring that TMT leaders have the right mix of skills for the digital era is also key to competitiveness in the global digital economy and thus should be a TMT sector priority.



3 Consultation Approach and Methodology

3.1 Objectives of the Consultation

For the past decade, Canadian Women in Communications has recognized the profound impact digital technology has had on the technology, media and telecommunications (TMT) industries in Canada, and by implication its influence on the careers of women working in these sectors. In order to retain and advance women in senior management and entrepreneurial ownership, it is critical to better understand the unique and changing leadership skillset needed to succeed in an environment marked by digital transformation and TMT convergence. If training is to be adapted to address the management skills needs of today it is essential that the TMT industry itself articulates those skills.

The objective of this industry consultation and needs assessment (the Consultation) is to determine the key common and critical skills and knowledge that TMT-sector organizations, large and small, require of their leaders in order to succeed in the digital convergence environment.

3.2 Scope of Consultation

This Consultation focuses exclusively on the unique strategic digital leadership skills and knowledge in demand today and in the near future in the Canadian TMT industries. In addition, we have sought out senior management skills (for those executives generally at the Director level or above, in organizations large and small) that are both common and critical to all three sectors, with a particular focus on skills needs for enterprises working at the intersection of technology, media and telecom in a convergence environment.

As well, this should be seen as a forward-looking consultation. A portion of the leaders we interviewed work at the core of digital innovation, transformation and convergence. Where we have identified major themes across interviews, we have integrated the comments of digital leaders to provide explanation and granularity to digital skills and processes.

3.3 Methodology

The approach and methodology adopted for this qualitative Consultation was two pronged:

1. A literature review of Canadian and international sources

The consultants conducted a literature review on the impact of digital transformation on the Canadian TMT sectors as well as globally, where information was highly relevant. This was complemented by a review of existing reports on TMT-sector senior manager skills needs, specifically relating to digital transformation, disruption and innovation. The review allowed the consultants to create a base-line portrait of the state of digital transformation and convergence in the Canadian TMT industries, and



to isolate digital convergence-related executive skills themes for further exploration in key informant interviews.

2. Informant Interviews with Senior TMT Stakeholders

Primary qualitative research was conducted through in-depth interviews with 61 senior-level stakeholders (55 Canadian and 6 in the U.S.) involved in the TMT sectors. Key informants included women and men TMT CEOs, senior executives, entrepreneurs, academics, consultants and industry association leaders. In Canada, informants were included from across the regions. A list of key informants is attached in Appendix B.

In our interviews we sought to identify and explore the digital convergence-related leadership skills most important to TMT organizations and the sectors today. We focused on skills for senior managers (director level and above) in TMT organizations, both large and small.

Interviews included extensive open-ended discussion with respect to key topics, including the impact of digital convergence on their organizations and sector, and on management in general, strategically important skills as well as skills gaps. We also asked key informants to rank various digital convergence management skills as “very important,” “somewhat important” or “not important” to the success of their organization (or in the case of consultants, academics and association stakeholders, their sector). We used these rankings, in combination with overall discussions, only to help form a qualitative portrait of skills needs and gaps. Where we asked the same question across the sectors and found significant agreement across key informants as to “very important” skills themes, we included them in the final Consultation report (the Report).



4 Leadership in the TMT Digital Environment

4.1 Introduction

As digital technology revolutionizes industries at large, Canada's TMT sectors are positioned at the core of the global digital economy, offering highly skilled jobs, growth and economic prosperity. In these knowledge sectors, where human capital is the key resource, highly skilled leaders are critical to organizational success. Today's TMT senior executives must negotiate an increasingly connected TMT landscape that is undergoing massive change as a result of the introduction of new digital technologies and platforms and shifts in consumer behaviour. An introduction to the TMT sectors and a summary of selected digital trends is located in Appendix A of this Report.

4.2 The TMT Sectors in the Digital Environment

Our interviews with 61 TMT industry leaders, along with our secondary literature review, revealed an evolving TMT workplace where leadership is undergoing a parallel transformation.

Digital as a Key TMT Growth Driver and the Focus on Innovation

Digitization and network convergence, mobility, hybrid devices, cloud computing, the consumerization of technology and the rise of social media have been transformational for the TMT sectors. While legacy industries continue to derive a significant percentage, if not the majority, of their revenues from traditional operations and business models, new digital products and services, including wireless data, cloud-based services and digital media are growth drivers.³ TMT organizations globally are increasingly focused on exploiting new and innovative products and services, many of which require extensive collaboration.

“The fundamental belief we have is that our core business for at least the next five years will continue to dominate. At the same time, we need to explore all of these emerging digital areas.”

TMT Leader

Cross-Sector Diversification in a Connected Digital Ecosystem

The convergence of voice and data networks and the rise of mobility have produced a multitude of new 'hybrid' TMT products and services and a more connected ecosystem. From over-the-top-video, delivered via the Internet, to multi-purpose smartphones and mobile cloud software services,

3 See Appendix A of this Report for a discussion of revenues and growth in various TMT industries.



many of the newest digital products and services, by their nature, combine components from two or more of the traditional TMT sectors. As organizations capture value in the digital ecosystem and seek to generate new revenue streams, our interviews confirmed that cross-sector diversification, to varying degrees, is evident throughout the sectors.

The Emergence of the TMT Converged Organization

Mergers, acquisitions and consolidation are also realities of today's TMT digital ecosystem.⁴ Canadian vertically integrated communications companies may offer cable television services, Internet access, home and wireless telephone services, as well as a variety of media, including broadcast and specialty channels, digital media, radio, and sometimes print and live entertainment.⁵

The trend is global, with players such as Google, Apple and Microsoft controlling extended digital ecosystems.⁶

“The winners are Google, Facebook, Twitter. Trying to force people into the categories of old is not wise. The new companies are not doing that. They are their own breed. They don't care where they fit and neither do their customers.”

TMT Leader

The unprecedented pace of change renders it impossible to determine the full impacts of digital technology and the convergence of voice and data networks on the TMT sectors. It is clear that TMT players are driving growth through the pursuit of digital opportunities. Research also indicates that the TMT sectors in the digital environment are marked by increased but not full interdependence and increasingly porous boundaries.

The Digital Convergence Debate

The majority of industry leaders we interviewed told us of the importance of exploring cross-sector TMT opportunities, although many did not operate in all three sectors.

In addition, the great majority of key informants we spoke with assumed the advent of TMT digital convergence and reported impacts on their business or sector and executive skills expectations.

Some, however, were sceptical of the notion of full TMT integration, noting that there were many digital products and services that did not include components from all three sectors. Others commented that dissolving lines between telecommunications, media and technology were simply an indication of the extent to which digital technology is integrating with and transforming every sector.

4 See Appendix A to this Report.

5 Library of Parliament, *Media Ownership and Convergence in Canada (In Brief)*, April 10, 2012, page 2.

6 See Appendix A to this Report.



4.3 An Evolving TMT Management Environment

TMT leaders told us that digital transformation and convergence are impacting the management environment, sometimes profoundly.

“Typically, in large organizations there were very clear definitions of scope of responsibility and expertise. For example, ‘I work in media. I work in wireless.’ People worked within their sandbox. Convergence is all about the opportunities that exist in the cracks between the sandboxes. So convergence creates issues. Who does it? Where do the revenues come from? And a new breed of managers need to connect dots between different assets within a company and need to get comfortable within the cracks.”

TMT Leader

Key informants described today’s organizations as more focused on new product and business model innovation, which for many legacy companies is taking place amidst much larger current operations where the bulk of revenues still reside. TMT organizations are also more collaborative. More work is structured as discreet projects undertaken by cross-functional teams and partnerships, often remotely. They also described management environments characterized by condensed timelines, relentless change and ambiguity. Characteristics of the current management environment discussed by interviewees are summarized in Table 1, and will be explored as they relate to leadership skills throughout this Report.

Table 1:
Impact of digital transformation and convergence on the TMT management environment: major themes, as summarized from key informant interviews

Impact of Digital Convergence on the TMT Management Environment: Major Themes
Flatter, more collaborative environments where leaders work with and manage cross-functional teams across the organization and with multiple external partners
An increased corporate focus on new product and business-model innovation across the organization
Condensed timelines, relentless change and ambiguity
Expectations to draw strategic connections between diverse capabilities, both internal and external, in order to derive new value
Technology-driven environments, mobile workplaces and focus on internal and external digital communications
Sharper, nimble organizations where strategic vision is backed by business sense and smart, agile executions

Source: Key Informant Interviews



4.4 An Evolving Leadership Paradigm in the Digital Environment

Digital transformation and convergence is fuelling the need for TMT executives with the skills and attributes to perform and lead others in a setting marked by disruption, an increased corporate focus on innovation, collaboration and constant change.⁷

“*Managing in disruption is very different than managing in a steady state environment. Today’s management is about managing creative chaos rather than repeatability.*”

TMT Leader

Skills and knowledge identified as ‘in-demand’ or important to the success of key-informant organizations or sectors are wide ranging and diverse. A composite in-demand TMT digital executive is a bold consumer-focused innovator and highly collaborative leader who is well versed in TMT trends, comfortable with new technologies and is able to execute in fast-paced, ambiguous environments.

We have grouped common and critical skills and knowledge along five themes, ranging from leading in innovative and collaborative environments to developing hybrid technology and business skills and exploiting the TMT digital ecosystem. Themes are set out in Table 2.

Table 2:

TMT digital convergence leadership skills and knowledge themes as summarized from key informant interviews

TMT Digital Convergence Leadership Skills and Knowledge Themes
Understanding and Exploiting the TMT Digital Ecosystem
Leading in an Innovative Environment
Leading in a Collaborative Environment
Hybrid Technology and Business Skills
Leveraging Consumer and Customer Digital Communications

Source: Key Informant Interviews

⁷ Deloitte, SpencerStuart, *Leadership at All Levels, Leading TMT Organizations into the Digital Future*, October, 2010, and key informant interviews for this Consultation.



Key informants were realistic and did not expect any single executive to possess all desired skills and knowledge. However, there is a significant market opportunity for those willing to invest in skills upgrading and proactive career planning to capitalize on an evolving leadership profile in the digital environment.

“People who can integrate the ability to understand technology, how customers will behave and build financial models and strategies to make a company successful, that’s the recipe to be an executive of the future. If you ever find that person, call me.”

