Navigating and Managing Technology-Driven Change.

A Guide for Planning and Action

Introduction

Technology can improve the performance and productivity of organizations. But many face barriers to selecting, implementing, and using technologies to achieve benefits. These barriers include limited resources, weak motivation, difficulties enlisting and coordinating expertise, rigid organizational structure and culture, and confusion about goals. Many firms—especially SMEs—are ill-equipped to address the challenges due to weak management capacity and experience.

This Planning and Action Guide can help. It provides organizations with a structured approach for assessing their technology needs, capacities, and goals, and identifying actions that can improve success with technology change.

About the Planning and Action Guide

Organizations that want to improve technology change management should use this guide to gather relevant information, make better decisions, and keep track of the many moving parts involved in change.

As shown in the guide, there are five key stages to technology change management. Each stage lists critical questions that organizations should address to gather information about their needs, goals, capacities, and other factors relevant to successfully navigating change. It also identifies specific actions that organizations can take to improve their chances of successfully managing and benefiting from change.

A list of external resources that can help firms—both technical and managerial—is provided at the end of the guide. Findings from a recent Conference Board briefing, *Navigating and Managing Technology-Driven Change: What It Is and How to Deal With It*, serve as the foundation for this guide.

Stages

Changes rarely follow a linear path, but being mindful of the five main stages related to technology change can improve success.

1. **Scanning**—Observing and assessing technology trends, opportunities, and risks in the competitive environment, focusing on those that are relevant to one's organization.

2. **Assessment and selection**—Identifying, assessing, and selecting (or building) technologies that are appropriate for one's organization.

3. **Planning**—Developing clear plans for the tasks, resources, and people required for technology change, including:
- identifying the goals of the change;
- creating and empowering a change team;
- developing a communications plan;
- identifying key steps and sequences for a successful change;
- developing a risk mitigation and management plan.

4. **Implementation**—Beginning and completing technology adoption by following the plan, but also by being attentive and responsive to unforeseen issues.

5. **Measurement and improvement**—Observing, measuring, and assessing the performance of the new technology and its impact on performance and productivity, and taking action to adjust technologies and behaviour to maximize benefits.

Navigating Technology Change: A Guide for Planning and Action

1. Scan

Observe and assess technology trends—and opportunities and risks in the competitive environment—that are relevant to your business.

Guiding Questions	Actions
• Which trends, opportunities, and risks are emerging in the competitive environment that could affect our business? • Which technologies are emerging that could help us improve our business and respond to opportunities and threats? • Which technologies are competitors, suppliers, customers, and others adopting that could affect our business? • Which new markets and growth opportunities are emerging technologies helping to create?	• Know the business we are in and use that as a lens for scanning trends, opportunities, and risks that are relevant to our business. • Scan as broadly, deeply, and frequently as time and resources allow. • Assign a specific individual or team to scan the environment using, where possible, advanced scanning techniques such as horizon scanning and strategic foresight. • Ensure that the scanning person or team is knowledgeable about our business. • Empower scanners to attend conferences, meetings, and workshops. Encourage them to talk with other employees, customers, suppliers, peers, and competitors when appropriate.

2. Assess and Select

Identify, assess, and select technologies that are appropriate for your business.

Guiding Questions	Actions
• What is the nature of our business and how might candidate technologies improve it? • Who will use the technology, how will they use it, and how will it affect their work? • In what specific ways could a candidate technology improve our business and processes? • In what specific ways could a candidate technology harm our business and processes? • What will the technology, the change process, and operation of the technology cost? • Is the return on investment likely to be positive? Do the (long-term) benefits outweigh the costs?	• Consider how candidate technologies align with or depart from our mission and values. • Identify who will use and/or be affected by a candidate technology. Solicit their feedback. • Assess candidate technologies for potential benefits (e.g., better productivity, lower costs, higher sales, and profits). • Assess candidate technologies for potential harms/risks (e.g., poor technology performance, lower productivity, higher costs). – Listen critically to what vendors say about cost, performance. Ask questions. – Talk to other companies about benefits and challenges with specific technologies. – Consider possible risks (e.g., technologies that fail to live up to expectations, and higher-than-expected costs). Ask vendors, users, employees, and others how such risks are—or could be—managed. • Consider ways to build or customize technologies more appropriate to the firm's needs, goals, and risk tolerance. • Estimate the cost of the technology and change process by gathering and assessing information from vendors, users, employees, and others. • Select or build technologies that make sense for the firm, that can produce benefits, and for which the risks are manageable.

3. Plan

Develop clear plans for the tasks, resources, and people required for technology change.

