FROST & SULLIVAN

GROWTH TEAM MEMBERSHIP™

GROWTH PROCESS TOOLKIT

Technology Strategy

Accelerating Growth through Creative and Unbiased Identification, Evaluation, and Commercialization of Emerging Technologies

TABLE OF CONTENTS

INTRODUCTION

Growth Process Toolkit

Technology Strategy

INTRODUCTION

The Swirling World around Us

More than 100 years ago, historian Henry Adams penned the following observation about the technological revolution of the early 20th century: "Every day opens new horizons and the rate we are going gets faster and faster till my…head spins, and I hang on to the straps and shut my eyes."[1]

In Adams' time, this remark referred to the development of the telegraph, the invention of the automobile, and the advent of the telephone. Today, the "new horizons" are different (DNA-based therapies, mobile devices, social media, and countless other advances), but the rate of change is still head-spinning (in fact, exponentially more so than at any other time in history). The pace of change, and technology's unceasing advance, will only continue to accelerate. How, then, to keep our eyes open, and keep pace with "the rate we are going?" How do we make sense of this swirling world around us?

Enter technology strategy. A well-articulated technology strategy can help us make sense of our environment and identify opportunities for our organizations to prosper. The Growth Team Membership defines technology strategy as **approaches that generate revenue through the development and introduction of technologies that support long-term, unique products**. Ideally, products produced through application of a new technology allow "individuals or organizations to do valuable things they could not do heretofore, or they reduce the costs and difficulties of doing something already valued."[2] How we do this is the subject of this toolkit.

Growth through Technology Strategy

It is a fact that technology has the potential to transform, eliminate, or create entirely new industries. As noted above, new technologies are appearing at an unprecedented rate, and they have produced a wealth of opportunity for those able to capitalize on them. To succeed in today's environment, executives must be creative, and the companies they lead must be committed to growth through innovation. The choice is stark: Redefine the future by investing in it, or risk being overtaken by those that do.

Although many studies attest to the significance of innovation and creativity to a company's long-term success (see sidebar),[3] the reality is that many executives continue to undervalue these critical competencies. Indeed, just 13 percent of R&D executives who participated in a recent Growth Team Membership survey included "identifying breakthrough ideas" in their list of top priorities for the coming year.[4]

Did You Know…?

A recent poll of 1500 CEOs identified creativity as the number-one leadership competency of the future.

Challenges of Technology Strategy

Part of this reticence may stem from just how difficult (not to mention risky) technology strategy can be. It requires executives not only to envision the future, and how technology might change it, but then to translate that long-term prediction into short-term bets on product development, partnerships, acquisitions, pricing, and more (as the saying goes: if it were easy, everyone would do it).

In spite of the difficulty, it is essential that companies overcome their fear of betting on the unknown and incorporate an aggressive technology strategy into their long-term growth plans. For many established organizations, it is the only way to avoid stagnating growth. As Vijay Govindarajan and Chris Trimble write in *The 10 Rules for Strategic Innovators:*

As a business ripens, growth inevitably becomes more difficult. The growth potential of any business model eventually decays. Of course, Wall Street investors and analysts still demand double-digit growth rates from almost every company. Without growth, stocks perform dismally and CEOs lose their jobs. Without growth, employees stagnate and careers stall. Organizations themselves grow stale, and their competitiveness suffers… Therefore, strategic innovation becomes the most attractive option.[5]

To make the situation even more complicated, it often happens that creative, visionary executives leave mature firms in search of a more innovative, start-up environment. Companies therefore find that when they most need to reignite growth, those most capable of supporting the effort are nowhere to be found. Clayton Christensen summarizes this problem in *The DNA of Disruptive Innovators:*

Did You Know…?

Companies that encourage a culture of creativity ultimately – and significantly – outperform their peers in growth and profitability.

Eventually…the initial innovations that created the business in the first place complete their life cycle. Growth stalls as the business hits the downward inflection point in the well-known S-curve…Meanwhile, investors demand new growth businesses, but senior executive teams can't seem to find them because…discovery skills [are] largely absent from the top management team. It therefore becomes increasingly difficult to find new business opportunities to fuel new company growth.[6]

In sum, emerging technologies are inextricably linked with a company's long-term growth—but the winners are usually best spotted after the fact, and by people whom your company may, or may not, employ. This is the dual challenge confronting executives today: First, they must embrace a culture of uncertainty and creativity; and second, they must choose from myriad options those with the greatest commercial potential, and determine "whether, how much, and when to invest."[7]

(Continued on the following page)

INTRODUCTION (CONTINUED)

Where Companies Go Wrong
Determining whether, when, and how much to invest is, as stated above, no simple or easy task, and numerous pitfalls can derail even the most well-intentioned executive. Some of the most common pitfalls are discussed below.

Pitfall #1: Resistance to (Inevitable) Change
In his now-classic *The Structure of Scientific Revolutions*, Thomas Kuhn introduced the concept of a paradigm shift. A paradigm shift occurs when practitioners of a shared discipline find that the framework in which they operate has been undermined by a series of unexpected incidents that cannot be explained by the prevailing paradigm. These incidents, or anomalies, continue to accumulate until the field finds itself in a state of crisis. During this period, members of a community "experience profound professional insecurity…generated by the persistent failure of [the old framework] to [work] as it should."[8]

This professional insecurity can make executives prone to *ignoring* anomalies, rather than recognizing them for what they are (harbingers of what's to come) and embracing them accordingly. By resisting disruptive concepts, executives leave their companies open to attack from outsiders more willing and able to pursue revolutionary innovation.

One reason for this heads-in-the-sand response to new technologies is a simple fear that recognition of the oncoming shift will force an admission of some difficult truths—perhaps that:

- The new technology could cannibalize the company's core business (i.e., its reason for being)
- Pursuit of the new technology might require skills that the company lacks
- The company is too entrenched in its processes and systems to adapt to a new paradigm

For these reasons, it is often easier (or, at least, more comforting) to pay no attention to the oncoming shift. Kodak's response to digital cameras and its recent bankruptcy filing speak to the danger of operating under an antiquated paradigm.[9, 10, 11]

From Pioneer to Cautionary Tale: Kodak's Rise and Fall

The Old Paradigm: In 1877, Kodak revolutionized photography with its introduction of film-based cameras—supplanting one paradigm and replacing it with another. For 100 years, the company reigned at the top of the film business and enjoyed a position of preeminence among American companies.

The Anomalies Begin: In 1975, engineer Steve Sasson shared a new invention with Kodak's leadership team. Sasson had created a toaster-sized contraption capable of saving images onto electronic circuits, transferring them to a tape cassette, and then reproducing those images on a TV screen. In short, Sasson had invented (and presented to Kodak on a silver platter) the world's first digital camera. While the camera was an undeniable accomplishment, it failed to resonate with Kodak's leadership team: After all, a camera that did not require film represented a severe threat to the prevailing paradigm.

Sasson later recalled leadership's reaction to the new device: "That's cute, but don't tell anyone about it." He continued, "For Kodak's leaders, going digital meant killing film, smashing the company's golden egg to make way for new." Another former VP concurs: "We developed the world's first consumer digital camera but we could not get approval to launch or sell it because of the effects on the film market."

The State of Crisis: While Kodak's leaders could have predicted the rise of digital cameras as early as 1975, it wasn't until the 1990s that the company was jolted out of complacency, investing billions in developing technology for taking pictures on mobile phones and other digital devices. However, it still held back from developing digital cameras for the mass market for fear of sabotaging its film business. Others, such as the Japanese firm Canon, took advantage of this reluctance. Polaroid and Fuji also began to seriously challenge Kodak's market dominance, and its position began slowly to shift from market leader to follower. Its old framework – a business based on film – was fundamentally failing to work as it should, as the following timeline attests:

- 1993: Kodak eliminates 10,000 jobs.
- 1994: Kodak sells all of its assets not related to photography and electronic imaging.
- 1995: Kodak (finally) produces a consumer-targeted digital camera (retailing for $749 USD).
- 2004: Kodak eliminates another 15,000 jobs (20 percent of its work force).
- 2007: Kodak liquidates more assets (its X-ray and medical imaging business units).
- 2010: Kodak stops manufacturing its signature Kodachrome film. (Since 2004, the company had reported only one full year of profits.)

The New Paradigm: Digital cameras have redefined photography (and mobile phones may soon supplant cameras altogether). Kodak's core business was not prepared to capitalize on this shift, and in spite of the warning signs, failed to make fundamental changes to its operating model. In time, Kodak was overtaken by more agile competitors, and was never able to regain its pre-digital profitability. On 19 January 2012, Kodak at last ran out of cash and options, and filed for bankruptcy protection.

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INTRODUCTION (CONTINUED)

Where Companies Go Wrong (Continued)

Pitfall #2: Reluctance to Seize the Initiative
Even companies that acknowledge a paradigm shift may still fail to profit from it—primarily because recognition does not necessarily translate into an appropriate reaction. Companies may still suffer losses if they:

- *Delay their response*—A wait-and-see approach to an emerging technology may seem reasonable, but it opens the door for a competitor to seize first-mover advantage and render your eventual participation meaningless.[12]

  Consider the case of **Google+**, which continues to play catch-up (unsuccessfully) with the social network behemoth, Facebook. While Google+ is struggling to demonstrate its value to advertisers and users alike (as one analyst put it, "Nobody wants another social network right now"), Facebook's value proposition and market position seem secure (in spite of its controversial IPO). A delayed response has cost Google the initiative in the social networking category.[13]

- *Make only a halfhearted commitment*—It may seem reasonable to hedge your bets and not commit too many resources to a single idea. However, such hesitation creates its own set of risks (and may even render that slight investment worthless). That said, many organizations favor this approach: One study of 27 established firms found that only four entered aggressively, while three didn't participate at all, in a threatening technology. The majority made a modest initial commitment that, once again, allowed more agile and aggressive competitors to secure a strong market position.[14]

- *Give up too easily*—Investment in a new technology requires patience and a willingness to suffer some early losses (i.e., a belief that the technology will ultimately be successful and is worth the wait). One study found that 8 of 21 established firms that entered markets in which emerging technologies were succeeding subsequently withdrew, and most did not resume their efforts until the viability of the new product was demonstrated by outsiders. As noted previously, waiting-and-seeing is often tantamount to ceding leadership to another company.[15]

Pitfall #3: Overestimation of Customers' Willingness to Change
While some companies make the mistake of not believing *enough* in a new technology, others make the mistake of believing so much in a technology's potential that they then undervalue critical commercialization factors.

Ultimately, a new technology will gain ground only if customers are willing to modify their behavior to adopt it. As many studies have shown, this in itself is no easy feat: A new product must deliver two to four times more benefits than an existing alternative before customers will make a switch (Intel's Andy Grove has contended that to transform an industry rapidly, an innovation must offer benefits that are *10 times better* than what existing alternatives can provide).[16] Companies must therefore not only anticipate which technologies could potentially revolutionize a product category, but also (1) correctly predict which of those customers will be most likely to embrace, and then (2) build a commercialization strategy that will inspire the desired change in customer behavior.

Consider **General Motors'** difficulty launching the **Chevrolet Volt**. Although this car represents a significant technological breakthrough (and certainly in time could revolutionize the category), it ultimately fails to deliver benefits greater than those offered by traditional automobiles (at least in the eyes of customers). The Volt's starting price is approximately $40,000 (USD). However, the car is often compared with its non-electric cousin, the Cruze, which is similar in design but costs half as much. Many would-be customers test-drive the Volt, but buy the Cruze. As one analyst observed, "Often, the decision seems to be coming down to economics—the fuel savings won't quickly pay back the extra cost."[17] He continues:

GM may have missed the chance to make the Volt a car people would want to pay more for—not just because it saves fuel—but because it is fun to drive. In the early days of Volt development, Chevrolet's Bob Lutz told the New York Times that the car would accelerate to 60 miles per hour in a speedy six seconds, taking advantage of the torque electronic motors can provide. GM opted instead to engineer the car to hit 60 after an unremarkable 9 seconds—similar to the Cruze.

In sum, General Motors placed a bet that long-term fuel economy would be enough of an incentive for customers to pay a premium for a new technology. However, customers ultimately valued other benefits (such as performance and near-term cost-effectiveness) more than the one predicted by GM. As a result of this miscalculation, Volt sales have not yet reached the level initially anticipated by GM, and in fact, the company placed a production hold on the Volt from 19 March to 23 April, 2012 so that inventory could better align with demand.[18]

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INTRODUCTION (CONTINUED)

Where Companies Go Wrong (Continued)

Pitfall #4: Lack of a framework for evaluating new technologies
Many studies (performed by Frost & Sullivan and others) have demonstrated that CEOs are dissatisfied with their companies' ability to implement strategy. A reasonable explanation for this deficit is that many organizations lack a coherent framework for ensuring that strategy can be executed.[19]

To make matters even more difficult, technology strategy is such a moving target that it renders many traditional execution tools ineffective or obsolete.[20] Executives must not only build a framework for executing a strategy, but ensure that framework is elastic enough to accommodate the fast-moving pace of technology evolution. Swift, able technology evaluation allows companies to see opportunities early—and potentially be the first in an entirely new category.

For example, **Citibank's** disciplined approach to technology strategy enabled it to differentiate its consumer credit card. Through systematic evaluation of numerous new technologies, including smart card recognition and identification systems and intelligent links to automotive and shopping services, it eventually developed the ability to personalize credit cards with a photograph of the card holder. This technology enabled Citibank to achieve differentiation with a superior fraud-prevention claim. Ultimately, the card's multiple uses as a credible form of identification helped establish an entirely new category of needs the card could fulfill. It was Citibank's patient, structured approach to technology evaluation that ultimately led to this new product—without which the new technology's significance might have gone undetected.[21]

The Solution
As the above pitfalls demonstrate, achieving success through technology strategy can be difficult, risky, and complex. Technology strategy nonetheless offers numerous opportunities for reigniting stalled growth, changing customer behavior, and (re)inventing product categories. Companies that achieve this kind of success are good at many things—among them:

- *Understanding how technologies address needs customers don't even know they have*—Successful companies continually seek to develop an entirely new vision of the user experience, and base technology decisions around critical customer needs. This focus can bring about revolutionary technology innovations, as the following case example demonstrates:[22]

Case-in-Point: Phillips Electronics' Re-Imagining of the Imaging Industry

Situation: Since the introduction of the computed tomography (CT) scan in the early 1970s and magnetic resonance imaging (MRI) in the early 1980s, manufacturers had primarily focused on two objectives: improve the quality of images produced and reduce the time and cost of examinations. Innovation in the imaging industry therefore tended to be incremental, with each new model boasting quality or efficiency slightly better than its predecessor. In such an environment, differentiation for all players became nearly impossible (and cost-driven). Phillips Electronics began to search for new ways to stand out in this commoditized market.