TMT Leader

In the following sections, we explore each skills and knowledge theme in detail, drawing primarily from key informant interviews with TMT industry leaders. We have added limited information derived from existing reports where relevant.



5 Understanding and Exploiting Business Opportunities Across the TMT Digital Ecosystem

5.1 Introduction

Many key informants we spoke with are engaged in or exploring digital opportunities that, by their nature, cross at least two sectors, such as mobile software or digital media products and services. Stakeholders in TMT-diversified or vertically integrated companies reported increased expectations to draw new value from multiple assets and capabilities. This has given rise to increasing demand for the one-stop executive who can identify and execute on convergence offerings.

5.2 Understanding the TMT Ecosystem

When we asked stakeholders to determine the importance of management knowledge of at least two TMT sectors to the success of their organization or sector,⁸ a majority told us it was very important.

Industry leaders spoke about the need for executives with a wider breadth of experience and knowledge “to really understand what the business is today.” Those with this knowledge and experience are valued for their ability to assess the implications of ecosystem change on their business and understand new opportunities in a larger context.

“There is a massive collapse of technology and media... Today, if you’re not well versed on how your fridge is a potential media distribution mechanism then you will be behind the market in four years.”

TMT Leader

A broad understanding of the TMT ecosystem was also seen as important in vertically integrated organizations with multiple assets.

TMT Ecosystem Knowledge Summary

Industry leaders noted a range of related knowledge, including the following:

- Broad awareness of at least two sectors in the TMT landscape including the business, the players and technology, in a domestic and global context

⁸ ‘Sector’ was discussed throughout our interviews in the case of those stakeholders who were consultants, academics or industry association or fund executives.



- An understanding of where your business fits in the value chain
- The ability to connect the dots on a political, regulatory and policy basis
- A consumer perspective, allowing one to see beyond imposed sector barriers and focus on products and services that consumers “aspire to have”

5.3 Exploiting Cross-Sector Digital Opportunities

A majority of key informants also saw the ability to exploit new digital-related cross-sector opportunities as a skill that was very important to their organization’s success. Mobile is a major focus. One software executive told us, “Mobile is now one of the pillars of our mandate,” while another was of the opinion that “everything will be mobile in three to five years.” For a number of players, mobile remains a very small part of current business, but an important part of future activity.

“ Mobile is now one of the pillars of our mandate. We have introduced on-demand and mobile apps including consumer apps... We are responding to the new workplace reality that work and home life are blurred, that many people work at home and they work on the go.”

TMT Leader

For others, the pursuit of content opportunities was a priority. This is being driven by consumer demand for hybrid devices and as part of corporate vertical strategies to increase new revenue streams.

“ It’s an amazing space right now... Everyone is fighting for similar pieces of the pie. The carriers are buying content whether it’s TV or a hockey team. The hardware manufacturers like Sony own content. Then you have new players like Google who are encroaching in the space. They all overlap. There is no clear delineation between these players. It is very grey.”

TMT Leader

Therefore, there is likely to be an opportunity for those executives who can bring multi-sector TMT knowledge and experience to senior management.



6 Leading in an Innovative Environment

6.1 Introduction

For the purposes of this Consultation, innovation can be described as “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.”⁹

Research, as presented in this section, shows that TMT companies globally are focused on innovating new products and services as a driver of growth, triggering demand for a range of innovation-related executive skills.

6.2 Corporate Focus on Innovation

In response to new technologies and shifting consumption patterns, TMT organizations globally are increasingly focused on innovation while executing change.

- According to the PwC *15th Annual Global CEO Survey*, as of 2012, 39% of technology CEOs worldwide viewed new products and services as their main opportunity for growth in the next year.¹⁰ They are positioning to take advantage of the consumerization of IT and mobile computing in particular.¹¹
- Likewise, 46% of global Entertainment and Media CEOs ranked “new product and service development” as the number one area of opportunity for growth, more than in any other sector.¹²
- Communication CEOs globally were also focused on developing new products and services, with 60% intending to adopt new business models in the coming year.¹³

Key informants confirmed this theme, noting the increasing focus on innovation in their organizations and sector. For example, one executive said, “New value models, new ways of extracting value from the technology... is what everyone is focusing on.”

9 Organization for Economic Co-operation and Development (OECD) Directorate for Science, Technology and Industry, *Workforces Skills and Innovation: An Overview of Major Themes in the Literature*, 2011, page 16.

10 PricewaterhouseCoopers LLP (PwC), *Delivering Results, Key Findings in the Technology Sector, 15th Annual Global CEO Survey Sector Summary*, 2012, page 4.

11 *Ibid.*, page 2.

12 PwC, *Delivering Results, Key Findings in the Entertainment and Media Sector, 15th Annual Global CEO Survey Sector Summary*, 2012, page 7.

13 PwC, *Delivering Results, Key Findings in the Communications Sector, 15th Annual Global CEO Survey, Sector Summary*, 2012, page 6.



However, others emphasized that legacy company innovation efforts must be balanced by the need to derive the bulk of revenues through existing products and services. Thus, innovation must take place alongside much larger traditional business operations.

“We need everyone’s creativity up and down the line. There are high demands today to be more efficient, to continue to capture the benefits of the old business, optimizing returns from that while making room for the imperative to create new revenue streams.”

TMT Leader

6.3 Innovation as a Core Executive Skill

According to stakeholders in this Consultation, innovation is a key executive skill. An overwhelming majority of key informants viewed leading innovation and innovation strategy as digital convergence management skills that are “very important” to the success of their company or sector. Innovation-related skills gaps were also a significant theme.

“There is no room for just a middle manager taking direction from above and simply implementing. We need leaders to help shape the company vision, to come up with new ideas and to understand how to get to the customer with new technologies.”

TMT Leader

According to our interviews, innovation is the *raison d’être* of most start-ups, shaping the entire company from organizational models to daily activities. One start-up leader commented, “I have to innovate every day.” Another said, “Our whole business is innovation.”

For larger organizations as well, innovation is increasingly the concern of senior executives at large. While direct responsibility for radical innovation of new technologies and products may lie within specific innovation teams, interviews indicate that transition to digital platforms and business models requires constant innovation, making innovation leadership a core senior TMT executive skillset.

“People think of innovation as someone off somewhere coming up with a good idea. That’s part of innovation but by no means the whole picture.”

TMT Leader

Stakeholders discussed a broad range of innovation-related executive skills. We have grouped these into a series of sub-themes.



6.4 Personal Leadership Skills for an Innovative Environment

Overview

Throughout our interviews, there was a major emphasis on the need for strong personal leadership skills today. Specific skills mentioned included traditional capabilities, such as effective people management and the ability to communicate well both orally and in writing. These were seen as essential and will be discussed later in this Report.

Stakeholders spoke repeatedly of the importance of leadership in an environment characterized by condensed timelines, innovation, constant change and lack of clarity with respect to the future.

According to key informants, executives need to be agile and action oriented, able to adapt to multiple roles and changing priorities, and move ahead despite ambiguity. Innovation requires leadership by bold risk-takers who can turn on a dime and then recover from inevitable failures. Key attributes for leading in an innovative environment as identified by stakeholders are summarized in Table 3.

Table 3:
Key leadership skills for innovative environments summarized from stakeholder interviews

Key Leadership Skills for Innovative Environments
Flexibility
Adaptability
Resilience
Tolerance for Ambiguity
Agility
Risk-Taking
Focus and Prioritization
Appetite for Learning
Exerting Influence

Source: Key Informant Interviews

Agile, Nimble and Action Oriented

Stakeholders reported that digital technologies are enabling shorter times to bring products to market and fuelling declining product lifecycles. In addition, the iterative production processes first used in high-tech and digital environments entail bringing “good enough products” to market and then course correcting, “iterating” and “pivoting” according to market feedback. While these trends have yet to permeate throughout TMT sectors, there is high value placed on executives who can achieve results quickly, meet tight deadlines and take action.



“Once a cable CEO asked for a font change in their channel guide and four years later it was delivered. Today we can do that in five minutes.”

TMT Leader

Open, Flexible and Adaptive

Digital convergence success increasingly also entails rapid adoption of new technologies and business models. Today’s flatter organizations have also given rise to leaders often playing multiple roles. As a result, executives must be more flexible and adaptive than ever before, including being open to new ways of doing business and having an appetite for continuous learning.

“Roles and responsibilities have become much less precise and more flexible. You might be doing something completely different in the afternoon than you were doing in the morning and you need to be okay with that.”

TMT Leader

“It can be so frustrating. You arrive with your tennis equipment and everyone is playing football. Adaptability is every leader’s biggest challenge.”

TMT Leader

“You need to be prepared to throw out any business model you are used to and look at things completely differently than you have in the past.”

TMT Leader

Bold, Resilient and Tolerant of Ambiguity

As one executive told us, “So often you go in circles in innovation... you have to be able to wander in the woods while you figure it out...” Key informants from both start-ups and large organizations reported that leaders today have to be bold, take risks and make decisions despite having few facts. This includes a willingness to fail and the ability to recover and stay fresh over the long haul.

“The number one thing that we hire for is the ability to be resilient through change and execute despite ambiguity and sometimes very few facts at all.”

TMT Leader

“You need to be OK with the idea that the world in five years may be completely different and you may be wrong.”

TMT Leader



Focused and Able to Prioritize

Today's TMT leaders face a multitude of innovation ideas, exponential growth of information and the need to engage on multiple communications platforms. This is driving an increasing need for executives to focus and prioritize. As one executive reported, "The demands have grown exponentially... relentlessly prioritizing your activity is the key to avoiding burnout... Thinking that you are going to get everything done on your to-do list is a recipe for disaster."

Influential Change Driver

Stakeholders also noted that in an innovative environment, leaders are required to influence and drive change within an organization, cut through cultural barriers and line up multiple stakeholders behind their vision. One executive said, "Managing change is the hardest thing managers do. Everyone is afraid of the future and stays in their comfort zone. This won't work in today's environment."

6.5 Talent Leadership in an Innovative Environment

According to a recent multi-industry study, organizations with strong innovative cultures are more likely to achieve success.¹⁴ Our interviews confirmed that innovation requires having the right creative team in place, and then creating an environment where they can thrive. Talent management in general was a significant skills theme and a frequently cited skills gap.