Guiding Questions	Actions
3.1 Identify goals	
• What do we want to achieve with this technology change? • What is the business case? • How will we know when we have succeeded?	• Set clear goals with respect to the product, service, or process improvements that we expect to achieve with the technology. • Develop a business case that articulates the purpose of change, the expected benefits and costs, and the return on investment and effort. • Consider breaking longer-term projects into smaller segments of 100 days or less to keep them manageable and to facilitate easier progress measurement.
3.2 Create and empower the change team	
• Who will have primary responsibility for leading and completing the change? • What expertise—technical and managerial—will we need to facilitate successful change? • Which of the needed expertise can be found internally, and which expertise must be found externally?	• Identify and empower a change leader inside the firm who understands the business and who will hold primary responsibility for guiding and completing the change. • Establish clear roles and responsibilities for other team members—including managers, technical staff, and operational staff. • Enlist external assistance where necessary or helpful—including vendor experts, innovation intermediaries, and consultants with specialized expertise. • Select an individual to have primary responsibility for collecting and reporting on key metrics.
3.3 Develop a communications plan	
• What do we need to communicate and how can we best do that? • Which processes will we put in place to ensure that employees' concerns and feedback are received?	• Agree on key messages with the change leader, change team, and the firm's leaders. • Identify key spokespeople—including prominent roles for both the change leader and CEO (to ensure that staff is aware that the change leader has support from the top). • Determine which messages should be communicated at which stages. • Ensure that the business case and goals of the change are communicated early, clearly, and frequently. • Create mechanisms for employee feedback—to gather information about change progress and implications, generate legitimacy among staff, and understand the "mood" of the organization.

3.4 Identify key steps and sequencing

- Which milestones do we want or need to reach during the change process?
- What education and training will be required for employees to use new technologies to maximum benefit?
- Which legacy systems, practices, and behaviours will be affected?
- What is the best order/sequence for introducing new technology/systems and shutting off legacy systems?
- Which metrics would give us clear indications of progress and success?

- Identify the steps of the change process in consultation with experts, staff, and leaders.
- Determine training needs and when and how they will be delivered.
- Identify legacy systems that will be affected, and determine when it makes sense to phase those out.
- Identify and create measures for key milestones and accomplishments for each stage.
- Consider using a dashboard or scorecard to monitor progress.

3.5 Develop a risk mitigation and management plan

- Which risks and challenges might emerge?
- Which metrics would give us early warning of emerging risks?
- Which steps and strategies do we have to mitigate and address potential risks?

- Through discussion with experts, staff, vendors, and other organizations, identify likelihood and severity of possible risks and challenges that could emerge.
- Select, and add to dashboard, metrics that would provide early indication of emerging risks and challenges.
- Consider (and implement) measures that would reduce the likelihood of key risks emerging.
- Consider (and implement when necessary) measures that can reduce the severity of consequences when risks do emerge.

4. Implement New Technologies

Begin and complete technology adoption, following the plan but also being attentive and responsive to unforeseen issues.

Guiding Questions	Actions
- Are we clearly, repeatedly, and effectively communicating to staff, the vision, goals, and business case for the change?	- Communicate clearly and repeatedly, including reminding all involved of the value and goals of the change.
- Do people and teams know their roles and responsibilities, and are they fulfilling them?	- Ensure that feedback from employees is being received and considered.
- Are the employees affected by the new technologies being educated, trained, and supported?	- Ensure regular contact with vendors on progress, costs, and issues.
- Are we in regular contact with technology vendors to monitor progress and costs, and to address issues?	- Capture and record data in the dashboard.
- Do we have mechanisms in place to identify and respond to emerging risks and challenges in the change process?	- Assess progress and watch for early indicators of emerging risks.
	- Implement elements of risk mitigation and the management plan as appropriate.

5. Measure and Improve

Observe, measure, and assess the performance of the new technology and its impact on relevant metrics of performance and productivity. Take action to adjust technologies and behaviour to maximize benefits.

Guiding Questions	Actions
• Based on selected metrics and practical experience, are we achieving the goals of the change initiative?	• Use the new technology to improve performance and productivity.
• Are we using the technology as expected and achieving benefits?	• Based on goals and expectations, determine whether technology is producing expected (and maximum) benefits.
• What steps can we take to improve implementation and performance?	• Identify and address challenges and issues that may be hindering achievement of maximum benefit.
• Which lessons have we learned that can be applied to future technology change initiatives?	• Identify lessons and apply to future technology change initiatives.

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Resources

Concierge Service

National Research Council—Industrial
Research Assistance Program
www.nrc-cnrc.gc.ca/eng/irap/concierge

- Single access point for high-quality, timely advice to help SMEs innovate and grow.
- Offers support and opportunities for accessing funding, and technical and managerial support for innovation and growth.

Industrial Technology Advisors

National Research Council—Industrial
Research Assistance Program
www.nrc-cnrc.gc.ca/eng/irap/about/advisors.html

- 240 advisors with R&D and entrepreneurial experience are located in technology communities, local associations, and universities and colleges across Canada. These advisors are available to assist firms with a range of innovation needs.

Canada

NRC·CNRC

Innovation and Technology Products and Services

The Conference Board of Canada
www.conferenceboard.ca/topics/inn

- The Conference Board of Canada's Technology and Innovation Group is a source of research and expertise on science, technology and innovation policy and practice, including technology change management, horizon scanning, and strategic foresight.
- Insights and resources are delivered through an interactive mix of executive networks, public conferences, workshops, study tours, publications and custom research.

Online Technology Assessment

Business Development Bank of Canada
www.bdc.ca/EN/articles-tools/entrepreneur-toolkit/
business-assessments/Pages/free-ict-audit-evaluation-
recommendations.aspx

- Free online technology assessment offers a personalized report identifying areas needing improvement to optimize your company's performance and get the maximum return on your technology investment.