Action: Phillips extensively researched the user experience and discovered an opportunity for technology to address a critical and unaddressed need: anxiety management. Anxiety makes it hard for patients to lie still inside scanning devices, but movement affects the quality of images produced. The standard solution was to sedate anxious patients, which increased the procedure's risks and overall duration. Researchers concluded that if they could use technology to build a machine that reduced anxiety, they would ultimately produce a machine that *also* produced higher-quality images and in less time. The need (anxiety) was not new—but the potential for technology to address it (and thereby give customers an entirely new reason to buy) certainly was.

The resulting product—Ambient Experience—offers patients a more relaxing atmosphere by using several technologies, including LED displays, video animation, radio-frequency identification (RFID) sensors, and sound-control systems. For example, a child patient might select an "aquatic" theme from a menu of options; she then receives a puppet with an RFID sensor that launches theme-related animation, audio, and lighting when she enters the exam room. Importantly, ambient technology eliminated the need for (costly and risky) patient sedation. Phillips had redefined the imaging category by demonstrating that equipment manufacturers could do something to alleviate patients' anxiety and deliver a benefit (one hospitals would pay for) to end users.

Result: As one analyst has written, "Hospitals and patients hadn't asked for [Ambient Experience]—but once they experienced it, they loved it." Ambient Experience reduced the time required to conduct CT scans by 15% to 20%; reduced the number of children under the age of three who needed to be sedated before a CT scan by 30% to 40%; and slashed the amount of radiation they received by 25% to 50%. It also strengthened Phillips $4.63 billion imaging business worldwide, allowed it to realize higher prices, and improved its profitability.

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INTRODUCTION (CONTINUED)

The Solution (Continued)

- *Forming strategic partnerships for exclusive co-development of a new technology*—Technology-savvy companies understand that it is sometimes necessary to partner with an outside source for technology development. Such collaboration opens doors to new markets that might otherwise be blocked to a single player on its own.

  For example, **iRobot Corporation** (producers of the Roomba robo-vacuum, among many other products), announced plans in February 2012 to invest $6 million in **Touch Health**, a telemedicine company operating in 80 hospitals worldwide. This partnership will enable iRobot to enter a new market, while providing Touch Health with technology opportunities (such as tablet-compatible telepresence robots for hospital wards) that it could not develop or pursue on its own.[23]

- *Licensing a technology to multiple users*—Smart executives appreciate that there are likely more applications for a technology than they could think of on their own. Licensing allows companies to profit from multiple players' creativity simultaneously.

  For example, in 1989, two MIT professors invented a device that could "print" a three-dimensional object directly from a computer design. The professors patented the process and began offering licenses on it. Ultimately, the technology the professors developed has been used to:

  - Make ceramic shells for casting metal automotive parts
  - Create concept models of products and architectural designs
  - Print tiny scaffolds that, when planted in the body, encourage bone growth
  - Produce time-release pills
  - Create small decorative objects such as Christmas tree ornaments
  - Produce ceramic filters for coal-burning plants
  - "Print" wing parts for new airplanes

  The team had little concept for all the potential uses of their product when they first filed the patent. As one of them said, "The first application I had in mind was metal casting, and I had a couple of other ideas about applications, but nothing compared with what turned out to be realizable."[24]

- *Creating a differentiated value proposition based on a new technology*—Successful companies focus on technology innovations that allow customers to reimagine how they complete specific tasks. In so doing, they not only achieve differentiation, but they force their competitors to change course as well.

  One recent and notable example is the startup company **Dropbox**, which was hailed by *Technology Review* as 2011's most innovative company. Dropbox allows users to employ almost any computing device to store files in folders in the cloud (seamlessly integrating numerous operating systems, Internet browsers, and file systems). This capability has allowed Dropbox to differentiate with a compelling and straightforward value proposition: In the words of CEO and co-founder Drew Houston, "We want you to have your stuff with you wherever you are, and that requires that we remove anything that gets in the way."

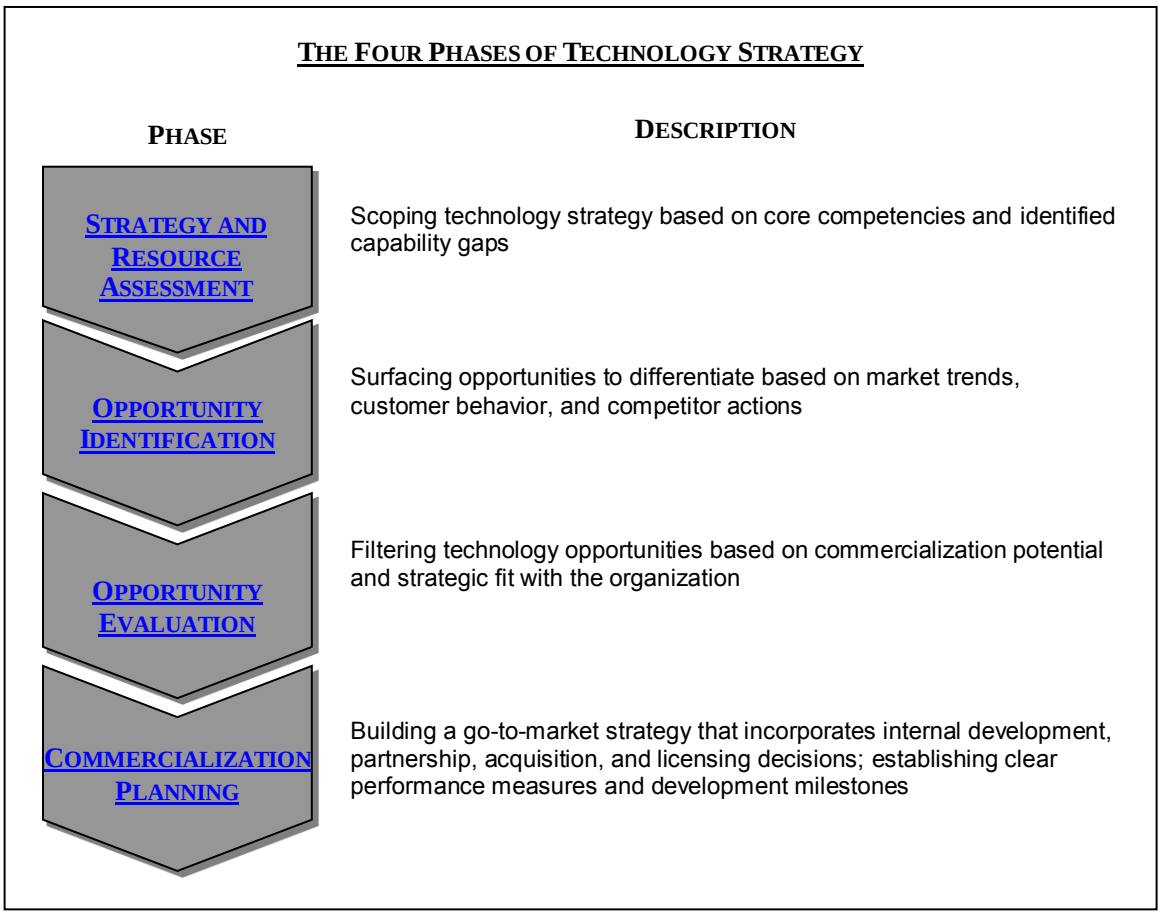
  Since its launch, Dropbox has won more than 50 million users worldwide, and its technology innovation has left its competitors scrambling to stay relevant in a category that is being rapidly redefined.[25]

In Conclusion

Broadly speaking, the companies mentioned above and on the previous pages (and many others like them) share one fundamental trait: They seek out, rather than run from, paradigm-shifting anomalies. They understand and welcome ambiguity, and they have "worked out how to experiment rapidly, frequently, economically—not only with products and services but also with business models, processes, and strategies."[26]

INTRODUCTION (CONTINUED)

How Should You Build a Technology Strategy?
Frost & Sullivan structures the technology evaluation, development, and commercialization process around the phases listed below.



On a final note, many factors influence a company's approach to technology that are not covered comprehensively in this toolkit. For this reason, we provide a wealth of resources focused on these activities in companion Growth Process Toolkits, which you can access by clicking on the links below.

- *Mergers & Acquisitions: Accelerating M&A Growth through Early-Stage Planning and Evaluation*
- *Geographic Expansion: Accelerating Growth through Principled and Repeatable Entry Strategy*
- *New Product Development: Accelerating Growth through Unbiased and Rigorous Early-Stage Product Evaluation*
- *New Product Launch: Accelerating Growth through Rigorous Planning, Principled Execution, and Continuous Monitoring*
- *Competitive Strategy: Accelerating Growth through Principled and Informed Competitive Decision Making*
- *Distribution Channel Optimization: Accelerating Growth through Rigorous and Unbiased Partner Evaluation, Selection, and Monitoring*
- *Vertical Market Expansion: Accelerating Growth through Principled Market Opportunity Evaluation and Entry Strategy Development*
- *Strategic Partnerships: Accelerating Growth through Principled Partner Selection and Proactive Relationship Management*
- *Customer Strategy: Accelerating Growth through Ongoing Customer Listening, Immediate Response, and Meaningful Dialogue*

HOW TO USE THIS TOOLKIT

Growth Process Toolkit

Technology Strategy

HOW TO USE THIS TOOLKIT

The Growth Process Toolkit for Technology Strategy

What it is: This toolkit features proven, practical tools and tactics for addressing challenges most commonly associated with technology strategy. It will help you scope your technology needs; identify, evaluate, and select from myriad promising opportunities; and commercialize chosen technologies.

On a more technical level, this Growth Process Toolkit presents Frost & Sullivan's best work on technology strategy in a step-by-step implementation format. This resource gives Growth Team Membership (GTM) members proven processes, tools, and templates to help them successfully manage the risks and pitfalls encountered in this key growth process.

How it will help you: This toolkit will help you and your team develop a successful and repeatable model for building and executing a technology strategy. As noted previously, we recognize that your technology strategy may be strongly influenced by factors such as strategic partnerships or mergers and acquisitions. These and other topics are explored in companion growth process toolkits and are listed on the previous page. This toolkit focuses specifically on achieving growth through technology identification, evaluation, and commercialization.

How to use it: This book is divided into four sections: Strategy and Resource Assessment, Opportunity Identification, Opportunity Evaluation, and Commercialization Planning. Within each section, we have outlined a variety of steps that you should complete. For each of those steps, you are provided with the tools (such as templates, scorecards, or checklists) that you need to complete that activity to a Frost & Sullivan standard. You can read this toolkit cover-to-cover, or you can reference the clickable table of contents to access specific sections.

Be on the look-out for helpful reminders throughout this toolkit. We will alert you at key stages when you should involve certain stakeholders, or when it might be a good idea to use additional GTM (or other) resources to aid your implementation.

We encourage you to bookmark this toolkit, save particularly helpful tools to your desktop, and share it with your colleagues. We also encourage you to contact your Account Executive if at any point you require assistance.

The Growth Process Toolkit's Organization and Layout

For ease of navigation, the majority of activities and tools featured in this toolkit adhere to the following template:

SAMPLE PAGE LAYOUT

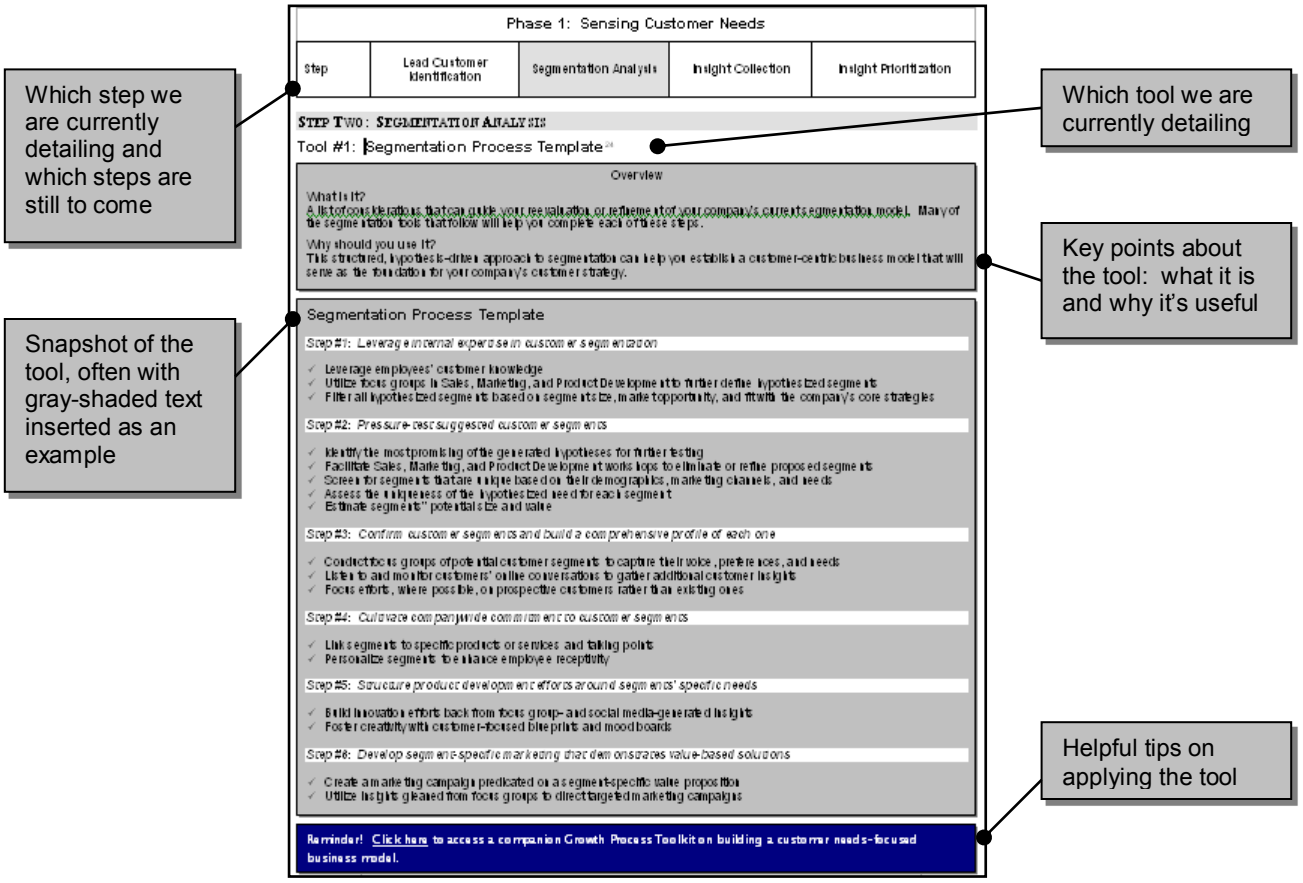


TABLE OF CONTENTS

PHASE I: STRATEGY AND RESOURCE ASSESSMENT

Growth Process Toolkit

Technology Strategy

PHASE 1: STRATEGY AND RESOURCE ASSESSMENT

The table below lists the key steps and objectives featured in Phase 1. The pages that follow explore each step and its associated tools in greater depth. This page is also clickable, enabling you to jump to any section directly.