“Innovation requires putting in place the kind of mindset that ends up delivering innovation in a repeatable way. This means hiring the right people and continuing to foster an environment that gets the best out of those people.”

TMT Leader

Particularly in digital organizations and departments, but to some degree across the sectors, the demand for top talent has put increasing pressure on executives to have the skills to attract and retain key team members for the longer term.

“Everyone [in digital] is challenged by talent retention. Talent is just being swapped around because it's so hard to keep people. So it's critical for leaders to be able to create a great working environment.”

TMT Leader

Key informants identified specialized-skills needs relating to managing, nurturing and developing creative employees who can lead the organization into the future, often from the millennial generation. As one industry leader told us, "First you need to identify the right talent. Where talent

14 Booz&co., The Global Innovation 1000, "Why Culture is Key", strategy+business, Issue 65, Winter 2011, page 4.



exists, exploit it by giving [it] the opportunity to be more creative and think more freely.” Another leader explained, “...helping employees build a career, sponsoring them for the next level of assignment, determining where their best fit is, this is critical as you build your team.”

As discussed later, in Section 8 of this Report, an important skills gap relates to management skills in general for younger leaders, some of whom are entering senior positions as a result of their top digital skills. In that context, people management was seen as a particular skills gap.

6.6 Key Innovation Skill: Strategic Visioning

Visioning New Opportunities

The foundation of innovation is the ability to identify new opportunities. In order to take organizations forward in a disruptive environment, leaders in demand are continuously thinking about the ‘next big thing’ or simply asking, ‘How do we do it differently?’ The ability to look ahead, vision, see changes coming before they happen and discover the next winning opportunity was seen as a key executive skill.

“*Solutions are not self-evident anymore. Successful companies find the white space in the marketplace and create disruptive ideas.*”

TMT Leader

Some informants also pointed out skills gaps related to the use of formal visioning practices including strategic foresight, described as “a systematic approach to gathering intelligence about possible futures and building shared visions, aimed at guiding and enabling present-day decisions.”¹⁵ One leader noted the importance of adopting formal innovation methods such as design thinking, a holistic, creative approach to problem solving that allows an understanding of potential multiple outcomes then uses tools to narrow the field to the optimal system, experience or product.

Distilling Multiple Trends and Developments

In order to discover new opportunities, executives in the digital convergence environment will need to be adept at managing multiple information streams, including:

- Technology developments
- Industry trends
- International landscape and trends
- Customer attitudes, preferences and broader consumption patterns

Industry leaders saw being ‘on trend’ as essential, particularly in light of the accelerated speed of technology and consumer consumption changes. One key informant noted, “The timelines are becoming shorter and shorter. Things used to happen in 18 months. Now it’s three to six months.” Several informants emphasized a skills gap around understanding the landscape and trends in an international context.

15 Strategic Innovation Lab (sLab), OCAD University, *2020 Media Futures*, 2011, page 31.



“*[Leaders] need to understand the Canadian context in the global context. We have regulation, a restrictive market, a lack of scale...We need a global context to see opportunities and understand global trends.*”

TMT Leader

“*Understanding the potential on an international level. I rarely hear how the larger organizations want to grow their businesses beyond our small borders. How do we develop alliances and synergies with international business?*”

TMT Leader

A number of interviewees stressed the importance of a “customer leaning focus” in identifying new opportunities. According to these industry leaders, “listening” to customer activity through social media and data analytics has emerged as a key innovation-related skill. One executive employs ethnographers on staff with the goal of deciphering unmet consumer needs by closely observing their behaviours, tastes and habits. Possessing a consumer-centric view emerged as a significant theme throughout our consultations, and is discussed in more detail in Section 7 of this Report.

“*Today it’s not always about one product. Business models are increasingly built around niche targeting, customization and consumer experience. Customers still end up as passengers on too many business plans.*”

TMT Leader

6.7 Key Innovation Skill: Strategic Business Assessment

The demand for leaders with capabilities to think creatively and vision future opportunities was tempered by the requirement that they assess those opportunities with strategic business rigour. Key informants stressed the need for executives to focus on innovation ideas aligned with both the realities of the marketplace and the strengths and goals of the organization. Assessment criteria mentioned by key informants includes:

- Corporate strategic goals, positioning and strengths
- Corporate constraints and limitations
- Available resources
- Market need and consumer preferences
- Opportunities with the biggest potential impact given the above

“*We need people that not only can come up with a great new idea, but can come up with a great new idea that is business worthy.*”

TMT Leader

“*Too much focus now is on where we want to be without looking at where we are now and who we are, doing a gap analysis and determining whether we can really do this.*”

TMT Leader



6.8 Key Innovation Skill: Understanding, Creating and Exploiting New Digital Business Models

As TMT organizations search for new digital revenue streams, according to key informants, skills relating to exploiting and creating new business models are considered critical. A large majority of key informants rated exploiting new digital business models as very important to the success of their organization or sector. One industry leader said, “New ideas always come down to the business model, so you really have to understand this.” Creating or exploiting new business models was also seen as a significant gap across the sectors.

Related skills were wide ranging, including identifying, assessing and adapting new digital business models. A summary of stakeholder comments is set out in Table 4.

Table 4:

TMT business model-related skills as extracted from stakeholder interviews

Summary of TMT Business Model-Related Skills	
Mindset/Values	<ul style="list-style-type: none"> • Open-mindedness to new models and ways of doing business • Entrepreneurial and risk-taking • Confident • Good judgment
Knowledge and Information	<ul style="list-style-type: none"> • Familiarity with known digital business models including sponsorships, branded content, product placement, freemium, open and service business models, syndication, subscriptions, multiple business-model strategies, merchandizing • Familiarity with digital distribution platforms including social media, online retail and applications • Understanding present business in order to evaluate efficacy of future business
Strategy and Analysis	<ul style="list-style-type: none"> • Combine creativity with business skills • Innovate new disruptive business models • Apply holistic strategy (i.e., analysis of complex ecosystems models where revenue streams are sometimes indirect) • Analyze how successful business models operate and adapt to relevant opportunities
Business Model Considerations	<ul style="list-style-type: none"> • Able to assess: <ul style="list-style-type: none"> <i>Sources of revenue streams</i> <i>Value proposition</i> <i>Relation to existing business</i> <i>Route to scale</i>

Source: Key Informant Interviews



Top-Line Understanding of Financial Modelling

Financial modelling was seen by a majority of key informants as a digital convergence management skill very important to the success of their organization or sector. Industry leaders viewed financial modelling as a key tool to evaluate the efficacy of a new digital business venture and a fundamental part of a successful business case. However, it is expected that executives need an understanding level only in order to communicate with and leverage the work of the financial team.

“*Today, unless you show me a three- to four-year payback and unless it can generate revenue and hold its own, it’s not something we’re going to look at anymore... simple financial math now creeps into everything we do.*”

TMT Leader

6.9 Key Innovation Skill: Creating and Selling a Business Case

A large majority of key informants viewed creating and selling a business case for new ventures as a digital convergence management skill, very important to success of their organization or sector. The business case was described as a key sales and educational tool for new digital ideas, particularly in an environment where decision makers may not understand the technologies and business opportunities associated with digital innovation.

“*You have to get buy-in right at the top, to plant seeds for future models, different technologies, different paradigms.*”

TMT Leader

To clearly articulate the value proposition, executives need to be familiar with standard business-case components, including:

- Market demand analysis
- Competitive analysis
- Revenue model
- Financial and resource requirements
- Revenue and profit projections
- Time to market

The process of selling a new business case was also regarded as essential to gain buy-in laterally across the organization, something crucial for the project’s acceptance and success.

Salesmanship, including direct presentation skills and indirect networking, alliance building and influencing skills were viewed as important. One successful innovator spoke of initiating 90-day back-channel strategies, gaining agreement from key players long before a formal presentation. They emphasized the need to “be campaigning constantly” to build crucial support laterally across the organization.



6.10 Other Notable Innovation-Related Skills and Knowledge

6.10.1 Commercializing New Digital Opportunities

Skills related to executing on new product ideas, creating and scaling teams and then building start-up units or businesses was a theme, primarily amongst those operating in start-ups, digital media or mobile environments. These skills can be grouped around the theme of new opportunity commercialization.

Some stakeholders told us of the iterative, time-condensed development processes used in digital where “good enough” products are launched and updated, sometimes continually, based on user feedback and analysis, or in business-to-business settings, client feedback. More flexible, agile processes are also being adopted in some larger technology companies we spoke with.

On the other hand, nimble but planned longer-term execution was seen as an important skill. One executive told us of the importance in a digital environment of “being able to move a new execution forward fast but rationally, with the right marketing, and long-term acceleration.” She noted, “What separates the winners and the losers in the digital space is execution.

“You have to have credibility on the execution side, showing that if something is approved, you can make it happen on time and on budget. This is the difference between the doers and the dreamers.”

TMT Leader

Likewise, a leader in the start-up community noted, “People mix up vision and execution. Entrepreneurs who are successful have a vision of what they want to achieve and can work out a path of execution.” Indeed, commercialization has been identified by other research as a skills gap for digital entrepreneurs.¹⁶

Business skills relating to scaling production of promising new products, building a new team to support the product’s growth and then ultimately building a business (or business unit) were also discussed, particularly by leaders from digital organizations. This entrepreneurial skillset was also noted as a skills gap, particularly among digital teams and start-ups.

“The most challenging aspect is finding someone with a complete view of what a business is from creating a product, marketing and monetizing it.”

TMT Leader

As organizations increasingly embrace digital products and processes, and innovation becomes further embedded, these skills needs will grow.

16 Cultural Human Resources Council, *Cultural HR Study 2010, HR Trends and Issues Report*, December 2010, page 122.



6.10.2 Designing Innovative Organizations

Developing and Facilitating Innovation Processes

There is a need for clearly articulated innovation processes at the organizational level to ensure that the right ideas make it to market and that innovation is repeatable. To date, there is no universal approach with respect to how innovation should be embedded within an organization and with whom direct responsibility for driving innovation should reside.¹⁷ Skills needs relating to defining corporate innovation strategies and processes were identified by some stakeholders. In fact, one executive stated that this is “one of the most underdeveloped skills in all industries.”

Another TMT leader explained, “You can’t have a free for all where everyone is coming up with new opportunities. You need a process to vet those opportunities.” Another commented, “It’s important that we institutionalize [innovation] and bring a series of steps that bring detail around it. I don’t believe that great ideas are shaped overnight.”

“*Today’s leaders need to learn the skills around growth strategy. There are several models around... they need a team-wide process to continuously evaluate the internal environment, the external marketplace and identifying the highest-potential growth opportunities for the company.*”

TMT Leader

Designing Management Structures to Support Innovation

Some key informants including, but not limited to, those operating in start-ups told us how they work today in flat or matrixed team-based models. There was an overall awareness of the need to structure organizations to meet new innovation mandates.

“*In [our company] management structures are changing. There is a clearly articulated mandate from the CEO down to integrate, consolidate, cooperate and go across horizontals, not verticals... You have the assets, you have the talent, but you are not set up to take advantage of this.*”

TMT Leader

Some stakeholders spoke of the need for legacy organizations to learn the theories around new kinds of organizational design, the latest case studies from organizations that are succeeding in innovation, as well as understanding processes around team and organizational design. One observed that some technology companies are adopting advanced, open innovation models; developments that should be better understood and leveraged. “Some digital start-ups have their cross-functional teams and processes so down-pat that they can get from idea to manufacturing in a matter of weeks. This is astonishing. We have to understand that this is today’s new pace of innovation in the marketplace. These are our competitors.”

17 McKinsey & Company, *McKinsey Global Survey Results: Making Innovation Structures Work*, September, 2012, page 2.



This appears to be an issue across organizations and sectors. For example, a 2012 McKinsey & Company global study found that 52% of executives surveyed believe that organizational structures are not designed to take advantage of their digital business priorities.¹⁸ Therefore, despite limited discussion of skills needs around organizational design, we have included it here as a digital convergence management skill going forward.

18 McKinsey & Company, *McKinsey Global Survey Results: Minding Your Digital Business*, 2012, page 8.



7 Leading in a Collaborative Environment

7.1 Introduction

The complexity of many technology-driven TMT products, coupled by the speed at which digital offerings are brought to market, make it extremely challenging for any one department, let alone company, to realize digital opportunities on its own. Aided by the new ease with which disparate teams and partners can be connected through digital platforms and tools, stakeholders report increasingly organizing around collaborative relationships, both internally and externally. This is a global trend, crossing multiple industries.¹⁹ It is one fundamentally fuelled by digital technology and thus has tremendous relevance to the TMT sectors. It should be remembered, however, that the trend is evolutionary, and the degree to which TMT organizations collaborate is clearly not uniform.

A significant number of stakeholders described their organizations both large and small as becoming flatter, with more fluid job descriptions and work, particularly around digital offerings, increasingly organized around cross-functional projects. They also described developing new ventures in partnership with others within and outside of their sectors, and increasingly putting their customers at the centre of the development process. A summary of these collaboration drivers, as reported by key informants, is set out in Table 5.

Table 5:
TMT drivers of collaboration as extracted from stakeholder interviews

TMT Collaboration Drivers	
Internal Collaboration Drivers	<ul style="list-style-type: none"> • Matrixed organizational models • Flatter organizations with less hierarchy • Fluid job descriptions • More work as discreet projects • More work requiring cross-departmental expertise • Workforce includes remote employees and contractors
External Collaboration Drivers	<ul style="list-style-type: none"> • Products and services developed in partnership with others, sometimes across TMT sectors • Customer-facing focus • 'Co-opetition,' where competitors collaborate to share resources or exploit opportunities

Source: Key Informant Interviews

One leader told us, “Collaboration is on multiple levels, across companies, across our customers, consumers, carriers, retailers and internally. We work with them all... and now the manufacturers and software providers are becoming much more important to the ecosystem.”

19 IBM Institute for Business Value, *Leading Through Connections Insights from the Global Chief Executive-Officer Study*, 2012, page 14.



An overwhelming majority of industry leaders we interviewed viewed the ability to lead collaborative teams and business relationships as a digital convergence management skill very important to the success of their organization or sector. One informant commented, “One of the biggest challenges I see is people in this industry not being able to work in a collaborative environment, where you don’t have total control.”

“*Collaboration is huge, off the charts. My whole job is being able to execute cross-location, cross-functional, cross-departmental.*”

TMT Leader

TMT leaders described a wide variety of skills relating to managing in the collaborative organization. These can be grouped into themes set out in Table 6.

Table 6:
TMT collaborative skills themes extracted from stakeholder interviews

Key TMT Collaborative Skills Themes
Developing Collaborative Business Partnerships
Engaging in Customer Collaboration
Working Collaboratively Across the Organization
Adopting a Collaborative Leadership Style
Mastering Collaborative Personal Leadership Skills
Managing Cross-Functional Teams and Projects
Leveraging Digital Collaborative Tools and Platforms

Source: Key Informant Interviews

7.2 Key Collaborative Skill: Building and Managing Collaborative Business Partnerships

A literature review and key informant interviews show that TMT organizations pursuing digital opportunities increasingly operate in connected ecosystems, where innovative products and services are developed by multiple players, partnerships and strategic alliances, often across sectors.²⁰

- In the global telecommunications sector, 84% of CEOs in 2012 were focused on external partnering.²¹
- In 2012, 64% of global entertainment and media CEOs were planning on entering into a strategic alliance or joint venture within the next 12 months.²²

20 PwC, *E&M Companies harness industry dynamics to create the “Collaborative Digital Enterprise,”* 2011, page 2.

21 IBM Institute for Business Value, *Industry Perspective, Insights from the Global Chief Executive Officer Study, Telecommunications Sector,* July 2012, page 1.

22 PwC, *Key Findings in the Entertainment and Media Sector,* page 6.



- In 2012, 45% of global technology CEOs believed that within three years they will have partnered with other organizations specifically to circumvent skills shortages.²³

Stakeholders noted how single organizations responding to the myriad of complex digital opportunities seek to accelerate speed to market and improve quality of offerings, by accessing deep skills and experience through collaboration with complementary players.

“Because the field is growing so large and the deep skills necessary, no one firm can build a team with all the expertise needed, especially with the speed with which these products are going to market. A partnership model must be considered out of the gate.”

TMT Leader

One digital leader we spoke to reported working with over 75 technology partners, allowing these partners to “create best-in-class solutions for our customers. [The customers] win because they don’t have to compromise on any piece.” Convergent digital products and services from smartphones to mobile payment solutions also require TMT organizations to partner across the sectors in order to succeed.

“Evolving customer demands for content from an increasing variety of sources will require telecom providers to engage in a complex web of collaboration with the media and entertainment, IT and consumer electronics industries.”

IBM Business Consulting Services, *Profiting from Convergence: Defining Growth Paths for Telecom Service Providers*²⁴

In addition, there is a growing appetite for ‘co-opetition,’ where groups of competitors work collaboratively to solve problems such as sharing non-proprietary resources or creating scale to compete in a global marketplace.

Skills and Knowledge to Develop, Negotiate and Execute External Partnerships

Thus, industry leaders told us that TMT executives require knowledge of digital products, the broader landscape and players in order to effectively identify new partners. They also require business skills to develop, negotiate and maintain various contractual relationships.

7.3 Key Collaborative Skill: Engaging in Customer Collaboration

The digital environment has given rise to an explosion of social networking as people connect with others to share experiences, information and entertainment seamlessly. According to the OCAD

23 PwC, *Key Findings in the Technology Sector*, page 7.

24 IBM Business Consulting Services, *Profiting From Convergence: Defining Growth Paths for Telecom Service Providers*, 2005, page 1.



University Report, *2020 Media Futures Trends Package*, social media has enabled multiple forms of ‘social collectivity’ to heavily influence both online and offline behaviour, including consumption. As such it has “become one of the defining trends of the Internet era.”²⁵

The TMT collaborative ecosystem increasingly includes consumers who utilize social platforms to actively share their opinions, provide instant product feedback and participate in product design.

“*Today it’s not clear if new opportunities are created by enterprise or the consumer.*”

TMT Leader

Therefore, some informants emphasized a need for TMT executives with the know-how to engage in deep and active relationships with their customers, co-developing solutions to customer needs and aspirations. This entails a major strategic shift from focusing on products and features to “putting the customer at the centre of what you are doing,” understanding their pain points and rapidly devising solutions that address those needs. According to one informant, “If you don’t, the competition who has addressed those needs is one click away.” Another leader told us of the growing importance of both product and experience design as players embrace the consumer perspective in all aspects of development.

7.4 Key Collaborative Skill: Working Collaboratively Across the Organization

Our interviews indicated that leading in the digital environment entails working collaboratively across the organization in cross-functional teams in order to access multiple centres of expertise and quickly move innovative products to market.

“*Technology has blurred the lines between the product, content, services, IT and marketing roles. It’s critical for senior people to be able to work across the company to deliver initiatives.*”

TMT Leader

Thus, executives with broad knowledge of the business as well as familiarity with multiple disciplines are in demand. They have the ability to converse with diverse team members and understand the strategic significance of cross-departmental issues.

Collaborative work also requires a new executive mindset. One informant said, “People need to understand that they can’t do everything. They have their area of expertise and they need to work closely with others who have the remaining expertise to get the job done.” TMT leaders must therefore also be able to execute without full authority, sometimes with no direct reports at all.

25 Strategic Innovation Lab (sLab), OCAD University, *2020 Media Futures Trends Package*, November 16, 2010, page 63.



7.5 Key Collaborative Skill: A Collaborative Management Style

For digital organizations in particular, the mandate to drive innovation and its attendant requirements of organizational creativity, flexibility and speed has also triggered an evolution in TMT leadership models. According to some key informants, the command-and-control management model is less effective in the digital environment. For industry leaders working in digital organizations, adopting a more collaborative style called by one Google senior executive a “post-heroic” leadership model is key.²⁶

“Dictating direction down through the pyramid is inefficient and doesn’t lend itself well to collaboration or managing a network and a community.”

TMT Leader

According to key informants, collaborative leadership is marked by greater transparency, openness and a facilitative style. A collaborative leader holds conversations rather than dictating commands, and creates openness and transparency, sharing goals and plans with team members. One executive said, “In a software company, we hire people that are smarter than us in any particular field. We need to hear them and understand their perspective on every objective.”