STRATEGY AND RESOURCE ASSESSMENT: KEY STEPS AND TOOLS

STEP	PURPOSE	SAMPLE TOOLS
Executive Alignment Assessment	Establish shared objectives for technology strategy; limit the scope of any new technology search or evaluation	Goal Statement Template Stakeholder Interview Template
Capability Assessment	Pinpoint key points of competitive advantage and identify key capability gaps	Strategic Capabilities Audit Innovation Culture Scorecard

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP ONE: EXECUTIVE ALIGNMENT ASSESSMENT

Tool #1: Goal Statement Template

Overview

What is it?
A discussion guide to help the executive team articulate its reasons and goals for investing in a technology strategy.

Why should you use it?
This tool will help you ensure the following:

- *Agreement among the executive team* – While you may believe your executive team to be on the same page about strategy and vision, this perception may in reality be off-base. Consensus on goals and expectations at the outset of any activity is a good idea – but even more so when navigating waters as risky or complex as technology strategy.
- *Focus on activities that align with the stated purpose* – Shared commitment to the Goal Statement will help the executive team be clear about goals and the boundaries for achieving those objectives. Agreement on how to handle all strategic factors will ensure the team approaches technology-driven decision-making with a shared clarity of purpose.

Use this as a living document – something that you can revisit whenever you need to refocus team members on shared objectives.

Goal Statement Template

Vision: What are we trying to do (e.g., focus on reducing price, boosting performance)?

(a) What is the goal we are trying to achieve?
- i. What is its scope?
- ii. What is the advantage it will give our firm?
- iii. What is the end state that the strategy should achieve?

(b) How likely is it that this goal will help us:
- i. Meet our growth targets
- ii. Achieve a certain market share
- iii. Become the market leader

(c) Which groups in the organization are responsible for delivering on our objective?

(d) What are the decisions we as an executive team must make in support of this objective?

(e) Given these specific decisions, what must this effort produce as output?

Justification: Why do we want to do it?

(a) Is this the right time to change our strategy?
- (i) What external factors have compelled us to reinvest in our technology strategy? (Has a competitor launched a game-changing technology? Has customer behavior radically shifted in favor of a new technology? Has growth stalled?)
- (ii) What internal factors have compelled us to reinvest in our technology strategy? (Are critical technologies becoming obsolete? Conversely, do we see a potential to profit further from one of our technologies, either through partnerships or licensing? Are there influential, senior champions who are shifting the strategic direction of the company?)

(b) If we were to start our business from scratch today, what would we be doing that we are not doing today?

(c) What are the fundamental assumptions upon which our business is based?

Page 1 of 2

(Continued on the following page)

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP ONE: EXECUTIVE ALIGNMENT ASSESSMENT (CONTINUED)

Tool #1: Goal Statement Template (Continued)

Goal Statement Template

Approach: How do we want to do it?

(a) What is our timeline for achieving the desired end state?

(b) What types of technologies should we to focus on?

(c) What types of technologies are too far afield for us to realistically pursue?

Readiness: Are we prepared to rebuild, refine, or reinvest in our technology strategy?

(a) Which vital skills sets are we currently lacking among our staff (e.g., innovation or discovery skills)?

(b) Can our existing processes and cost structures support our new technology objectives?

(c) What will we ask any or all of the following functions to contribute to this effort: Marketing, Market Research, Sales, Research & Development, Customer Service, Manufacturing, and Finance?

(d) What external barriers (e.g., government or legal restrictions, economic uncertainty, competitor response) might prevent us from achieving our objectives?

(e) What internal barriers (e.g., unsupportive culture, limited budget, inadequate information-sharing) might prevent us from achieving our objectives? Which of these barriers can we control and resolve?

Investment: What financial return do we expect from our technology strategy?

(a) What are our minimum and maximum investment thresholds for any activities required as part of our technology strategy (such as investments in technology and patent research, partnership searches, and licensing deals)?

(b) Where would we place our investment on the risk/reward spectrum?

(c) How long do we expect it will take to achieve a positive return, in terms of boosted revenues, increased market share, and/or better margins?

Measurement: How will we determine success?

(a) Short-Term: How will we demonstrate success to shareholders (i.e. what should be our key targets)? What metrics can we realistically influence during this time?

(b) Long-Term: What signs of success would we expect in the long term? How should we quantify these expectations?

(c) Which metrics will matter the most for our technology-focused efforts?

(d) *If relevant to your business*: How will we measure specific functions' contributions to our technology strategy objectives?

Buy-In: Who has contributed to and/or approved this statement? Who still needs to sign off?

(a) What plans exist for ensuring executive team consensus, acceptance, and commitment?

(b) How will we modify our goal statement if we receive push-back from key stakeholders? On which points are we willing to budge, and on which must we hold firm?

(c) How should we communicate our goal statement for the greatest degree of buy-in (e.g., who should deliver the message, what is the scope of the audience, which communications channels should we use)?

Page 2 of 2

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP ONE: EXECUTIVE ALIGNMENT ASSESSMENT (CONTINUED)

Tool #2: Stakeholder Interview Guide[27]

Overview

What is it?
A list of key questions you should ask key stakeholders within and outside of your organization.

Why should you use it?
You need to assess your company's readiness for change (and for the creativity, ambiguity, and risk that characterize technology-driven decisions). These questions, and the varying responses to them you receive, will help you proactively identify and address any organizational weaknesses.

Stakeholder Interview Guide

Name:

Title/Role:

1) How much time do you spend each week investigating new technology opportunities?
2) How stable is the technology base that underpins our industry or market?
3) How comfortable do you think our leadership team is with change? How adept do you think we are at accommodating change?
4) How strong is the status quo in our business?
5) Do you feel that you would be rewarded for taking a risk, even if it failed to pay off (i.e., do you think mistakes are valued for the learning opportunities they provide)?
6) How do you think managers have been treated in our firm when they opt for the unfamiliar?
7) How would you characterize our company's typical approach to strategy on a risk-reward spectrum?
8) How do think we tend to make decisions and commitments in the face of extreme uncertainty?
9) In your opinion, does our corporate culture give new ideas a fighting chance, or does it doom them to premature abandonment?
10) Do you feel that the "right" people in the organization influence technology decisions?
11) Who do you think are the senior champions of creativity and risk-taking? How would you characterize their influence and track record?
12) What do you think are our company's core strengths?
13) Are there ways we could work with other firms to capitalize on our core strengths?
14) How can we better develop breakthrough product concepts that could drive the creation or make use of emerging technologies?
15) How could we better cope with ambiguity in market potential, customer needs, and competitive capabilities?

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP TWO: CAPABILITY ASSESSMENT

Tool #1: Strategic Capabilities Audit[28]

Overview

What is it?
A template for codifying your firm's strategic capabilities from an organizational and procedural point of view.

Why should you use it?
One of the key questions that will arise from technology identification and evaluation (Phases 2 and 3) is whether the firm possesses the capabilities needed for development and commercialization. A baseline of the firm's capabilities and constraints will help you take a realistic approach to these latter phases of technology strategy.

Strategic Capabilities Audit (Sample)

Step One: List All Strategic Capabilities

Ask key internal stakeholders to list those people, processes, technologies, and financial or physical assets that provide the organization with its greatest competitive advantage. You can prompt stakeholders by asking them to consider:

- What are the key processes at which the organization must excel to deliver the [current?] customer value proposition?
- For these processes, what critical roles are required for successful execution?
- For these processes and roles, what information and/or technology is critical to success?
- What does the organization need to focus on from a culture or leadership perspective to further enable the strategy?

Strategic Capability	Uniqueness	Potential for Competitor Copying
People Built-in time each week for employees to work on their own projects	The idea is not unique, but we believe it to be fairly uncommon in our industry.	Low: Cost and culture would likely keep other firms from investing in this capability.
Process Executive sessions focused on evaluating new businesses	We believe our evaluation sessions set a best-practice standard.	Low: Our processes support our innovation culture and keep executives informed of changes to the status quo.
Technology Ownership of a suite of patents related to a key emerging technology	Our patent suite is one of our most unique capabilities.	Low: Patent ownership ensures we are ahead of the competition.
Physical Asset Manufacturing facility in business-friendly state	Many of our competitors share this capability.	High: It helps our bottom line but does not support differentiation.
Financial Asset Agreements to license an emerging technology to several partners	We are the only company in our market to maintain licensing agreements around this specific emerging technology.	Low: Our suite of patents should protect us from competitor copying in the near term.

Step Two: Identify and Analyze Capability Gaps

After you have built a list of your organization's key capabilities, you need to identify any gaps that warrant additional investment. You can begin this analysis by asking the leadership team the following questions:

- How important is this capability to achieving the organization's financial goals?
- What is the organization's current performance within a given category (people, process, technology, physical asset, financial asset)?
- What actions should we undertake to improve performance in a key capability area?

Note: Look for capabilities deemed important that also appear to be under-performing. These gaps are often the most deserving of further investment. Leadership's responses to the above questions may also highlight disparity in opinion that you can then address. Responses to the third question may also help you brainstorm ways to close gaps in a strategic capability.

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP TWO: CAPABILITY ASSESSMENT (CONTINUED)

Tool #2: Portfolio and Pipeline Assessment Checklist[29]

Overview

What is it?
A series of questions that can help you determine where to rationalize your existing or new product portfolio.

Why should you use it?
This activity will help you baseline your company's current technological capabilities. It will help you avoid investing in projects that are unlikely to deliver significant customer value and can help you redirect those resources to higher-ROI projects.

Portfolio and Pipeline Assessment Checklist

Evaluate existing and in-development products based on responses to the questions listed below.

- ☐ Is there a demonstrated and credible need or desire for the product?
- ☐ Can the customer buy it (e.g., is/would it be priced competitively, is/would it be distributed widely)?
- ☐ Does our customer research indicate a demand for the product (or is something similar to it currently succeeding in the marketplace)?
- ☐ Is the size of the potential market adequate to deliver expected shareholder returns?
- ☐ Does, or will, the product have a competitive advantage with our target customers?
- ☐ Can the advantage realistically be sustained, and over what period of time?
- ☐ How will, or have, competitors responded?
- ☐ Do we have superior resources that will enable us to remain competitive?
- ☐ Do we have appropriate management to drive the success of this product?
- ☐ Can we understand and respond to the market with agility?
- ☐ Can the product be profitable without forcing us to take an unacceptably high risk?
- ☐ Which of the following categories best describes the product?
  - o Best price for standard offering; acceptable quality
  - o Superior functionality; innovative features; high quality; market or category leadership likely
  - o Personalized treatment; tailored offerings; integrated solutions; service excellence
  - o Something else: _____

Additional questions for in-development products:

- ☐ Do we have a clear understanding for this concept's role within our larger portfolio?
- ☐ Can the product be cost effectively produced as envisioned (consider both economic and technical feasibility factors)?
- ☐ Will the final product/service satisfy the market? Will it be hard for fast followers to copy?
- ☐ Does launching this product/service make strategic sense? Does the product/service fit with our overall growth strategy?

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP TWO: CAPABILITY ASSESSMENT (CONTINUED)

Tool #3: Innovation Culture Survey[30,31]

Overview

What is it?
A template that you can use to assess your company's and employees' risk-taking and creativity.

Why should you use it?
Organizations with successful technology strategies tend to be creativity-driven; they also tend to welcome risks (even misguided ones) for the learning opportunities they provide. You need to compare your organization's innovation culture to this standard so that you can identify areas for improvement or enhancement.

Innovation Culture Survey

Part 1: Company Culture
Ask survey participants for their thoughts on the company's propensity for change and willingness to embrace new innovations.

1) Which of the following statements best summarizes our firm:
   a. We make bold forecasts, but timid choices (i.e., we favor risk-averse strategies)
   b. We place aggressive, substantial bets on new technologies
   c. We are incapable of operating successfully in a state of flux or rapid change
   d. We operate best in an ambiguous, constantly shifting environment
   e. We hedge our bets by making small commitments to multiple technology options
   f. We worry that commitment to a new technology might cannibalize our existing business, and this worry affects our commitment to innovation
2) Do we invite perspectives from experts in unfamiliar technologies, markets, and strategies?
3) Do we tend to limit our analysis to our current markets?
4) How do managers typically draw upon new sources of ideas?
5) Do you know of any new ideas that could challenge the prevailing paradigm in our industry?
   a. If Yes:
      i. Do you think that leadership would be receptive to information about changes to the status quo?
      ii. Do you suspect that influential leaders might seek to block investment in new technologies that do not support incremental innovation within our current offering?

Page 1 of 2

(Continued on the following page)

Phase 1: Strategy and Resource Assessment

Step	Executive Alignment Assessment	Capability Assessment

STEP TWO: CAPABILITY ASSESSMENT (CONTINUED)

Tool #3: Innovation Culture Survey (Continued)

Innovation Culture Survey

Part 2: Individual Perspective*
Ask survey participants to assess their own skills, habits, and personalities.
(1=strongly disagree; 2=somewhat disagree; 3=neither agree nor disagree; 4=somewhat agree; 5=strongly agree)

1) My ideas or perspectives are often different from those of my peers.
2) I am meticulous in my work and seldom make mistakes.
3) I regularly ask questions that challenge the status quo.
4) I am extremely well organized at work.
5) I seek out opportunities to watch people interact with our products and services, because it helps me generate new ideas.
6) I must have everything finished to my satisfaction before I will move on to a new assignment.
7) I often find solutions to problems by drawing on solutions or ideas developed in other industries, fields, or disciplines.
8) I never jump into new projects, or make decisions, without carefully thinking through all of the issues.
9) I like to find new ways of doing things.
10) I always follow through to complete a task, no matter what.
11) My personal and/or professional network includes a diverse set of people, which I use to help find and refine new ideas.
12) I excel at breaking down a goal into the micro-tasks required to achieve it.
13) I attend conferences (in my area of expertise as well as unrelated areas) to meet new people and understand what issues are facing them.
14) I pay careful attention to detail at work to ensure nothing is overlooked.
15) I actively seek to identify emerging trends by reading books, articles, magazines, blogs, etc.
16) I hold myself and others accountable for results.
17) I like to ask "what if" questions that encourage others to question the status quo.
18) I often observe customers, suppliers, and others to get new ideas.

To score your survey:

1) Add your score on the odd-numbered items. You score very high on discovery skills if your total score is 45 or above, high on discovery if your score is 40-45, moderate to high on discovery if your score is between 35 and 40, moderate to low if you score 29-34; you score low on discovery if your score is 28 or less.
2) Add your score on the even-numbered items. You score very high on delivery skills if your total score is 45 or above, high on delivery if you score 40-45, moderate to high on delivery if you score between 35 and 40, moderate to low if you score 29-34; you score low on delivery if your score is 28 or less.

*** Part 2 of this survey is credited to Clayton Christensen and has been reproduced in part for you here. You can find a complete version of it in his book *The Innovator's DNA* or at http://www.InnovatorsDNA.com.**

Page 2 of 2

Reminder! Your organization does not need to become an aggressive, risk-taking organization to succeed with technology strategy. However, it is important to put limits on your company's technology scoping. This survey—and the perspective on your company's culture that it will provide—can help you avoid pursuing technology opportunities that are at odds with your company's approach to growth (i.e., you can filter opportunities based on their level of risk and the level of risk your organization is willing to take on).

PHASE 2: OPPORTUNITY IDENTIFICATION

Growth Process Toolkit

Technology Strategy

PHASE TWO: OPPORTUNITY IDENTIFICATION

Where Are We Now?
At this point, you have employed the Goal Statement and Stakeholder Interview Guide to foster executive alignment in support of technology strategy. You have also analyzed your company's core capabilities, interviewed key stakeholders, and evaluated your company's (and individual employees') propensity for innovation.

What Do I Do Next?
Now that you have a baseline of your organization's strategy, resources, and culture, you can begin searching for new technology opportunities. Outlined below are the activities and steps you need to complete in Phase 2. The pages that follow will feature the information and resources you need to complete each of these steps.

OPPORTUNITY IDENTIFICATION: KEY STEPS AND TOOLS

STEP	PURPOSE	SAMPLE TOOLS
Market Analysis	Scan the market for emerging technologies or opportunities to capitalize on a technology that your company is currently developing	Drivers & Restraints Worksheet Scenario Planning Template
Customer Analysis	Surface any changes in customer behavior that could eliminate the need for a current technology or raise the need for a new one	Customer Segment Profiling Template Voice of the Customer Prioritization Guidelines
Competitor Analysis	Track recent competitor activities and determine which are related to pursuit of a new technology	Competitive Landscape Chart Emerging Technology Price/Quality Matrix

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS

Tool #1: Drivers & Restraints Worksheet

Overview

What is it?
A list of questions to help you consider all factors affecting growth in a market (both positively and negatively). Your answers will help inform an assessment of which markets present the most compelling growth opportunities, which in turn will help focus your search for breakthrough technologies.

Why should you use it?
You need to be aware of any factors that might alter a market's stability (for better or worse) in the long term. Ultimately, this perspective will help you make short-term decisions about whether to remain or become competitive in that market.

Step One: Fill out the worksheet below for the [_____ Industry].

Analysis of Sector-Specific Drivers and Restraints

1. Drivers

Question	Hint	Potential Sources
What are the specific drivers affecting the market and causing it to grow?	Regulatory changes; population growth; labor costs; availability of commodities	Frost & Sullivan research; industry-specific periodicals; trade associations
What do you predict will drive sales in two years?	New markets opening; new technologies	
What changes are you witnessing in customers' demands?	Changes to purchasing cycle; price sensitivity	
How has distribution changed over the past two or three years?	Emergence of new distribution networks	

2. Restraints

Question	Hint	Potential Sources
What is holding back sales or preventing the sector from growing?	Economic uncertainty; saturated market	Frost & Sullivan research; industry-specific periodicals; trade associations
What circumstances have prevented customers from purchasing key products or services?	Price sensitivity; changing consumer behavior; availability of capital	
What industry-wide factors are limiting growth potential?	Poor distribution network; high manufacturing costs	
Are there any company-specific inhibitors that cannot be explained by sector-wide circumstances?	Organizational barriers; talent turnover	

(Continued on the following page)

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #1: Drivers & Restraints Worksheet (Continued)

Step Two: List each driver and restraint you have identified through your completion of the worksheet on the previous page. Next, estimate the potential impact that each driver and restraint might have on your industry's potential for growth over a period of time that you can forecast with reasonable accuracy (for the purposes of the sample below, we have extended the forecast over a seven-year period, but this number will vary depending on forecasting accuracy and standard projections within your own industry).

Analysis of Market-Specific Drivers and Restraints

Sample: Healthcare Technology Market (Ranked in Order of Impact)

Rank	Driver	1-2 years	3-4 years	5-7 years
1	Customer base increasing due to obesity epidemic	High	High	High
2	Product replacement cycle expected to accelerate	High	Medium	Medium
3	[Product] still reimbursed by Medicare	High	Medium	Medium/Low
Rank	**Restraint**	**1-2 years**	**3-4 years**	**5-7 years**
1	Current competitors deeply entrenched; high barriers to entry	High	High	High
2	Competitive bidding expected to lower reimbursement rates for Medicare patients	Low	Medium	High
3	Widespread compliance issues (customer not using product correctly)	Medium	Medium	Medium

A Note on High/Medium/Low Scoring

Frost & Sullivan rates drivers and restraints on a 10-point scale, with 10 representing a perfect correlation between a driver/restraint and revenue growth/loss in a given sector. The score then translates into a "high", "medium", or "low" classification, as outlined below. Group discussion will help you assign the appropriate scores to each driver or restraint.

- 8 to 10: High
- 4 to 7: Medium
- 1 to 3: Low

Reminder! You should make this exercise highly interactive and invite your peers in Sales, Marketing, Market Research, R&D, Competitive Intelligence, and Corporate Development to contribute unique insights and perspectives.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #2: Industry Landscape Assessment Worksheet[32]

Overview

What is it?
A list of questions to guide your search for new technology opportunities within a market.

Why should you use it?
It will help you identify new technologies that are gaining ground in your market (or might gain ground in the future). It will also help you to catalogue which technologies are being adopted by competitors or customers.

Industry Landscape Assessment Worksheet

Industry Overview

- Is the industry experiencing a period of rapid growth, or has growth stalled or matured over the last few years?
- What factors could favorably alter growth projections in this market?
- What factors might restrict or stall growth in the market?
- How many mergers or acquisitions occurred last year?
- How many market players are engaged in partnerships or in licensing agreements?
- What is the bargaining power of suppliers?
- What is the threat of new entrants?
- How much power do customers have (i.e., what are switching costs, how commoditized is the market)?
- How do most customers make purchase decisions? Based on price? Quality?

Technology Activity

- What technologies are currently competing in this market?
  - What segments are they serving?
  - Are there gaps that a new technology might be able to fill?
- How many new technologies were commercialized last year? Is this number more or less than the previous year?
  - Of those, how many appear likely to alter the market significantly?
- Is there a new scientific or engineering discovery that could be the basis for a viable commercial opportunity?
- Are different technology streams converging to create new opportunities?
- What transformative technologies are under development outside of my firm or industry? Consider searching:
  - *Public licensors of technology*: universities and independent research institutes, association of university technology managers, the federal laboratory consortium for technology transfer, the technology transfer offices of U.S. federal government agencies, and databases of federal grantees of research and development awards
  - *Technical and trade literature*: MedLine, Dialogue, patent databases, writings of futurist organizations
- What are the signals that a new technology is gaining ground? Consider:
  - *Strong signals*: those that reveal commercial investment in the technology and signal its feasibility to serve market needs
  - *Competitors' actions*: can validate a firm's analysis and change the market context of the analysis
  - *Weak signals*: subtle indicators that a scientific discovery has commercial potential and that independent analysis has recognized this potential (consider citation or co-citation analysis, conversations at trade meetings, corporate intelligence (gleaned from public information, informal discussion), and parallel discoveries (recognition that independent researchers in different disciplines have happened upon the same technology)

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #3: Scenario Planning Template[33]

Overview

What is it?
A series of questions to help you analyze multiple situations in which your company might find itself in the future.

Why should you use it?
It will force you to (1) gather internal insights and external expertise to establish plausible scenarios for the future of your industry, (2) consider investment implications in the context of each scenario, and (3) integrate scenario-based conclusions into your technology strategy planning.

Scenario Planning Template

A. Scenario Development

Develop a set of possible future scenarios for your business.

1) What issues do we want to understand better?
2) What are the main forces that are shaping the future of our industry?
3) Who are the major stakeholders (internal and external) who would have an interest in these issues?
4) What industry trends seem particularly uncertain or unpredictable?
   a. Which of these seem most important?

B. Scenario Evaluation

Answer the following questions for each scenario you have developed:

1) How would key players and industry-specific forces evolve and act in this scenario?
2) What new market needs and/or customers would emerge in this world?
3) Which new or existing competitors are poised to succeed in this world?
4) What is important about how this scenario would play out in different regions?
5) How will our current technology strategy perform in this scenario?
6) Would a technology currently under consideration perform well in this scenario?
7) What are the key challenges for us that will emerge in this scenario?
8) What are the new opportunities (technology-specific if possible) that will emerge in this scenario?

Reminder! For more on how scenario planning can help inform your strategic planning efforts, please see Growth Team Membership's Best Practice Guidebook on Merck's scenario-based planning process.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

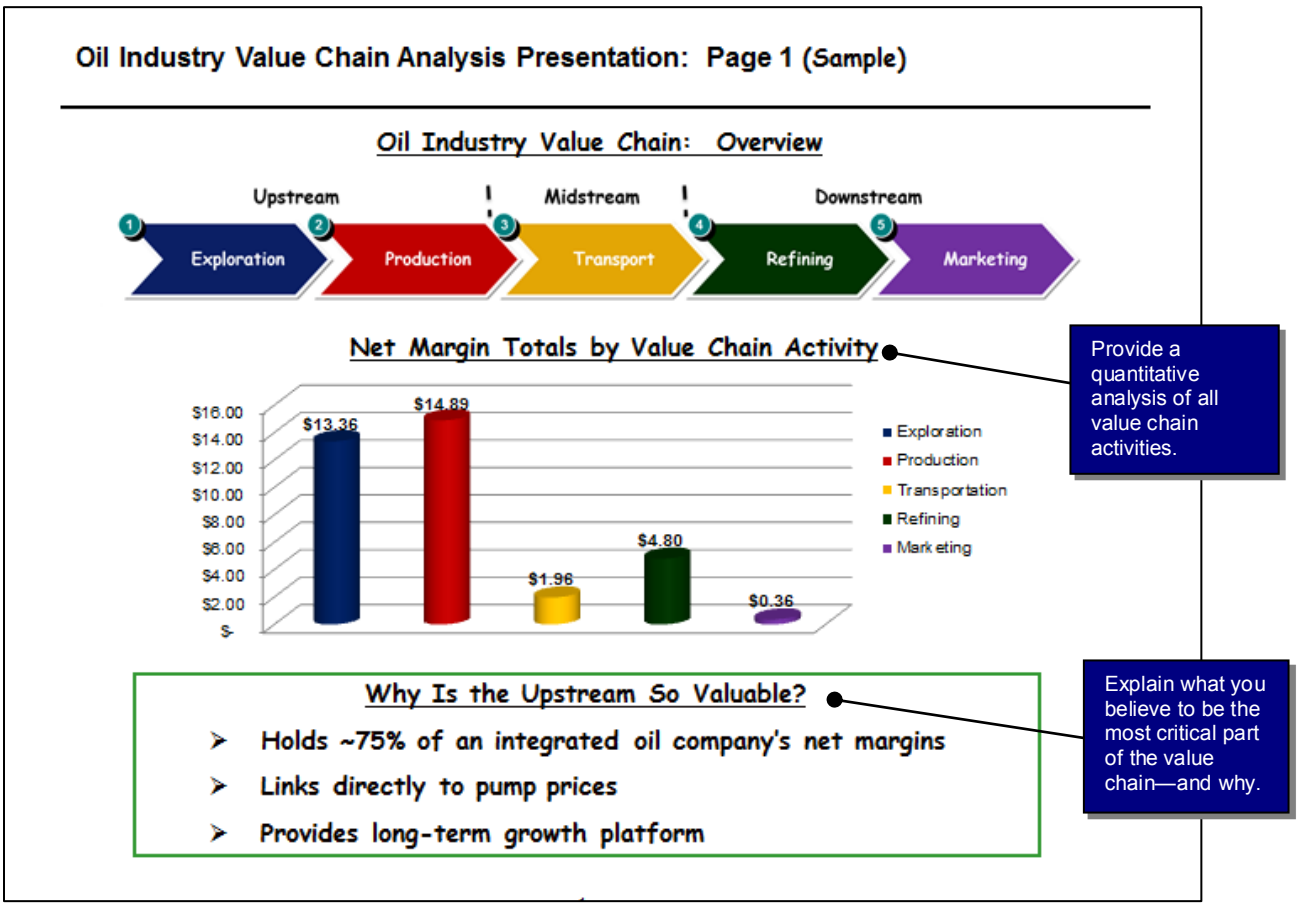
STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #4: Industry Value Chain Template[34]

Overview

What is it?
A template that forces you to unpack your industry's value chain. The simple format will make it easy for you and your teams to understand which elements of production add the most value to a product or service.