7.6 Key Collaborative Skill: Personal Collaborative Style

In addition, personal leadership skills were seen as critical for TMT senior executives participating in and managing collaborative work.

“You have to lead teams that are doing things that you have no history or experience with so it’s real hard-core leadership stuff as opposed to having a skill in an area.”

TMT Leader

Our conversations with industry leaders did not elicit a great deal of detail on personal leadership skills and attributes needed to execute on collaboration. However, one key informant provided a summary of skills that in her opinion were key. These are set out in Table 7.

26 Torrence Boone, Managing Director, Agency Business Development, Google, as quoted in Spencer Stuart, *Talent 3.0: Solving the Digital Leadership Challenge – A Global Perspective*, 2011, page 12. This model appears institutionalized in many of the digital and software start-ups we interviewed. It is less clear, the extent to which it is fully embraced by larger organizations, although there was significant consensus around its importance.



Table 7:

Collaborative leadership skills as identified in a key informant interview

Collaborative Leadership Skills: Key Themes
<ul style="list-style-type: none"> • Emotional and social intelligence
<ul style="list-style-type: none"> • The ability to lead through influence versus through a title, and the ability to manage up and across
<ul style="list-style-type: none"> • Powerful listening skills and the ability to ask powerful questions
<ul style="list-style-type: none"> • Facilitation skills in order to foster discussion amongst people often without common interests
<ul style="list-style-type: none"> • Everyday negotiation skills in order to achieve win-win outcomes for teams, often with clashing self-interests

Source: Key Informant Interview

7.7 Key Collaborative Skill: Managing Cross-Functional Teams and Projects

In an innovative digital environment, more work is organized around cross-departmental, discreet ventures. Thus, stakeholders noted that TMT executives today need to be able to manage cross-functional teams and projects. Relevant skills include selecting and developing effective teams, understanding project management disciplines and use of online collaboration tools, as discussed below.

7.8 Key Collaborative Skill: Leveraging Digital Collaborative Tools and Platforms

Industry leaders reported that managing multiple internal and external teams, partnerships and customer relationships requires the use of online collaboration tools and platforms to maximize productivity and enhance team communications. One executive remarked, “The collaborative business models don’t always work unless you can use the online tools. I spend three hours a day [meeting virtually].” Collaborative planning, meeting and real-time communications tools become essential when managing remote teams and dispersed independent contractors.

“Today we have a lot of independent contractors working from home and it’s one person in front of the computer... All of my guys are on chat and video conferencing.**”**

TMT Leader



Another key informant noted that familiarity with collaborative work disciplines and tools from the fields of participatory design, knowledge management and CSCW (Computer Supported Co-operative Work) could well be helpful to leaders developing their own collaborative work models.



8 Hybrid Technology and Business Skills and Knowledge

8.1 Introduction

Based on our consultations, the ideal TMT executive operating in the digital convergence environment has at least some technology capabilities (depending on the industry and organization), combined with business, management and leadership skills. In addition, she leverages data analytics and actively engages in the latest consumer digital devices and platforms, from smartphones to apps.

“*The demands of the manager today mirror the convergence in the marketplace in terms of the number of subject matter areas where the manager has to at least be conversant. I think it is forcing managers, particularly at the senior level, to be more conversant in platforms and technology as well as consumer behaviours. They are all connected.*”

TMT Leader

8.2 General Business, Management and Leadership Skills and Knowledge

Business Skills and Knowledge for ICT and Digital Media Professionals

As technology infuses business in all sectors, giving rise to new occupations combining business strategy with technical expertise, ICT-related industry organizations have indicated an urgent need for technology professionals with “hybrid business and technology skills.” The Information and Technology Council (the ICTC) concluded that “ICT occupations that demand a mix of technical, communications, interpersonal and business skills are experiencing skills shortages.”²⁷ As well, the Information and Technology Association of Canada (ITAC) has stated that “hybrid skills are particularly worthy of public policy focus for they reflect the central reality of the modern business environment.”²⁸

The introduction of combined Business Technology Management (BTM) degree programs in Canada at the post-secondary level are expected to close the business technology gap for a new generation of managers.²⁹ Other new offerings, such as OCAD University’s Graduate Program in

27 Information and Communications Technology Council (ICTC), *2011 LFS Annual Report, Developing Tomorrow’s Workforce Today*, page 15.

28 “ITAC’s Response to the Consultation Paper on a Digital Economy Strategy for Canada,” Submission to the Canadian Digital Economy Consultation by the Information Technology Association of Canada (ITAC), July 2010, page 33.

29 The BTM program was developed in partnership by the Canadian Coalition for Tomorrow’s ICT Skills and offered in Universities across Canada. See <http://ccict.ca/ccict-strategy/btm>



Digital Futures, address the need for professionals with competencies in art, design, enterprise and digital technologies.³⁰

Our interviews also showed a strong demand for “business technology hybrid” skills at the senior-management levels. One key informant told us, “You can be sharp as a tack on the technology side but without business sense your progression will likely be limited.” Another said, “We’re so technical at a telco, the focus has always been on engineering skills. But now, sound management, strategic planning and managing personnel are key.”

Business skills, including solid communications skills, strategic thinking, management and leadership were key in both large companies and start-ups. Skills relating to rights negotiation, understanding the regulatory environment were also mentioned, but less often. One leader in the start-up community observed that, “Today it’s all about a business opportunity or a new market; it’s not about the technology.” Business and management skills in general also represent significant skills gaps in these industries.

Management Skills for Everyone

To a lesser degree across all TMT sectors, leadership, team management, communications skills and financial acumen were also noted as management skills gaps.

8.3 Digital Technology Literacy

According to key informants, TMT leaders operating in the digital environment require digital technology literacy. The depth and types of technology skills needs vary by role and industry. However, in-demand TMT executives in non-technology roles are generally able to:

- Actively engage in digital platforms and devices in order to understand consumer tastes, habits and identify new opportunities
- Stay current in new technology trends in order to spot and assess new digital opportunities, tools and resources
- Leverage data analytics, social media and other tools to ‘listen’ and engage with customers
- Converse in applicable digital technologies in order to communicate with the team, colleagues and partners

“*Now that we’re integrated into a tech/cable company we are surrounded by engineers. This enhances the expectation that management has to be able to communicate on technology.*”

TMT Leader

³⁰ See OCAD University website for a full description of the Graduate Program in Digital Futures, http://www.ocadu.ca/programs/graduate_studies/digital_futures.htm



A number of digital leaders viewed data analytics in particular as integral to business.

As well, even senior technology professionals with deep skills require ongoing skills enhancement to keep current with new technologies.

The Digitally Engaged Executive

There is a rising expectation that TMT leaders should be actively engaged with current consumer technologies, including devices, social media and mobile applications and platforms in order to understand customers and identify new opportunities. One key informant told us, “People in senior roles are not always participating in the activities that their consumers are participating in. This is like running a radio station and never listening to the radio.” Active participation in a digital lifestyle is often a first indication that an executive possesses a current understanding of the digital marketplace.

“*When I’m interviewing people, [I] expect that they be completely versed in Twitter, Facebook, that they’ve experienced Apple TV, have an iPad and an iPhone, etc. That’s the baseline knowledge and comfort they have to have.*”

TMT Leader

Lack of digital engagement was noted repeatedly as a skills gap for senior managers, most of whom have not grown up in the digital era.

The Ascendancy of Digital Natives

Thus, stakeholders from digital departments and technology start-ups reported hiring younger, less-experienced digital natives in senior roles in order to acquire the latest digital skills and insights. Several key informants from legacy companies also reported a corporate shift to hiring younger digital natives to infuse the organization with digital intelligence. One leader told us of the need for more “age diversity” in their organization. “[Young people] are in a much better position to get where opportunities will be and what the challenges will be.”

However, younger executives often lack management experience. Thus, one interviewee observed, “The challenge of having young staff in more senior roles is the absence of great personal management skills.”



9 Leading and Participating in Digital Communications

The ability to effortlessly communicate with brands and other consumers has given rise to a new active and engaged customer, whose tastes and behaviours can be heard and immediately satisfied with continuously improved offerings. Thus, industry leaders reported that marketing is changing in TMT organizations.

As organizations move to engage and collaborate with consumers, traditional mass marketing is being supplemented by digital one-to-one or one-to-few communications, through social media and direct marketing tactics.

“*The basic relationship with customers has significantly changed. Today, marketing is far more personal; companies need to move from one-to-many to one-to-one or at least one-to-a few. The feedback loop is continuous, whether from direct feedback from customers or through indirect feedback from blogs, Facebook, Twitter, etc. There is an opportunity now for constant iteration and change to suit customer preferences.*”

TMT Leader

Today's TMT marketing executives need to blend traditional marketing skills with new digital communications strategies. One stakeholder said, “It's critical. We want to hire senior marketing people who have taken chances on social media... tried things early and embraced the channel.”

A solid majority of stakeholders viewed digital convergence management skills related to leading new digital marketing strategies as very important to the success of their organization or sector. However, this view was qualified by the observation that digital communications is largely a skill exclusively related to marketing professionals.

Key Skill for All Executives: Participating in Digital Communications

Notably, some stakeholders indicated that executives in general should be conversant in social media, and at least be listening passively to consumers, or ideally, they should be participating in meaningful relationships with consumers, now central players in the digital enterprise. The ability to leverage data analytics was again seen as an important skill to hone deep customer information, facilitating continuous iteration.



10 Career Management in the TMT Digital Era

As TMT industries and leadership profiles are transformed, TMT senior executives are likely to face a far more complex career environment than in the past. Building a career profile that offers skills and experiences of strategic importance to organizations while plotting new paths to capture emerging opportunities across the digital ecosystem will become increasingly crucial.

“*[Executives] will want a heavy dose of entrepreneurial DNA. There is a lot of change coming that will require swift acting, jumping, taking advantage of new windows of opportunities. I mean entrepreneurial skills in terms of how you lead your career and career path as well as having entrepreneurial skills to be attractive to an employer.*”

TMT Leader

Building New Skills and Knowledge

No single executive can possess all the digital convergence skills and knowledge covered in this Report, nor is it expected. It will, however, become increasingly important for executives to identify and build digital competencies most relevant to their current profession and career aspirations.