Why should you use it?
You need to consider the highest-value components of your sector's value chain, and evaluate your company's current performance and limitations in those areas. A high-value area with high involvement will suggest a unique competitive advantage, whereas a high-value area with little current involvement is a prime area to bolster through partnerships and/or the application of a new technology.



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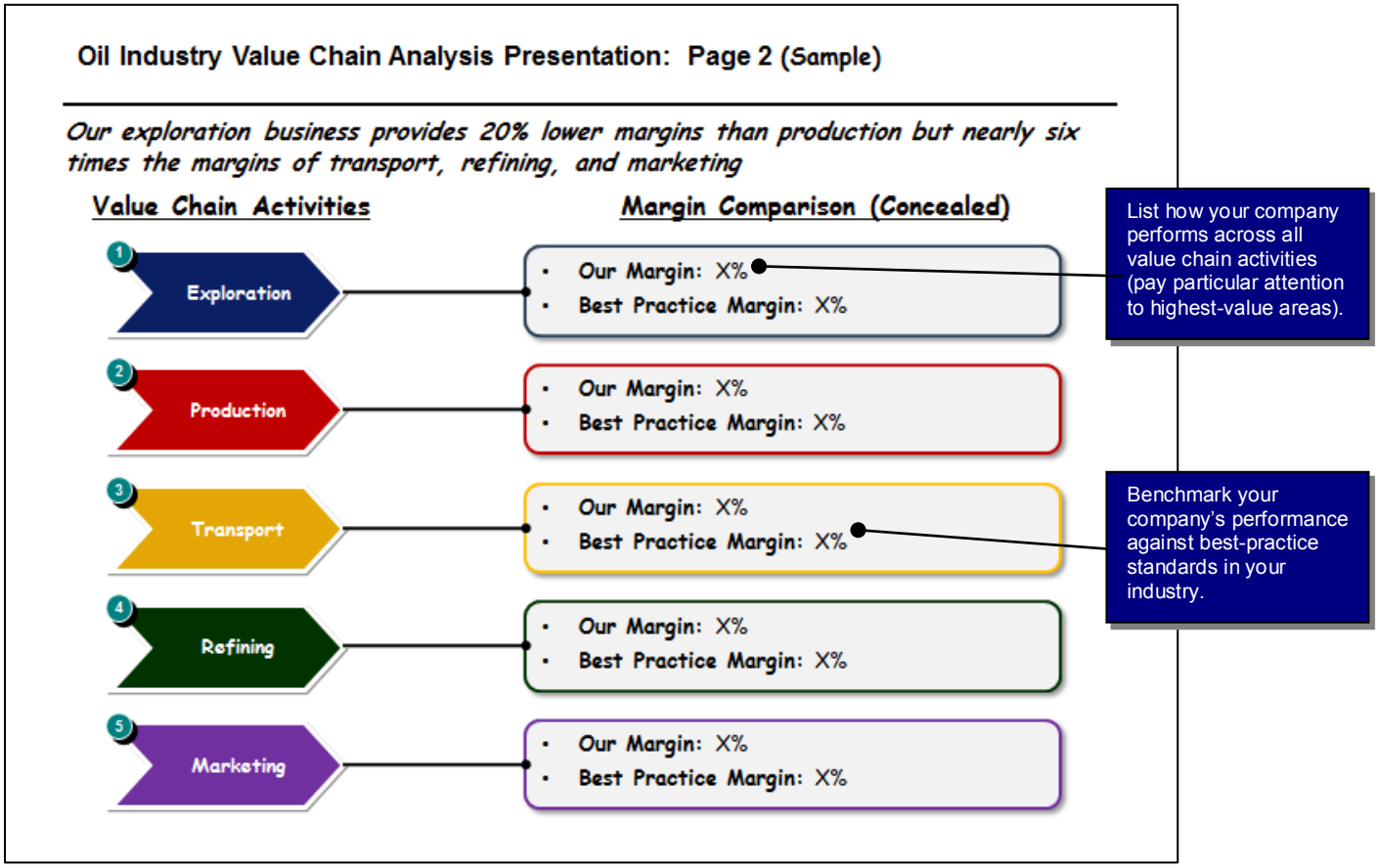
Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #4: Industry Value Chain Template (Continued)



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Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #4: Industry Value Chain Template (Continued)

Oil Industry Value Chain Analysis Presentation: Page 3 (Sample)

Exploration is our best bet for future profitability and efficiency gains

- While our margins in production are already strong, exploration numbers are below the current best-practice level for the industry
  - Improvement in our exploration capabilities could translate into significant improvement to our margins
  - Other activities in the value chain (e.g., marketing) do not offer the same profitability opportunities as exploration
- As we search for and evaluate new technologies, we should place particular emphasis on those that could help us:
  - Gain operational efficiencies in oil exploration
  - Improve the accuracy of our exploration activities
  - Achieve a lower cost basis for future pricing decisions
  - Differentiate from the competition on "green" or "eco-friendly" exploration measures

State the opportunity.

Explain why (or why not) your company should pursue technology opportunities tailored to this part of the value chain.

Reminder! The data provided on this and the preceding pages is just for illustration purposes.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP ONE: MARKET ANALYSIS (CONTINUED)

Tool #5: Regulatory Analysis Worksheet[35]

Overview

What is it?
A list of considerations to help you assess the pervasiveness of public policy within a given region and its level of support for new technology innovation.

Why should you use it?
You need to consider how regulatory restrictions or incentives could affect new technology development within your market. This worksheet will help you classify your government's support for technology innovation and enable you to plan accordingly.

Regulatory Analysis Worksheet

Consider the extent of government intervention within a given market and/or country when searching for new technology opportunities.

Institutional Infrastructure
1) Does the government enforce an intellectual property regime that balances the need to reward innovators with the need to encourage follow-on inventions?
2) Is there an educational system that produces skilled workers capable of rapid adoption of new technology?
3) Is there a financial system that provides capital over a broad range of firms?

Research Infrastructure
1) Does the government maintain a laboratory structure that supports scholars and encourages publication (e.g., the United States' National Institutes of Health)?
2) Does the government fund "test beds" (operating systems designed to test the feasibility of particular technologies)?

Military Technology
1) Does the government directly fund technologies related to defense (e.g., aviation/space, electronics/communications)?
2) Does the government provide incentives to corporations that contribute to the development of new technologies that strengthen the national defense?

Government Directives
1) Does the government take a direct role in encouraging or protecting the commercial exploitation of well-understood technologies (but not directly fund it)?
2) Has the government adopted industrial policies designed to create advantages for domestic industries at the expense of foreign firms?

Standard Setting
1) Does the government take an active role in defining technology terms and qualifications for using those terms (e.g., establishment of a standard for High Definition TV)?
2) Does the government taken an active role in enforcing compliance with those standards?

Government Regulation
1) Does the government maintain an organization responsible for approving all new products within a category (e.g., The Food and Drug Administration)?
2) Do these regulatory bodies significantly influence the category in which we primarily operate?

Government Subsidies
1) Does the government take an active role in selecting the technologies it would like to see succeed?
2) Does the government support commercial roll-out of a desirable technology through specially selected firms?

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS

Tool #1: Customer Segment Profiling Template[36]

Overview

What is it?
A framework for evaluating new technology adoption behaviors across your customer base.

Why should you use it?
The rate of a new technology's adoption depends on the number of buyers who progress through the adoption process, when they start, and how quickly they make the decision to try. By thinking about the behaviors of each segment of technology adopters within your market (and the relative size of each), you can build realistic projections for commercialization.

Customer Segment Profiling Template

Enthusiasts	Strategists
They are…lead users who have needs in advance of the rest of the market **Believe that…** any new technology in their area of interest has promise **Are known for…**adopting new technologies early and fearlessly **Their endorsement…**can influence other segments to accept a new technology	**They are…**early adopters who have specific technology needs **Believe that…**new technologies can change the rules of competition in their market **Are known for…**operating in specialized niches; being costly to support **Their endorsement…**can help publicize a new technology
Pragmatists	**Conservatives**
They are…influenced by the endorsement of early adopters **Believe that…**it is better to wait to adopt a new technology, rather than be the first to experiment with it **Are known for…**buying from the leading firm (assuming a relationship between market presence, reliability, and user-friendliness) **Their endorsement…**comes only after the benefits of the technology are well proven and the risks are tolerable	**They are…**late adopters who hesitantly accept a technology **Believe that…**it is better to adopt an innovation only after a majority of people have tried it **Are known for…**being hesitant, price sensitive, skeptical of their ability to derive value from a new technology, high needs for customer service support **Their endorsement…**Signals that a technology has entered the mainstream
Traditionalists	**A Note on Customer Adoption**
They are…the last to adopt a new technology **Believe that…**new technologies are stressful to accept and difficult to learn **Are known for…**being suspicious of change and only adopting a technology when they have no choice **Their endorsement…**indicates that a new technology has taken on a measure of tradition itself	As these segments demonstrate, prospective customers for a new technology will self-select into segments based on their degree of risk aversion and intensity of need. This leads to differences in time of adoption that can be represented as a bell-shaped curve when plotted over time. After a slow start, an increasing number of people adopt the innovation. This number reaches a peak and then declines as fewer non-adopters remain.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS (CONTINUED)

Tool #2: Voice of the Customer Interview Template

Overview

What is it?
A survey template that you can use to understand purchase behavior, preferences, and perceptions among customers within high-value segments.

Why should you use it?
It will help you articulate customers' needs, challenges, and desired outcomes. In turn, this information will help you consider how you new technologies might help you develop products that would better resonate with customers.

Voice of the Customer Interview Template

A. Overview Questions
(These questions will help you baseline current product performance and customer satisfaction)

1. When did you first purchase [Product], whether from our company or from another provider?
2. What motivated your organization to purchase [Product]?
3. From which provider do you currently acquire [Product]?
4. What other providers are you aware of?
5. How often do you or your team use [Product]?
6. What are the critical issues facing decision makers at your organization?
7. Overall, how satisfied are you with the product you currently use?
8. Whom do you view as the market leader in this space? Who delivers the best product and services?

B. Purchase Behavior Questions
(Note: Only ask these questions if you are confident that their sales focus will not frustrate the customer)

1. Who controls purchase decisions at your organization?
2. How do you approve the purchase of [Product]?
3. Do you issue Requests for Proposals?
4. Do you require product demonstrations?

Page 1 of 2

(Continued on the following page)

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS (CONTINUED)

Tool #2: Voice of the Customer Interview Template (Continued)

Voice of the Customer Interview Template (Continued)

C. Outcomes-Based Questions

1. What task, activity, or job are you trying to complete with [Product]? (Be sure to phrase responses as actions: e.g., "minimize", "increase".)
2. What is the *ideal* output or outcome that you want to achieve?
3. What are you currently doing to achieve your desired outcome?
4. Do you consider it efficient? Why/why not?
5. How do you know when the outcome has been successfully achieved?
6. How do you measure success?
7. How would you alter the way you currently achieve your desired outcome, if at all?
8. How *willing* would you be to alter the way you currently achieve your desired outcome?
9. To adopt [alternative provider's product], you might have to give up the one you currently use. How do you feel about this trade-off?
   a. *If you feel resistant to the trade-off*: would this resistance prevent you from switching providers, even if an alternative were more effective than the one you currently use?
   b. *If you do not feel resistant to the trade-off*: what incentive would you need to make a voluntary switch to a new provider's product (i.e., is improved functionality sufficient, or would you make the decision entirely based off price)?
10. When you consider our organization's product relative to one you currently use (if it is not ours), do you think:
    a. It could fully replace your current product
    b. It could partly replace your current product
    c. It could be used in addition to your current product
    d. It could not replace your current product

D. Perception Questions

1. How do you view [Company's] [product line OR service]? (Note: Open-ended questions will form a small but valuable part of your conversations with clients: unprompted responses can give you insights you might not glean any other way).
2. What is most important to you about our [product/service]? OR: What is most important to you when you complete [activity]?
3. What other factors are of importance to you?
4. Can you rank all factors on a scale of 1 to 10 (10 most important)?

Identify all factors of importance to the customer.

5. How important is it for [Company] to meet those expectations you've just presented? Can you state the importance in quantifiable terms (e.g., a dollar figure)?
6. To summarize, [restate top value-drivers] are most important to you when dealing with [Company] or [performing Activity]. Please tell us which of these are:
   a. Absolutely necessary
   b. Not critical but important
   c. A value-added bonus

Ask customers to make trade-offs.

7. Some customers have asked for [insert product/idea-specific detail/feature here]. For you personally, this is:
   a. Must have
   b. Nice to have
   c. Something I might use
   d. Something I'd never use

Ask customers questions with specific, quantifiable responses.

Page 2 of 2

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS (CONTINUED)

Tool #3: Voice of the Customer Prioritization Guidelines

Overview

What is it?
A framework for prioritizing insights gathered through your online listening and in-person interviews.

Why should you use it?
It will help you determine which customer needs and preferences most affect purchase decisions, satisfaction, and share of wallet. The Satisfaction/Importance Matrix will help you further prioritize these gathered insights.

Voice of the Customer Prioritization Guidelines

Guideline #1: Rank customers' value-drivers based on insights collected online and through one-to-one interviews.

Customer Needs Prioritization Categories

Category	Description	Examples
Things you have to do ("must have")	Baseline expectations for performance; failure to get these right will result in customer attrition	Long-lasting battery; awareness of incoming communication; prevention of inadvertent setting changes
Things you should do	Any change in performance directly affects customer satisfaction (either positively or negatively)	Billing accuracy; customer service quality; warranty protection
Things that will delight	Important but not critical: absence does not harm satisfaction levels, but its presence may increase satisfaction levels	Web access through phone; touch-screen functionality; MP3 compatibility

Responses to your trade-off questions will fall into one of these three categories.

Consider how you might categorize your potential product against these factors.

Guideline #2: Cross-reference your company's performance against customers' top value-drivers.

Must-Have Value-Drivers Analysis Template (Sample)

Prioritized Must-Have Value-Drivers	Long-lasting battery	Awareness of incoming communication	Prevention of inadverte setting changes
Customer Requirements	"I can use my phone continuously for eight hours without charging."	"I always know when I'm getting a call."	"My phone never does anything I don't want it to do."
Customer Expectations	+/- 2 hours in customer-expected usage time	Don't miss more than 3 calls per day	Settings stay the same unless altered by user; lock panel is easy to use
[Company's] Ability to Meet Requirements	Current battery lasts an average of four hours with continuous usage	Volume, ring, and vibrate options are featured on current model	Screen lock function is featured on current model
[Company's] Ability to Meet Expectations	Poor: Average falls outside of margin of error	Good: we control what we can control	Medium: Lock panel is hard to locate/activate

Prioritize and analyze customers' "must-have" value drivers.

High-priority, unmet needs warrant further consideration.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS (CONTINUED)

Tool #4: Satisfaction/Importance Matrix[37]

Overview

What is it?
A framework for base-lining your company's current performance in serving customers.

Why should you use it?
It will help you consider your company's activities and service from the customer's point of view. You may want to build these questions into Part A of the Voice of the Customer Interview Template.

SATISFACTION / IMPORTANCE MATRIX

CUSTOMER'S IMPORTANCE	Low Satisfaction	High Satisfaction
High	**Trouble Zone** Underperformance with these essential activities has the potential to alienate customers; focus capability, product, and service improvement on these areas.	**Loyalty Drivers** These activities are part of the foundation your company's success; continue to invest in maintaining this high level of performance.
Low	**Low Priorities** These activities offer no value to customers and no return on investment; there is no urgent need to invest in enhancing these capabilities.	**Differentiators** These non-essential activities can positively affect the customer experience, though their absence may not harm it. Consider maintaining if the activities are low-cost or can be indirectly tied to revenue (conversely, this may be an area to reduce service and improve overall profitability).

CUSTOMER'S SATISFACTION

(Directions listed on the following page)

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS (CONTINUED)

Tool #4: Satisfaction/Importance Matrix (Continued)

Directions

1. Ask your customers to rank your company's performance against the categories listed below on a High, Medium, Low scale:

2. Take the average for each response and plot on the grid accordingly.

Categories

For each category, ask the customer, "How would you rank your own experience regarding…?" and, "How important is this to you personally?" Next, prioritize these categories' overall importance to your business.

Category	Satisfaction	Importance	Ranking
Quick delivery	High	High	1
On-time delivery	Medium	High	5
Flexibility	Medium	Low	10
High quality, few errors	High	High	2
The ability to document value	Low	Low	13
The ability to listen to my needs and act accordingly	High	High	3
Understanding of my business and my needs	Low	High	7
Proactiveness	Medium	Medium	8
A service-minded attitude	High	Medium	6
A single point of contact	High	High	4
Delivery across channels	Medium	Low	12
Width and depth of systems and / or platforms	Low	Medium	9
Industry leadership	High	Low	11

This list is not comprehensive; add to it whatever categories are most relevant for your business.

These scores and rankings are for demonstration purposes only.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP TWO: CUSTOMER ANALYSIS (CONTINUED)

Tool #5: Online Listening Guidelines[38]

Overview

What is it?
A list of considerations that can help you monitor and learn from online conversations that your customers are having about your business and industry.

Why should you use it?
Listening can significantly influence how you improve or evolve your products, services, or infrastructure. Observation is the first step in identifying and changing aspects of your offering that customers don't like.

Online Listening Guidelines

Guideline #1: Don't interrupt.

If you want to gather truly unbiased or uninfluenced customer insights, you must observe but not directly respond (conversation comes when you are prepared to act on gathered intelligence).

Guideline #2: If you build it…

Consider creating a new online destination for your customers to share their views and connect with each other. (Dell's IdeaStorm is a good example.)

Guideline #3: No harm in asking.

Solicit ideas from customers to show that their opinions are important to you. Search sites that aggregate customer feedback; such an index can help you spot trends easily. Sites that feature user-generated feedback, analysis, and experiences with products, brands, or services can be particularly helpful.

Guideline #4: Listen to keywords.

Monitor a portfolio of searches and analyze the results. Consider language frequently employed in:

- *Social bookmarks*: sites and communities that allow users to share, organize, and search relevant content from around the Web in one place (e.g., Twitter, Digg, Ybuzz)
- *Blogs and conversations*: search engines and networks that reveal activities occurring within the blogosphere
- *Blog communities*: communities dedicated to featuring blog content, conversations around blogs, and organizing blogs within a single network or channel

Guideline #5: Know where to look.

There are many communities and conversations thriving in smaller but still relevant networks other than Facebook and Twitter. Message boards and discussion forums dedicated to topics, themes, projects, or purposes may seem old-fashioned but are still pervasive today. "Nicheworks" (social networks specifically dedicated to topics, activities, targets, and intention) can also provide valuable insights from a knowledgeable and self-selected group of contributors.

Guideline #6: Search for trends.

One of the difficulties of monitoring conversations is that they are so dispersed. Vendors such as BuzzMetrics, Radian6, Zeta Interactive, SAS, Lithium Social Media Monitoring, and Visible Technologies can be contracted to spot patterns in blogs, discussion boards, and Twitter streams. You might also want to consider monitoring activity around your industry on Wikipedia, using RSS to monitor Twitter, Google News, and Google Blog Search, among other sites.

Guideline #7: They're not all diamonds.

Some channels will deliver more meaningful insights than others. Listen to conversations among multiple sites to identify and distinguish relevant interaction from unproductive dialogue.

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP THREE: COMPETITOR ANALYSIS

Tool #1: Competitive Landscape Chart

Overview

What is it?
A presentation template that you can use to share information on market intelligence and specific competitor's technology investments.

Why should you use it?
It will help you consider which competitors are actively investing in or commercializing new technologies, and compare those actions with ones your company is planning to take. By studying key attributes of their new technologies, you can also identify opportunities to differentiate any technology that your company decides to develop.

A. Competitive Landscape: Whole Market (Sample)

Category	Details
Number of Companies in the Market	More than 40
Types of Companies	Manufacturers Start-ups Component Manufacturers
Distribution Structure	Direct Original Equipment Manufacturers
Tiers of Competition	Tier One: International companies with a broad product range that accommodate a wide range of applications Tier Two: Medium or small companies with a focus on specific applications and/or geographic market
Key End-User Markets	Transportation Industrial Consumer Electronics Power Management
Key Competitive Factors	Price Production Capacity Product Reliability Size

B. Individual Competitor Profiles (Sample)

Company Name, Location, and URL	Technology or Product Name	Key Attributes	Similarities with Our Products or Technologies
Competitor A City, State, Country www.CompetitorA.com	[If competitor has commercialized a technology, list the name here.]	Allows organizations to….	Shares data with…
Competitor B City, State, Country www.CompetitorB.com		Eliminates the need for…	Accelerates the process of…

Phase 2: Opportunity Identification

Step	Market Analysis	Customer Analysis	Competitor Analysis

STEP THREE: COMPETITOR ANALYSIS (CONTINUED)

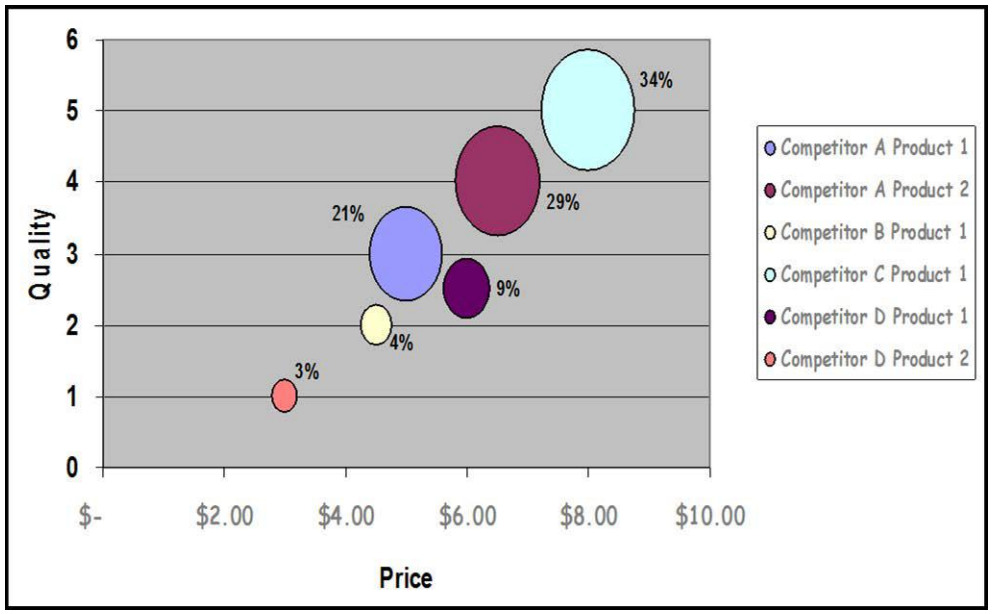
Tool #2: Emerging Technology Price/Quality Matrix

Overview

What is it?
A visual guide to new technologies' market position, based on quality and price.

Why should you use it?
It will help you get a sense for how new technologies being commercialized by competitors stack up against one another. This assessment will show you where there are market holes that a new technology might fill. In turn, this perspective will help you narrow your search for new technologies.

Emerging Technology Price/Quality Matrix (Sample)



Scoring Guide – X Axis:
Label the price of each competitor's product in the market

Scoring Guide – Y Axis:
*Score capability levels for [product]:**

5	Two-way; high accuracy
4	Two-way; low accuracy
3	Two-way; phrase-based
2	One-way; fixed phrase; high accuracy
1	One-way; fixed phrase; low accuracy

* Note: The capabilities listed above represent quality levels for language translation products and are for demonstration purposes only.

User Guide

1. Identify top competitors for your company's product.
2. Collect data for each competitor: market share, current market positioning, product or service pricing, and product or service quality.
3. Input that data into the template and the bubbles will automatically populate. The resulting image will help you identify market clusters (e.g., a concentration of high-quality products with premium pricing) that you might want to avoid pursuing through your technology strategy.

PHASE 3: OPPORTUNITY EVALUATION

Growth Process Toolkit

Technology Strategy

PHASE 3: OPPORTUNITY EVALUATION

Where Are We Now?

Completion of the exercises featured in Phase 2 has enabled you to:

- Assess the current state of your market, identifying emerging technologies and potential gaps
- Capture customers' needs and behaviors (searching for any key unmet needs that a new technology could fill)
- Gather intelligence on competitors' actions (focusing on their technology investments and how they might affect your business)

At this point, you should know what role new technologies should play in your company's growth strategy; understand your company's best capabilities; and see where new market opportunities lie.

What Do I Do Next?

Your next step is to evaluate multiple technology opportunities, searching for those that (1) present the greatest commercial potential, and (2) fit best with your company's strategy.

Outlined below are the activities and steps you need to complete in Phase 3. The pages that follow will highlight the information and resources you need to complete each of these steps.

OPPORTUNITY EVALUATION: KEY STEPS AND TOOLS

STEP	PURPOSE	SAMPLE TOOLS
Commercial Opportunity Assessment	Estimate the long-term potential of emerging technologies	Applications Evaluation Template Uniqueness/Importance Matrix
Strategic Fit Assessment	Determine how feasible it would be for your company to take advantage of promising emerging technologies	Risk Assessment Checklist Opportunity/Fit Matrix

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP ONE: COMMERCIAL OPPORTUNITY ASSESSMENT

Tool #1: Commercial Indicators Checklist[39,40]

Overview

What is it?
A framework for considering factors that could influence a new technology's long-term commercial potential.

Why should you use it?
It will help you take a high-level look a technology's benefits and drawbacks before you begin costly development activities. Answers to some of the questions below (particularly those pertaining to a technology's applications) will feed directly into the Applications Evaluation Template; others will help you write complete the Business Case Template in Phase 4.

Commercial Indicators Checklist

Invite the leadership team and technology and industry experts to provide their perspectives on the following questions:

Competitive

1) Have we observed any hostile or friendly acquisitions recently? Is there a relationship between these actions and any technologies that we are investigating?
2) Are competitors cross-licensing any technologies that we are also investigating?
3) Have competitors built any legal challenges to other firms' intellectual property positions? Do these legal challenges affect us, either directly or indirectly?
4) Have any competitors been purchasing or applying for technology patents in our area of interest?
5) Have competitors engaged in any price competition recently? Has this competition been brought on by use of a new technology, or would a new technology potentially help us to avoid pricing pressure from competitors?
6) Have competitors been investing in other proprietary technologies?
7) Have competitors been taking any imitative actions of technologies that previously were unique to our company?
8) Are we seeing competitors taking active steps to upgrade their existing technologies?

Financial

1) What will it cost to develop the technology?
2) What is the overall size of the market?
3) At what price point could we introduce the new technology (and at what profit margin)?
4) What sales could we project in the near-, medium-, and long-term?
5) To what extent do we predict the product will be recognized and purchased by customers?

Applications

1) What applications does this technology most obviously fill?
2) What applications could this technology have in markets in which we currently do not compete?
3) Of those new markets, which seem particularly promising?
4) What is the likelihood that we could establish licensing agreements both within our current market, and within any new markets in which this technology might apply?
5) What value could we assign to those licensing agreements?
6) Would partnerships provide an even greater opportunity for us to take advantage of these applications? Could we make use of current partner relationships, or would we need to pursue new ones?

Make special note of each technology's applications. The next tool will help you rank the importance of each application against criteria that could affect the commercial potential of that technology.