Our interviews indicated widely varied levels of corporate support for digital leadership training. Therefore, it will become increasingly important. Some organizations offer well-developed digital-related training. Others are less formal in their approach, relying on conferences and bringing in expert guest speakers on various digital subject areas.

“*It’s an ongoing issue for us. We’re setting a high bar in the coming year with our objective to provide 25 hours of training for each staff member.*”

TMT Leader

Some remarked on the lack of available external training. Others felt that comprehensive training was not necessary as their employees are “self-directed learners” who “seem to get it on their own.”

“*Our view has been that it’s one of those things that will sort itself out over time as everyone becomes adept at technology and the early adopters gain management experience.*”

TMT Leader

Those without access to comprehensive training support will need to independently identify and undertake appropriate skills and knowledge upgrading.



Building Varied Experience

“Management skills are changing. People are looking for a “one-stop shop” employee. Presidents of companies are looking for VPs who are able to multitask. You can’t just have a Vice President of TV.”

TMT Leader

Today’s executives are wise to gain experience that complements and extends their core skills. Leaders able to play a multifunctional role within their organization are of increasing strategic importance in TMT sectors.

“Because the economy and business models are moving so quickly, the skills of the individuals that are successful are very different than those who have been successful before. Often their paths are chaotic. These are people that traditionally you wouldn’t hire; you would think that they are flighty.”

TMT Leader

Broader experiences are also more likely to support greater career flexibility and choice. Forward thinking executives will seek out assignments that build competencies in strategically important leadership areas such as digital innovation, mobile or collaborative initiatives in a connected ecosystem. Building varied experience may require moving within firms, industries or sectors.

Proactive Career Planning: Building a Convergent Brand for the Digital Era

Whether transitioning from a low-growth specialty to an area of greater opportunity or maximizing options across the TMT ecosystem, developing an industry-neutral digital brand, emphasizing in-demand competencies versus a specialized subject matter expertise will likely be necessary.

“I am no longer a publishing, film or TV person. Today I call myself a consumer media executive. I play in the technology, telecom and media space.”

TMT Leader

At a time when traditional executive career progressions may no longer be the norm, proactive strategic career planning, from plotting complex career trajectories to assessing and seeking skills and knowledge upgrading while building and promoting an industry-neutral brand designed for the convergent digital environment, is likely to become indispensable.



11 Summary and Conclusions

In this Report, we have presented 61 TMT leaders' perceptions of the key digital convergence skills needs of senior executives and entrepreneurs in the Canadian TMT industries.

In summary, we have found that today's executives must negotiate a TMT landscape that is marked by transformation and convergence as a result of the introduction of new digital technologies and platforms, and shifts in consumer behaviour.

While legacy industries continue to derive substantial, if not the majority, of their revenues from traditional operations and business models, digital is an important growth driver. As a result, TMT organizations are to varying degrees increasingly focused on exploiting new and innovative products and services.

The digital convergence management environment is fuelling the need for TMT leaders who have the skills and attributes to perform and lead others in a setting marked by innovation, collaboration and constant change.

We have isolated a series of common and critical management skills themes that, in combination, are in short supply and in high demand. A composite in-demand TMT digital convergence executive is a bold innovator, business strategist and collaborator who is well versed in TMT trends and new technologies, and is able to execute in fast-paced, ambiguous environments. A summary of digital convergence executive skills is set out below.

The Multi-Specialist Leader

- As organizations pursue opportunities that cross departmental teams and sector borders, there is increasing demand for one-stop executives, with expertise combined with broad or multi-sector and multi-functional knowledge that can work to identify and execute on complex digital offerings.

The Innovative Leader

- Innovation-related skills in the digital convergence environment are considered critical. According to key informants, TMT organizations need leaders that are agile and action oriented, can adapt to multiple roles and changing priorities, and move ahead despite ambiguity. Add to this, digital convergence requires leadership by bold risk-takers, who can turn on a dime and then recover from inevitable failures.
- In the digital convergence environment, executives require capabilities to think creatively and vision possibilities, while applying strategic business rigour to assess new opportunities, develop digital business models and gain buy-in for their ideas externally and internally.



- Leaders working closely with digital products and services must work with iterative, time-condensed development processes, have the entrepreneurial skills to grow successful products to businesses and then, sometimes, to scale the business itself in both the start up context and within larger organizations.
- In addition, key informants identified skills needs relating to creating innovation processes and organizations, as well as building and nurturing creative teams that can lead the organization into the future.

The Collaborative Leader

- Collaborative leadership skills in the digital convergence environment are considered of critical importance. The vast majority of industry leaders we spoke with indicated that the ability to lead collaborative teams and business relationships was a key executive skill.
- This includes skills to identify, negotiate and manage external alliances and partnerships across TMT industries.
- It also includes working collaboratively across the organization to lead and participate in cross-functional teams in order to access multiple centres of expertise and quickly move innovative products to market.
- Collaborative leadership is marked by greater transparency, openness and a facilitative style.

The Technology Business Strategist

- Non-technology-focused business executives require a greater level of technology skills, specifically related to digital. There is a need, as well, for stronger business skills for executives engaged in digital media and technology-focused roles. However, there appears to be a gap across all the sectors with respect to management/leadership skills, particularly in newer executives.
- TMT executives in the digital convergence environment are required to actively participate in digital technology platforms in order to understand consumer tastes and identify new opportunities.
- We also noted a trend relating to organizations hiring younger, less-experienced digital natives in senior roles in order to acquire their digital skills and insights. However, gaps in management and leadership skills could limit their potential and should be addressed with training.



The Consumer-Facing Leader

- Consumer ability to effortlessly communicate with brands and other consumers has given rise to the new active and engaged customer whose tastes and behaviours can be ‘heard’ and immediately satisfied with continuously improved offerings.
- TMT executives operating in the digital convergence environment will increasingly need to engage in a deep and active relationship with their customers, co-developing solutions to customer needs and aspirations. This entails a strategic shift from focusing on products and features to putting the customer at the centre of the enterprise, understanding their pain points and rapidly devising solutions that address those needs.
- It also entails the ability to leverage data analytics, social media and other research tools to gain real-time customer intelligence and enable ongoing, meaningful customer collaboration.

Our interviews presented a picture of an evolving workplace where leadership is undergoing a parallel transformation. As new digital technology proliferates and organizations increase their focus on new and innovative offerings in the future, many of which will require extensive collaboration, the importance of these skills will very likely grow.

While no one executive can possess all skills and attributes, if senior women are to retain employment and advance in the TMT sectors, opportunities for skills upgrading will be critical.

Accessible, cross-sector TMT training will also be key to ensuring that Canadian TMT industries possess the senior human capital most needed to grow their businesses and create new and robust knowledge employment in the digital economy.



Appendix A

TMT Industries and Selected Trends

Introduction

As digital technology revolutionizes industries at large, Canada's TMT sectors are positioned at the core of the global digital economy. As such, the TMT industries offer highly skilled jobs, growth and economic prosperity for Canada. However, all three sectors are undergoing significant change as a result of the introduction of new digital technologies and platforms and shifts in consumer behaviour. Digitization and network convergence, mobility, hybrid devices, cloud computing, the consumerization of technology and the rise of social networking have been transformational.

1.1 Entertainment and Media

The entertainment and media sector, as defined by global consulting firm PwC, includes a diverse range of industries and products, including books, Internet access and licence fees, magazines, film, television, radio, newspapers, music, video games and advertising.¹ In Canada, E&M spending totalled \$44.166 billion in 2011 and is projected to grow at a healthy 6.5% compound annual growth rate (CAGR) to 2016.²

Digital technologies and changing consumer behaviours have resulted in digital being the growth driver of the sector overall.

- According to PwC, global non-digital entertainment and media spending in 2011 increased only 0.6% from 2010 while digital spending rose by 17.6%.³
- Globally, digital is forecast to account for 67% of total entertainment and spending growth from 2012 through to 2016, accounting for 37.5% of all media and entertainment spending by 2016.⁴

Digital, while fast growing, often represents a small percentage of current revenues for media players.

- For example, in 2011, PwC projected that Canadian conventional television advertising revenues would grow at a CAGR of only 3.7% between 2012 and 2016. However, revenue was expected to reach \$2.947 billion in 2016. Mobile television advertising was projected to grow

1 According to the PwC Global Entertainment and Media Outlook, 2012 -2016, Media and Entertainment is defined to include Internet access spending: wired and mobile, internet advertising: wired and mobile, television subscriptions and license fees, television advertising, music, filmed entertainment, video games, radio, out-of-home advertising, consumer magazine publishing, newspaper publishing, consumer and educational book publishing, business to business. (Source: PricewaterhouseCoopers LLP. (PwC), *Global Entertainment and Media Outlook 2012-2016, Industry Overview, 13th Annual Edition*, June 2012, page 8.)

2 Ibid., page 49.

3 Ibid., page 48.

4 Ibid.



at a CAGR of 99.4% in the same period, but revenues in 2016 were projected to be only \$65.8 million.¹

Thus, many organizations face the dual challenge of supporting legacy operations from which they derive substantial if not the bulk of revenues while concurrently nurturing digital growth.

As digital consumption grows, associated revenues have tended not to offset the value lost in traditional media.² For example, according to a 2010 IBM Institute for Value study, a broadcast TV viewer was estimated to bring in three times the value of an online viewer.³ Other challenges include competition from the broader TMT ecosystem including device manufacturers and new Internet players.⁴

Digital Media

Digital media is defined variously as a sub-sector of both media and entertainment and ICT. Positioned at the intersection of new digital technologies and content, Digital Media has been recognized by the Federal Government as a key plank in Canada's digital economy future. The Organisation for Economic Co-operation and Development (OECD) has stated that digital content will increasingly become "the basic creative infrastructure underpinning the knowledge economy and at the centre of health, educational, and cultural activities."⁵

While there is no one accepted definition, the Canadian Interactive Industry Alliance defines Interactive Digital Media (IDM) as follows:

Digital content and environments with which users can actively participate or which facilitates collaborative participation among multiple users for the purposes of entertainment, information or education, and is commonly delivered via the Internet, mobile networks, gaming consoles or media storage devices. The two essential sub-sectors of the interactive digital media industry include the entities creating the end-user experience (creators) and those designing the applications allowing for the creation or distribution of the content and environments to the user (enablers).⁶

This definition includes companies operating in the areas of game design and development, cross-platform entertainment, interactive training, social media and mobile products and services.

- According to Industry Canada (2010), the digital media industry represents \$3.5 billion in business.⁷ The sector is estimated to employ 52,489 people as of 2008.⁸

1 PwC, *Entertainment and Media Outlook 2011-2015, Data Explorer*, obtained from PwC Toronto Office.

2 IBM Institute for Value, *Beyond Content, Capitalizing on the New Revenue Opportunities*, 2010, page 1.

3 *Ibid.*, page 6.

4 *Ibid.*, page 1.

5 Organisation for Economic Co-operation and Development (OECD), *Digital Broadband Content: Digital Content Strategies and Policies, OECD Digital Economy Papers*, 2006, page 119.

6 Canadian Interactive Alliance, *2008 Canadian Interactive Industry Profile*, February 2009, page 20.

7 Information and Communications Technology Council (ICTC), *A Human Resource Situational Analysis for Digital Media in Canada*, May 2011, page 2.

8 Canadian Interactive Alliance, *2008 Canadian Interactive Industry Profile*, page 26.



However, the sub-sector, according to this definition, does not include traditional ICT or media companies, which increasingly engage in creating and distributing digital content and applications. As more production of interactive digital experiences is undertaken by both content and ICT organizations, it may become more difficult to measure digital media as a discreet sector going forward.

Even digital media industries are undergoing ongoing change and disruption. In the video games industry, global spending on online and wireless games is predicted to surpass console and PC games in 2013, and will be 36% larger by 2016.¹

1.2 Information Communications Technology (ICT)

The ICT sector is a key source of economic growth and technological innovation in the Canadian economy. Composed of a diverse range of businesses, the sector includes telecommunications and Internet services, ICT consulting services, hardware, microelectronics, software and electronic content.²

According to the Information Communications Technology Council of Canada (the ICTC), the sector contributed \$61.33 billion to Canadian GDP in 2011.³ Canada's ICT sector is an engine of job growth, employing 647,000 workers in 2011.⁴

- With an average unemployment of 2.4% in 2011, Canada's ICT labour force is statistically fully employed.⁵ The ICTC predicts that employers will need to hire approximately 106,000 ICT workers between 2011 and 2016.⁶

As the creators of digital infrastructure, hardware and services, technology players are at the heart of global economic transformation and disruption. However, the sector itself is undergoing major change. Products and services aligned with mobile, cloud, big data, and social technologies, are new sector growth drivers.⁷ The result is a shift in value and in some cases disruption of legacy businesses. For example:

- Mobile now represents a significant ICT revenue share. Forrester Research recently predicted that US mobile spending will reach \$1.3 trillion by 2016, or 35% of the technology economy.⁸
- The rapid consumer adoption of smartphones and media tablets has impacted the computer hardware industry. NPD Display Search forecasts tablet sales to exceed computer notebook sales by 2016.⁹

1 PwC, *Entertainment and Media Outlook 2012-2016*, page 60.

2 Information Technology Association of Canada website, itac.ca/about

3 ICTC, *2011 LFS Annual Report*, 2012, page 2.

4 *Ibid.*, page 3.

5 Nordicity in association with David Ticoll, *Labour Supply/Demand Dynamics of Canada's Information and Communications Technology (ICT) Sector*, March 2012, page 9.

6 ICTC, *Outlook for Human Resources in the ICT Labour Market, 2011-2016*, March, 2011.

7 IDC, *Top 10 Predictions, IDC Predictions 2012: Competing for 2020*, December 2011, page 2.

8 Ryan Kim, "Preparing for a Mobile-First World" Gigaom, February 13, 2012. <http://gigaom.com/2012/02/13/preparing-for-a-mobile-first-world/>

9 "Tablet Shipments to Surpass Notebook Shipments in 2016", NPD Display Search, July 3, 2012. http://www.displaysearch.com/cps/rde/xchg/displaysearch/hs.xsl/120703_tablet_shipments_to_surpass_notebook_shipments_in_2016.asp



- Likewise, data mobility and cloud computing is disrupting software industry business models. IDC predicts that global cloud-based software as service (SaaS) delivery will significantly outpace traditional software products, growing nearly five times faster than the software market as a whole. IDC predicts that by 2015, approximately 24% of all new business software purchases will be of service-enabled software.¹
- In another key trend, employees are increasingly bringing smartphones, media tablets and other devices to work. This ‘consumerization of technology’ is driving a shift in the enterprise technology ecosystem, with consumer-purchased devices eroding corporate PC sales. One forecast predicts that the enterprise will account for approximately 35% of media tablets sold in 2015, although “these sales will not be clearly defined as enterprise purchases.”²

As a result of trends such as these, traditional industries face an array of opportunities and challenges, including business model disruption and the influx of new Internet players that have quickly gained market share.

1.3 Telecommunications

A sub-sector of ICT, Canadian telecommunications service organizations, according to the CRTC, operate in any of six markets including local and access, long distance, internet, data, private line and wireless.³

In the telecommunications sector, traditional telephony has been replaced by a model of converged network-centric digital services, accessed through numerous providers, some non-traditional. Digital mobility is transforming consumer and business consumption and communication.

- Consumer adoption of wireless technology has been rapid. According to IAB Canada, at the end of 2011, almost 85% of Canadians were cell phone subscribers and 45% of mobile subscribers had smartphones.⁴ eMarketer projects that by 2016, smartphone users will make up 62% of mobile phone users.⁵
- As businesses increasingly use their phones and tablets as portable offices and entertainment platforms, a key mobile trend has been the shift from voice usage to data and video. Ericsson has estimated that mobile data traffic surpassed mobile voice traffic during December 2009.⁶ According to Cisco, mobile video traffic exceeded 50% of all mobile traffic for the first time in 2011.⁷

1 IDC, *Market Analysis Perspective: Worldwide SaaS & Cloud Services, 2011: New Models for Delivering Software* [Abstract], December 2011. <http://www.idc.com/getdoc.jsp?containerId=232239#.UMqov29JM11>

2 “Gartner Says Worldwide Media Tablets Sales to Reach 119 Million Units in 2012”, Gartner, April 10, 2012, <http://www.gartner.com/it/page.jsp?id=1980115>

3 Canadian Radio-television and Telecommunications Commission (CRTC), *Communications Monitoring Report, September 2012*, page ii.

4 IAB Canada, *Mobile in Canada: A Summary of Current Facts + Trends*, page 3.

5 eMarketer, “Canada Hits Smartphone User Milestone”, March 26, 2012. <http://www.emarketer.com/Article.aspx?R=1008928&e cid=b304596ffad6488bb1f7a53d80cb8e6a>

6 CRTC, *Navigating Convergence II: Charting Canadian Change and Regulatory Implications*, August 2011, page 17.

7 Cisco, *Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2011–2016*, February 2012, page 1.



Today, wireless, particularly wireless data, is the sector's growth engine.

- In 2011 Canadian wireless revenues were \$19.1 billion or approximately 45% of total telecommunications revenues.¹ By 2014, they are forecasted to represent half of all Canadian telecommunications spending, or \$23.7 billion.²
- Due to the rise of smart devices, consumer wireless data spending is expected to grow more than four times more quickly than wireless voice by the end of 2014.³
- Revenues associated with Canadian telecommunications voice services are in decline, dropping from \$12.6 billion in 2010 to 11.9 billion in 2011.⁴

The telecommunications sector must contend with rising infrastructure costs associated with exponential growth of traffic, while limiting prices as competition intensifies. In an effort to strengthen revenue models and secure their digital future, some organizations are scaling the extended value chain for new opportunities including entertainment and various mobile services.

1.4 Corporate Diversification, Consolidation and Convergence

As TMT organizations negotiate a complex and volatile environment, the nature of the TMT ecosystem itself is evolving. Today, the sectors are marked by increased interdependence and porous borders, consolidation and ultimately, industry restructuring.

Cross-sector diversification has become an important TMT strategy to confront disruption and capture value in the digital ecosystem. The move to capture greater value in the digital ecosystem is driving increased mergers, acquisitions and consolidation.

- Google's acquisition of Motorola Mobility Holdings for close to \$11.9 billion was the largest global technology acquisition in 2011.⁵ It is a high-profile example of the trend to cross-sector mergers of smart mobile devices and applications, content and services.⁶
- Microsoft's 2011 \$8.6 billion acquisition of Skype demonstrates the convergence of the Internet and mobile video, now integral to business and consumer communications and collaboration.⁷
- According to Ernst & Young, the number of technology mergers and acquisitions (M&A) in Canada nearly doubled from 2010 to 2011.⁸

1 CRTC, *Communications Monitoring Report 2012*, September 2012, page 165.

2 CRTC, *Navigating Convergence II*, page 14.

3 *Ibid.*, page 18.

4 CRTC, *Communications Monitoring Report 2012*, page 125.

5 Ernst & Young, *Global Technology M&A Update October-December 2011 and Year in Review*, 2012, page 7.

6 *Ibid.*, page 22.

7 *Ibid.*, page 23.

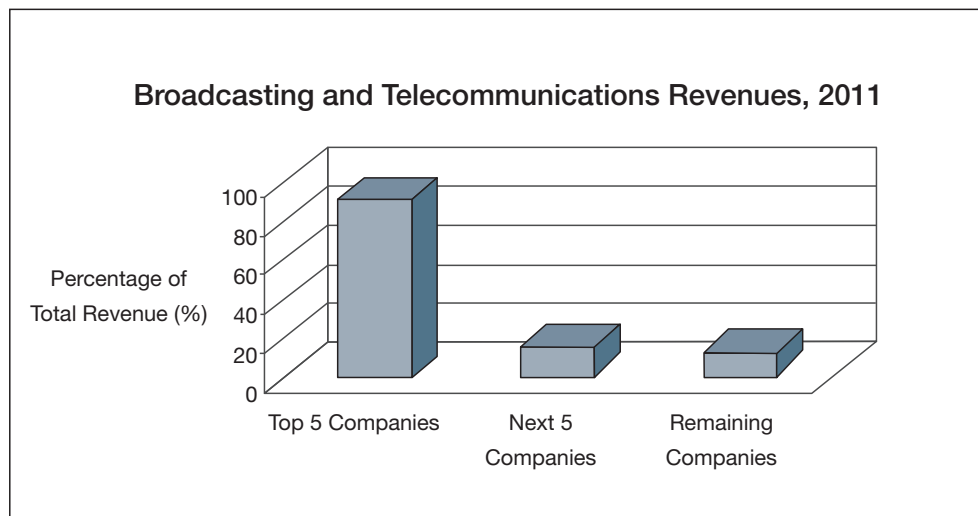
8 "Technology M&A in Canada nearly doubled in 2011: Ernst & Young," CNW Telbec, March 14, 2012, <http://www.newswire.ca/fr/story/937111/technology-m-a-in-canada-nearly-doubled-in-2011-ernst-young>



Canadian vertically-integrated telecommunications companies typically operate voice and data networks, cable, as well as a variety of media including broadcast and specialty channels, digital media, radio and sometimes print and live entertainment.¹

According to the Canadian Radio-television and Telecommunications Commission (CRTC), in 2011, the five largest companies in the communications industry captured 83% of revenues for the sector. The next five captured 10% of revenues.² A revenue comparison is set out in Figure 1, below.