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP ONE: COMMERCIAL OPPORTUNITY ASSESSMENT (CONTINUED)

Tool #2: Applications Evaluation Template

Overview

What is it?
A list of criteria that could affect a technology's market potential, and a scorecard that helps you weigh the attractiveness for your business of each defined end-use application.

Why should you use it?
It will help you assess the commercial viability of each technology under consideration (and each of that technology's applications) against a shared set of criteria, enabling a fair and unbiased comparison of all options. The scorecard's ranking will also help quantitatively surface which technologies you should evaluate further in Step Two (Strategic Fit Assessment).

Applications Evaluation Template

Step One: List All Commercialization Criteria

Note: You should adjust this list based on your company's needs.

Category	Criteria	Description
Market	Total annual sales of incumbent or new market	Total market size of segments relative to our business
	CAGR of incumbent or new market	Growth rate of target market
	Incumbent or new market profitability	Average market profitability
	Acceptance of new technologies in the new market	Amenability to and acceptance of new technology
Technology	Process scalability	Ability to manufacture new technology in high volume (i.e., estimate of the ability of the process to be scaled as information is updated and expectations of market size are appropriately adjusted)
	Time to market	Timeframe for commercialization from a purely technological perspective
	Performance advantage/differentiation	Estimate of the superiority of the proposed technology over current best alternatives
Socio-Political-Legal Risks	Impact of government policy	Estimates of the potential impact of current and future regulations on technology prospects (the Regulatory Analysis Worksheet can help you with this assessment)
	Liability risks	Extent of liability exposure of companies involved in deploying this technology

(Continued on the following page)

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP ONE: COMMERCIAL OPPORTUNITY ASSESSMENT (CONTINUED)

Tool #2: Applications Evaluation Template (Continued)

These weights, applications, and scores are for demonstration purposes only.

Step Two: Assign a Score to Each Technology (Sample)

Fill out this scorecard for each technology under consideration. List that technology's applications down the three right-hand columns, and then score those applications against the listed criteria (or whatever criteria you have specifically developed).

Category	Criteria	Weight	Application 1	Application 2	Application 3
Market	Total annual sales of incumbent or new market	.28	4	3	2.5
	CAGR of incumbent or new market	.14	4	3	2
	Incumbent or new market profitability	.09	3	3.5	2.5
	Acceptance of new technologies	.08	3	3	2.5
Technology	Process scalability	.20	4	3	2.5
	Time to market	.10	3.5	2	1.5
	Performance advantage/differentiation	.03	3	3	3
Socio-Political-Legal Risks	Impact of government policy	.06	4	3.5	2
	Liability risks	.02	4	3.5	2
	Total Weight (100%)	**1**			
	Total Score (out of 5)	**--**	3.75	2.98	2.33

The higher the score, the more attractive the application. Look for technologies with multiple applications receiving high scores.

How to Use the Scorecard

1) Fill out this scorecard for each technology you are evaluating.
2) Assign a weight to each criterion; weights should total 1. The weighting process is somewhat subjective—invite industry experts and others who study the space to provide their input, and search for patterns across their responses.
3) Rate each end-use application area you have identified (we have shown three above for demonstration purposes, but this list will usually be lengthy). Assign a score to each out of a total of 5 (the better the fit between a criterion and an application, the higher the score). Again, to ensure these ratings are realistic, you should enlist the help of internal and external technology experts.
4) Once you have entered your scores for each criterion, you can then build a composite score of attractiveness for each application. Again, the closer the score is to a perfect 5, the more attractive the application may be.
5) Compare results across each technology you are evaluating. Technologies will high-scoring applications present the greatest commercial opportunity and will warrant further evaluation in Step Two (Strategic Fit Assessment).

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP ONE: COMMERCIAL OPPORTUNITY ASSESSMENT (CONTINUED)

Tool #3: Uniqueness/Importance Matrix[41]

Overview

What is it?
A visual guide to a technology's overall uniqueness and potential importance to customers (based on the key features it offers).

Why should you use it?
It will help you determine which technologies have the highest commercial potential based on what customers value. By mapping a technology's numerous attributes (or features) on the matrix below, you will be able to identify which technologies have true game-changing potential.

UNIQUENESS/IMPORTANCE MATRIX

UNIQUENESS	IMPORTANCE: Low	IMPORTANCE: High
High	**Discriminators** These features will likely engage a niche group of early adopters or technology enthusiasts; they may over time become game-changers as more traditional buyers adopt the technology.	**Game-Changers** These features will dramatically influence customers' propensity to purchase; ideally, any new technologies you develop will have one or more game-changing attributes.
Low	**Low Priorities** These features offer little or no value to customers and no return on investment; there is no urgent need to invest here.	**Basics** These features are essential to customer satisfaction (but do not deliver any unique value, given their pervasiveness). Their commercial potential is therefore minimal.

(Directions listed on the following page)

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP ONE: COMMERCIAL OPPORTUNITY ASSESSMENT (CONTINUED)

Tool #3: Uniqueness/Importance Matrix (Continued)

Directions

1) Develop a list of a technology's features.
2) Plot each feature according to responses to the questions listed below.
   a. *Note*: Consider asking customers in high-value segments to provide their own assessment of the importance of each feature (you may even want to interview your competitors' customers, since they may offer additional perspective on what other companies are offering).
3) Rank each response to those questions based on a High, Medium, and Low scale. Take the average for each and plot on the grid accordingly.
4) Look for clusters in the upper-right quadrant of the matrix. Concentration in that area indicates that a technology may have a high commercial appeal.

Uniqueness

1) To what extent would a product with [Feature X] stand out for you in the market?
2) To what extent would a product with [Feature X] make our brand stand out for you (i.e., set us apart from the competition)?
3) How likely is it that you have seen a product already that boasts a feature similar to, or the same as, [Feature X]?

Importance

1) How likely is it that [Feature X] would inspire you to switch your business to a new provider?
2) How likely is it that [Feature X] would make you willing to pay more than you are paying now?
3) How likely is it that [Feature X] would make you buy more?
4) How likely is it that [Feature X] would make you recommend more?

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP TWO: STRATEGIC FIT ASSESSMENT

Tool #1: Organizational Readiness Report Card[42]

Overview

What is it?
A diagnostic tool to help you grade your company's performance against a best-in-class standard for an organization well-prepared to pursue and support a new technology's development.

Why should you use it?
This exercise will make clear any organizational performance gaps or weaknesses that could hinder the success of your development efforts, which you can then proactively address. You can also use this report card as a presentation tool, since it draws attention to strengths and weaknesses in an easy-to-understand format.

Organizational Readiness Report Card (Sample)

Criteria	Best-in-Class Standard	[Company] Current State	Implications	Grade
Organization Culture	• Entrepreneurial, participatory, continuous improvement systems • High employee involvement, idea suggestion systems and linked rewards • Customer orientation	No shared accountability; no employee incentives for providing constructive or unsolicited feedback	We risk missing out on opportunities by not encouraging our employees to share process improvement ideas.	C
Process and Organization Structure	• Disciplined research on product demand and market opportunity • Companywide commitment to pursuit of new markets • Clear ownership for each phase of the market entry process	We systematically identify and pursue new market opportunities (efforts are supported across Marketing, Sales, R&D, and other functions)	We have strong processes in place supporting market entry, but if we could improve idea-sharing (see note on culture) our processes might run even more smoothly.	A
Budgeting and Cost Control	• Stable budgets set with long-term goals in mind • Strict cost control measures employed universally	We determine budget as a % of previous year's sales; allocation is often "first come, first served", so cost controls vary depending on idea or timing	Sometimes market opportunities stay on the table longer than they should, thereby diverting resources from more promising opportunities.	C
Capacities and Locations	• Expansion decisions made by centralized team • Expansion strategy executed by regional offices • Regional offices consistently contribute local intelligence to centralized team	Regional offices inconsistently share local insights or opportunities with the centralized team; communication tends to be one-way	Visibility and communication occasionally suffer and good ideas can get lost.	D

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP TWO: STRATEGIC FIT ASSESSMENT

Tool #2: Opportunity/Fit Matrix

Overview

What is it?
A visual guide to a technology's commercial potential and fit with your company's technology needs and growth strategy.

Why should you use it?
It will help you determine which technologies are highest priority for your business, and which deserve further investment (whether through in-house development or external partnerships or licensing agreements).

OPPORTUNITY/FIT MATRIX

OPPORTUNITY	Low Fit	High Fit
High	**Partner or License** You can still take advantage of these high-value opportunities with some outside assistance. Consider whether strategic partnerships or licensing agreements could enable you to move forward with development.	**Develop** These technologies have the potential to dramatically alter a product category, and your company is well-positioned to exploit the opportunity.
Low	**Back-Burner** These technologies offer no game-changing potential and are unrelated to what your company does best. Revisit when or if commercial potential or your company's capabilities change.	**Watch and Wait** It is possible that these technologies will become more commercially promising with time. Continue to monitor them and move into the "develop" category when or if conditions change.

***A Note on Opportunity and Fit**
Frost & Sullivan defines "opportunity" as a technology's growth potential and "fit" as your company's current capabilities to execute on the opportunities under consideration.

(Directions on the following page)

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP TWO: STRATEGIC FIT ASSESSMENT (CONTINUED)

Tool #2: Opportunity/Fit Matrix (Continued)

Directions

1) Plot each technology according to responses to the questions listed below.
2) Rank each response to those questions based on a High, Medium, and Low scale. Take the average for each and plot on the grid accordingly.

Opportunity

1) How certain are we that this technology addresses a distinct customer need?
2) What is the likelihood that this technology will be embraced by our most profitable customer segments?
3) With what degree of certainty can we predict the size of the global market opportunity?
4) With what degree of certainty can we predict how sustainable the market opportunity is?
5) How likely is it that innovation in one company or sector could benefit the market as a whole, boosting the overall returns?
6) How likely is it that we could make significant profit by licensing agreements with this technology?
7) With what degree of certainty can we predict that this technology's applications will increase over time?

Fit

1) To what extent would the new technology utilize production processes and assets that our organization already has in place?
2) To what extent would the new technology play to our employees' best competencies?
3) To what extent would current channel partner relationships support the new technology's path to market?
4) To what extent do we already have a strategic presence in a field related to this new technology?
5) To what extent does this technology support our organization's long-term goals?
6) How certain is it that we could develop the technology at a price that customers would willingly pay?
7) To what degree would our company's culture support new technology innovation?
8) How likely is it that we could stagger investments in this technology over time (as opposed to committing a large sum right now)?

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP TWO: STRATEGIC FIT ASSESSMENT (CONTINUED)

Tool #3: Risk Assessment Checklist[43]

Overview

What is it?
A list of questions, across several dimensions, that can help you position a technology on a risk/reward spectrum.

Why should you use it?
It will help you consider how aggressive or passive to be in pursuing a new technology. Your answers to the questions below will feed into the Strategic Options Grid, which will further help you weigh a promising technology against the risk it presents.

Risk Assessment Checklist

Timing

1) How certain are we that NOW is the time to invest in this technology?
2) Can this technology make enough impact quickly enough to be commercially rewarding?
3) Is the science or creative application of technology developed far enough to bring to market?
4) What complementary technologies or market changes could accelerate it or delay its progress?

Market Landscape

1) Is there uncertainty about the size and scope of the market?
2) Do we lack consensus on what customer needs this new technology addresses?
3) How likely is it that emerging standards will (or will not) benefit this technology?
4) What changes would customers need to make for the technology to succeed?

Technical Feasibility

1) What risks pertaining to technical feasibility should we consider?
2) How likely is it that this technology can be successfully developed (to the point of commercialization)?
3) What scenarios can be envisioned (and how quickly might they develop)?
4) What breakthroughs are needed in the technology?
5) Is the uncertainty (i.e., opportunity cost) associated with a new technology too great to begin R&D?
6) Is the risk of inaction greater than the risk of investing in a new technology?

Organizational Fit

1) How well does this technology fundamentally fit with our company's core capabilities?
2) Would pursuit of this technology force us to reorganize, or take on outside partners?
3) Would licensing be a way for us to capitalize on the technology without significant reorganization?

Competitive Environment

1) What competitive technologies might surpass the one we are evaluating?
2) Which competitors are poised to move more quickly?
3) How much of the market could we afford to cede to them if we waited?

Strategy

1) How certain are we that this emerging technology represents a fundamental threat to our company's core business?
2) Assuming that the status quo will not last:
   a. What is the worst-case scenario if we do not pursue this technology?
   b. What is the best-case scenario if we decide to pursue this technology?
   c. Which do we deem more likely?
3) If we let another company move first, do we have the financial and organizational capabilities to be a fast follower?
4) Does it make sense to let another company bear the costs of technical development, standards-setting, and market testing?
5) Are there first-mover advantages in this market that we could not capture if we assumed a follower position?

Phase 3: Opportunity Evaluation

Step	Commercial Opportunity Assessment	Strategic Fit Assessment

STEP TWO: STRATEGIC FIT ASSESSMENT (CONTINUED)

Tool #4: Strategic Options Grid

Overview

What is it?
A chart to help you organize the overall attractiveness of each option for pursuing a new technology. The accompanying scoring guide will help you evaluate each option against a shared set of criteria.

Why should you use it?
It will help you build a side-by-side comparison for each of your options, drawing attention to the ones that are the most promising. This format can also serve as an effective presentation tool or meeting guide.

These options are for demonstration purposes only.

Strategic Options Grid (Sample)

Market	Option 1: Do Nothing	Option 2: Toe in the Water	Option 3: Follow the Leader	Option 4: Move First
Strategic Attractiveness	1	1	2	3
Financial Attractiveness	2	2	2	3
Implementation Difficulty	3	2	2	1
Uncertainty and Risk	2	2	2	2
Acceptability to Stakeholders	1	2	2	3
Total Score:	9	9	10	12

Scoring Key
1=Less Attractive; 2=Moderately Attractive; 3=Very Attractive

Option 4 – moving first – is the highest-scoring option.