Figure 1:
Broadcasting and telecommunications revenues for the top 5 group of companies, the next top 5 group and the remaining companies



Note: Revenues for the top companies include the revenues of their affiliates. Affiliates are included with their parent company.

Source: CRTC, Communications Monitoring Report 2012, The Communications Service Industry, Figure 3.1.2.

This trend is global with Internet companies such as Google and Apple creating end-to-end vertical ecosystems combining control of hardware, software, application development, service distribution as well as content and experiences.

For example, Google has diversified from its main internet advertising business, to add, amongst its many holdings, the Android mobile operating system, mobile handsets (through its Motorola acquisition), Google TV and increasingly professional content through its YouTube online video channel strategy.³ In 2012, it introduced its Fibre Net broadband television service.⁴

Stakeholders we interviewed for this Consultation pointed out that in Canada, new technology start-ups are also increasingly focused on multi-sector strategies and products.

1 Library of Parliament, *Media Ownership and Convergence in Canada (In Brief)*, April 10, 2012, page 2.

2 CRTC, *Communications Monitoring Report 2012*, Page ii.

3 Andrew Wallenstein, "YouTube Unveils Pro Channel Push", *Variety*, October 28, 2011, <http://www.variety.com/article/VR1118045254?refCatId=1009>

4 Marguerite Reardon, "Google Launches Kansas City Fibre Net, Intros Google Fibre TV", *CNET News*, July 26, 2012, http://news.cnet.com/8301-1023_3-57480670-93/google-launches-kansas-city-fiber-net-intros-google-fiber-tv/



1.5 Conclusions

In summary, digital-related products and services from cloud services and wireless data to digital advertising are driving growth in the TMT sectors. As TMT industries undergo massive transformation, traditional business model disruption is prompting the search for new growth opportunities both within and outside of traditional industry boundaries.

Slowed growth, or in some cases decline in legacy spending, has the potential to limit senior-level employment opportunities without appropriate digital leadership skills and career strategies. However, growth in new digital segments presents significant career opportunities for those who are prepared.



Appendix B

Key Informants

Nyla Ahmad, Vice President, Local Digital and Rogers Ventures, Rogers Communications Inc.
Namir Anani, President and CEO, Information and Communications Technology Council
Fariba Anderson, Vice President Information Technology & Chief Information Officer, Municipal Property Assessment Corporation
Chris Arsenault, Managing Partner, iNovia Capital
Pierre Blouin, Chief Executive Officer, Manitoba Telecom Services Inc. and MTS Allstream
Norm Bolen, Broadcast Executive and Consultant
Andrew Bridge, Managing Director, Virgin Mobile Canada
Alex Brown, President, Alex B. & Associates, and President, Aprilage Inc.
Jamie Brown, CEO & Executive Producer, Frantic Films
Lynda Brown-Ganzert, CEO, zuluMe Corp & Vice President, Nordicity
Ted Brunt, President, Sharp Sauce
Kim Carter, Vice President, Human Resources, Astral Television Networks
John Cassaday, President and CEO, Corus Entertainment Inc.
Sally J. Daub, President, Chief Executive Officer and Director, ViXS Systems Inc.
Caren DesBrisay, Vice President, Human Resources, Intellware Development Inc.
Dr. Sara Diamond, President and Vice-Chancellor, OCAD University
Michelle Digulla, Former President & General Manager, Motorola Mobility Canada Ltd.
Trevor Doerksen, CEO and Founder, Mobovivo Inc.
Joshua Dorsey, CEO, B360 Media Inc./Nadia G's Bitchin' Kitchen
Janet Eastwood, President and CEO, Two Red Chairs Executive Coaching
Simon Foster, Senior Vice President, Digital Publishing and Business Development, Blue Ant Media
Roberta Fox, Chairman and Chief Innovation Officer, FOX GROUP Technology & Publisher and Editor in Chief, FOX GROUP Media
Rochelle Grayson, Program Advisor/Industry Chair for the Digital Strategy Certificate Program, The University of British Columbia
Mark Henderson, President & CEO, Ericsson Canada Inc.
Mark Jamison, CEO, Magazines Canada
Krista Jones, Education Innovation Lead & Senior Advisor, Information Technology, Communications and Entertainment, MaRS Discovery District & Mentor, Next 36
Kimberly Kaplan, CEO, Offeron Media Corp.
Fraser Kelton, COO, GetGlue
Iain Klugman, President & CEO, Communitech
Kathy Knight, CEO, Information Communication Technologies Association of Manitoba
Hubert Lacroix, President & CEO, Canadian Broadcasting Corporation/Radio-Canada
Lynda Leonard, Senior Vice President, Information Technology Association of Canada
Walter Levitt, Executive Vice President Marketing, Comedy Central & Board Vice-Chair, Canadian Marketing Association
Lisa Lyons, President, Kids Can Press Ltd.
Michael MacMillan, CEO, Blue Ant Media
John Maduri, Chief Executive Officer, Xplornet Communications Inc.



Elaine Mah, Director for Canada, Intel Corporation
Graham Moysey, Country Manager, AOL Canada Inc.
Emily Nasits, Director, Broadcast Relations, National Hockey League
Ron Perrotta, Vice President, Marketing & Strategic Planning, Cogeco Cable Inc.
Dr. Veena Rawat, Vice President and Ambassador to ITU, Research In Motion Ltd.
Marty Roberts, Senior Vice President Sales and Marketing, thePlatform for Media, Inc.
Vivian Rosenthal, Founder & CEO, GoldRun
Mark Ruddock, CEO, Wonga Canada Inc.
Lucy Sanders, CEO and Co-Founder, National Center for Women and Information
Technology & Executive in Residence, Alliance for Technology, Learning and Society
Institute, University of Colorado at Boulder
Kevin Shea, Chairman, Ontario Media Development Corporation
Andra Sheffer, Executive Director, Bell Broadcast and New Media Fund, Independent
Production Fund & Cogeco Program Development Fund
Karen Sheriff, President & CEO, Bell Aliant Inc.
Denise Shortt, Vice President Industry Development, Information Technology Association
of Canada
Andrea Stairs, Country Manager, eBay Canada
Ron Styles, President & CEO, SaskTel
Kirsten Sutton, Vice President & Managing Director, SAP Labs Canada
Wendy Swan, COO, Neotelis Inc. & Co-Editor, InfoTelecom Magazine
Jason Tafler, Chief Digital Officer, Rogers Media Inc.
David Ticoll, Special Advisor, Canadian Coalition for Tomorrow's ICT Skills (CCICT) &
Distinguished Visiting Scholar, The G. Raymond Chang School of Continuing Education,
Ryerson University
Dr. Kevin Tuer, Managing Director, Canadian Digital Media Network and Vice President
Digital Media, Communitech
Vanda Vicars, President, Vicars Consulting Inc.
Richard White, Former General Manager-Canada, Nokia Products Ltd.
Barbara Williams, Senior Vice President Content, Shaw Media
David Zitzerman, Partner & Head of the Entertainment Law Group, Goodmans LLP



Appendix C

CWC: Digital Economy Advisory Committee

Nyla Ahmad, Vice President, Local Digital and Rogers Ventures, Rogers Communications Inc.
Namir Anani, President and CEO, Information and Communications Technology Council
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Ted Brunt, President, Sharp Sauce
Kim Carter, Vice President Human Resources, Astral Television Networks
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Dr. Sara Diamond, President and Vice-Chancellor, OCAD University
Pamela Dinsmore, Vice President, Regulatory- Cable and Broadband, Rogers Communications
Elizabeth Duffy-Maclean, Managing Director of the Morning and Evening MBA & Master of Finance Program, Rotman School of Management
Janet Eastwood, President and CEO, Two Red Chairs Executive Coaching
Leah Eichler, Founder, Femme-O-Nomics & Founder and CEO, r/ally
Roberta Fox, Chairman and Chief Innovation Officer, FOX GROUP Technology & Publisher and Editor in Chief, FOX GROUP Media
Kate Hanley, President, Digital Theory Media Consulting
Mark Henderson, President & CEO, Ericsson Canada Inc.
Lynda Leonard, Senior Vice President, Information Technology Association of Canada
Lisa Lyons, President, Kids Can Press Ltd.
Sandra Mason, Chief Financial Officer, The Globe and Mail
Stephanie MacKendrick, Advisor and past-President, Canadian Women in Communications
Jim Muzyka, Senior Vice President & General Manager, Xerox Global Services, Xerox Corporation
Dr. Barbara Orser, Deloitte Professor in the Management of Growth Enterprises, University of Ottawa, Tefler School of Management
Lynda Partner, CEO, Partners Inc.
Helen Reeves, Vice President, Corporate Communications, Morneau Shepell Ltd.
Mark Ruddock, CEO, Wonga Canada Inc.
Andra Sheffer, Executive Director, Bell Broadcast and New Media Fund, Independent Production Fund & Cogeco Program Development Fund
Joanne Stanley, Special Advisor, Strategy and Technology, Canadian Women in Communications
Wendy Swan, COO, Neotelis Inc. & Co-Editor, InfoTelecom Magazine
David Ticoll, Special Advisor, Canadian Coalition for Tomorrow's ICT Skills (CCICT) & Distinguished Visiting Scholar, The G. Raymond Chang School of Continuing Education, Ryerson University
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