Strategic Options Grid: Scoring Guide

Score	Strategic Attractiveness	Financial Attractiveness	Implementation Difficulty	Uncertainty and Risk	Acceptability to Stakeholders
1	Not a complementary fit; does not support the company's growth strategy; high level of competition	Small market size and minimal potential for profitability	Difficult to implement with existing systems, resources, and capabilities	Highly uncertain and risky market in terms of potential, ROI, R&D, liability, and whether it supports company's core direction	Low: Idea does not support stakeholders' strategic vision in the near or long term
2	Moderately attractive, bread-and-butter type product; existing product type already in market; modest competition	Moderate market size and potential for profitability; "me-too" product; evolutionary	Not especially difficult to implement with existing systems, resources, and capabilities compared to other markets	Moderately uncertain and risky in terms of potential, ROI, R&D, liability, and whether it supports the company's direction	Medium: Idea has potential to support growth strategy but may also take resources away from more promising ideas; stakeholder support is divided
3	Good fit; helps position company as leader; unique offering; low competition	Large market size and potential for profitability; first-mover product; blockbuster potential	Easy to implement with existing systems, resources, and capabilities	Very certain and low risk in terms of potential, ROI, R&D, liability, and whether it supports the company's direction	High: Idea directly supports the company's long-term growth strategy and has garnered near-unanimous stakeholder support

PHASE 4: COMMERCIALIZATION PLANNING

Growth Process Toolkit

Technology Strategy

PHASE 4: COMMERCIALIZATION PLANNING

Where Are We Now?
Completion of the exercises featured in Phase 3 has enabled you to:

- Estimate the size of the opportunity a new technology offers
- Determine whether the organization is prepared to capitalize on the opportunity
- Weigh a technology's potential risks and rewards
- Determine an appropriate path to commercialization

What Do I Do Next?
Now that you have identified and evaluated numerous technology options, and settled on those that make the most sense for your business, you can move forward with commercialization planning. Phase 4 will provide tools for building executive buy-in for a new technology; it will also provide guidelines for acquiring patents, building licensing agreements, or pursuing strategic partnerships or acquisition opportunities. (Please see companion Growth Process Toolkits for more information on strategic partnerships and mergers & acquisitions.)

Outlined below are the activities and steps you need to complete in Phase 4. The pages that follow will highlight the information and resources you need to complete each of these steps.

COMMERCIALIZATION PLANNING: KEY STEPS AND TOOLS

STEP	PURPOSE	SAMPLE TOOLS
Development Planning	Begin building a go-to-market strategy for the new technology (acquiring patents, arranging licensing deals, pursuing partnership or acquisition opportunities)	Patent and Licensing Checklist Partnership or Acquisition Needs Assessment
Executive Buy-In Planning	Ensure the executive team is jointly committed to the chosen technology's development and commercial success	Business Case Template Organizational Alignment Audit

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING

Tool #1: Patent and Licensing Checklist

Overview

What is it?
A guide to your patent search and submission process, as well as some key considerations to build into your search for potential licensors of a new technology.

Why should you use it?
You need to determine whether any companies are establishing IP around a specific technology – which might make it less desirable for development. Depending on the level of detail you are seeking, you may want to involve a patent attorney or patent-seeking company in this exercise – but you can also conduct much of this research on your own.

Patent and Licensing Checklist

Part 1: Patent Searching

- Scan the following databases:
  - World Intellectual Property Organization
  - United States Patent and Trademark Office
  - European Patent Office
  - Micropatent
  - Derwent World Patents Index
  - PatentCafe
- Search technology transfer websites, including national laboratories, government-backed laboratories, military laboratories, non-profit laboratories, and university technology transfer websites
- Monitor competitors' R&D investments
  - 10K Statements (R&D budgets and strategy section in particular)
  - Other SEC filings (e.g., 10Q, 8K, Annual Report)
  - Annual reports
  - Proprietary databases (e.g., American Chemical Society, American Institute of Physics, Materials Research Society, Institute for Electrical and Electronic Engineers)

Part 2: Patent Evaluation

- How "patentable" is this technology (i.e., is it novel, useful, and non-obvious; has it been claimed by an existing patent)?
- Are we aware of all current claims for a patent?
  - How do they compare with one another?
  - When were they filed?
  - What are their cited references?
- Will securing a patent provide us exclusivity if the technology proves to be successful?
- Will the patent give us control over the commercial use of this technology?
- What are the patents and patent applications for any given assignee/assignor that appear when we search a patent database, such as the USPTO?
- Of those search results, what are the top 1 percentile, top 10 percentile, and top 25 percentile patents within the portfolio?
- What is our assessment of key patent claims?
- Who is using the patents?
- What are the companies that should have interest in the patent?
- Would purchasing a bundle of patents from another company help us protect our ownership of a new technology?
- How long would it take for us a patent to issue, and at what cost?
  - Note: Most patents take 3 to 5 years to issue, at a cost of $25,000 to $30,000 in filing costs and legal fees; this amount may increase to $100,000 to $200,000 for international coverage that provides protection in the most commercially dominant markets (United States, Europe, Japan, Canada, and others).

(Continued on the following page)

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING (CONTINUED)

Tool #1: Patent and Licensing Checklist (Continued)

Part 3: Licensing Opportunity Search

- How much would this new technology be worth to a potential licensor?
- Should we parallel-path patent filing and the search for licensing partners? (It can take three or more years for the patent to issue, so there's no reason to wait.)
- How advanced/proven would the technology need to be before it could be of value to a potential licensor?
- Would any licensors be interested in investing in an early-stage idea, which could enable the company to get in early on a breakthrough technology?
- Do we have any hypotheses about applications for this technology? Who are the key players in those fields?
- Does the inventor of the technology know of any specific individuals or organizations that might be interested in it?
- Is it possible for us to tap into the professional networks of other employees?
- Would venture capital firms be interested in funding this technology's further development?

Reminder! Patent filing and licensing agreements are costly, time-intensive endeavors., and your legal team will likely own these activities in the latter stages. There are still things that you can do in the early stages, however, to prepare your company to file successful patents or to find potential licensing partners. The more upfront research and analysis you do, the greater the likelihood that your patent and licensing agreements will meet with success down the road.

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING (CONTINUED)

Tool #2: Partnership or Acquisition Needs Assessment[44]

Overview

What is it?
A series of questions to help you pinpoint your company's need for a strategic partner or acquisition—and where that search should focus.

Why should you use it?
It will help you think through your partnership or acquisition options by contextualizing them within your company's larger technology strategy. This perspective will help you screen partners or targets based off fit and need—helping you avoid impulsive or reactive pursuit of opportunities.

Partnership or Acquisition Needs Assessment

A. Baseline Questions:

- Where do we see disconnects between the capabilities we have and the capabilities we need?
- What kind of a partner would be able to deliver the capabilities that we need?
- Should we consider partners inside our market or in a new one?
- Should we consider a company with whom we already have a strong relationship, or explore new opportunities?
- If we do not pursue a strategic partnership, are we limiting our growth opportunities in the near or long term?
- Based off our assessment of our most unique resources, what sort of company might find value in those offerings (i.e., who would want to work with us)?
- Should we pursue specific companies, or should we wait for them to come to us? Why?
- What is the risk of becoming dependent on a strategic partner's key resources if we do not develop them in-house? Does the potential reward make this risk a worthwhile tradeoff?

B. Identification of Partnership Needs:

- Is our industry experiencing a rapidly expanding technology base?
- Are we frustrated with the difficulty of penetrating a foreign market where the opportunity is attractive?
- Are we struggling to overcome critical employee talent gaps?
- Are we not adopting productivity methods as quickly as we would like?
- Is an increasing R&D burden being felt by our company and industry?
- Is our edge in core competencies under pressure by capable competitors?
- Are we facing increasingly heavy investment burdens that make it harder for us to leverage scarce resources?
- Are destabilizing economic or industry conditions forcing a new look at delivery/distribution alternatives in our markets?
- Do we need to strengthen our process efficiency in our industry?
- Are acquisition opportunities limited because of size, geography, or ownership reluctance towards loss of control?
- Are we struggling to access critical segments of our customer base?

For questions in Part B, try to determine to what degree these issues are a factor for your company. It will help you determine how critical a priority a partnership is for your organization—and narrow the partnership's focus and purpose in the process.

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING (CONTINUED)

Tool #3: Partner or Target Compatibility Scorecard

Overview

What is it?
A weighted scorecard that will help you: (1) articulate and prioritize compatibility requirements for any partner or target you are considering and (2) evaluate each option according to those criteria.

Why should you use it?
It will help you determine (1) which criteria are most critical to your technology strategy and (2) which partners or targets meet the standards you have set. Highest-scoring partners or targets can then receive top priority for further consideration, and you will be able to avoid pursuing low-scoring companies.

Partner or Target Compatibility Scorecard (Sample)
Partner:

Key Criteria	Weight	Yes	No	Unknown	Score
Growth strategy and partnership goals are similar to ours	10	X			10
Has an executive sponsor in place to champion partnership	10	X			10
Can collaborate on new product development efforts	10			X	0
Has extensive knowledge of high-value customer segments	5	X			5
Has company culture, values, and ethics similar to our own	10			X	0
Operates in a geography that we want to enter	8		X		0
Has a strong brand	6	X			6
Has a strong distribution network in high-value markets	6	X			6
Has strong cash flow and balance sheet	4			X	0
Has core strengths complementary to our own	6			X	0
Is willing to share risk	3		X		0
Has ready access to funding	7	X			7
Has track record of successful partnerships	5			X	0
Is willing to engage in an exclusive contract	10		X		0
Total	100	# YES RESPONSES: 6 #NO RESPONSES: 3 # UNKNOWN RESPONSES: 5 PARTNER COMPATIBILITY SCORE: 44 (44 out of 100 possible points)			

(Directions listed on the following page)

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING (CONTINUED)

Tool #3: Partner or Target Compatibility Scorecard (Continued)

Directions

1. List all criteria that would characterize a best-fit strategic partner. This should be an interactive exercise and help enforce consensus on intentions articulated in the Goal Statement.
2. Weight these criteria on a scale of 1 to 10, assigning point values that total 100. The higher the score, the greater the weighting.
3. Check "yes", "no", or "unknown" for each attribute.
4. In the scoring column, assign the number of weighted points for a "yes" response and 0 points for a "no" or "unknown" response (e.g., if a criterion is worth 5 points and the partner meets the criterion, you would check the "yes" box and then place a 5 in the "score" column).
5. Final score equals the total value of "yes" responses.
6. Anything you score as "unknown" should be revisited – by the time you are finished filling out this scorecard for each partner, you should have no "unknowns" left.
7. You will need to determine a minimum percentage of accountability for a strategic partner to still meet your criteria (e.g., anything scoring less than 75% – does not qualify for further exploration). For any score that comes in under this amount, you should either remove that partner from consideration or conduct additional due diligence to complete an unknown area (since an "unknown" can become a "yes", thereby improving a total score).
8. Compare facets and scores of strategic partners under consideration.

Reminder! This scorecard serves dual purposes. In addition to assessing partners' potential, it can also serve as a due diligence checklist, highlighting any unknown variables for further research. As a result, you may want to revisit this tool as you build and refine your strategic partnership or acquisition process.

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING (CONTINUED)

Tool #4: Partner or Target Comparison Template

Overview

What is it?
A weighted scorecard that provides apples-to-apples comparisons across all partner or target options. This template is organized by region, but you could just as easily organize it by market or another high-value criterion.

Why should you use it?
It will help you draw easy comparisons across all potential opportunities, weigh the benefits and drawbacks each one presents, and draw conclusions on which companies to engage first. You can also use it as a presentation tool, since its straightforward layout will be easy for your colleagues to follow.

Assign a weighted value to each category.

Include highest-rated criteria from the Partner/Target Compatibility Scorecard.

Partner Comparison Template

Weights	0.05	0.35	0.15	0.25	0.05	0.15	1
A. North America							
Partner Options	**Size of Company (Revenues in USD)**	**Interest in Collaboration**	**Market Reach (Global=High; Local=Low)**	**Key Criterion 1**	**Key Criterion 2**	**Key Criterion 3**	**Total Weight (100%)**
Company 1	2	4	5	5	4	4	4.3
Company 2	4	3	0	5	3	4	3.3
Company 3	3	2	2	4	2	3	2.7
B. Europe							
Partner Options	**Size of Company (Revenues in USD)**	**Interest in Collaboration**	**Market Reach (Global=High; Local=Low)**	**Key Criterion 1**	**Key Criterion 2**	**Key Criterion 3**	**Total Weight (100%)**
Company 1	5	4	4	4.	4	4	4.2
Company 2	3	3	3	4	4	3.	3.4
Company 3	2	1	1	3	2.	3	1.9

List all partners or targets under consideration.

Score each category based on a 0 to 5 scale (see key).

Assign a final average score based on each weighted criterion.

Scoring Key

0	Unacceptable
1	Very weak
2	Weak
3	Neutral/Average
4	Strong
5	Very strong

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP ONE: DEVELOPMENT PLANNING (CONTINUED)

Tool #5: Partner or Target Due Diligence Guidelines[45,46]

Overview

What is it?
A list of questions to guide your research on a well-aligned, high-fit, and interested strategic partner or acquisition target.

Why should you use it?
It will help you build your business case for the partnership or acquisition. Your legal team will likely conduct a more comprehensive (and costly) due diligence during negotiations, but this high-level exercise will help you avoid wasting those resources on an unpromising candidate.

Due Diligence Guidelines
Partner/Target: _____

1) Who should manage the due diligence process?
2) What, if any, internal initiatives will we have to cancel, scale back, or delay in the interest of pursuing this partnership?
   a. What are the potential costs of those tradeoffs?
   b. What is the potential cost of a competitor engaging in a partnership with this company if we do not?
3) What impact will this partnership have on our firm's share price and earnings per share?
4) How have the partner's products or services performed recently?
5) What opinion do suppliers, customers, and analysts have of the partner?
6) How much in value does this partnership put at risk (e.g., risk to shareholder value, company share price)?
7) Would this partnership create a new competitor with access to our core skills?
8) Would the partnership affect the competitive position of our other businesses?
9) What is the scope of legal liabilities (i.e., where, who might be affected, and what size might the liability be)?
10) How will banks, investors, funds, employees, customers, suppliers, and unions react to the partnership?
11) What will be the range of governance and control (i.e., who is accountable, who has authority, who has responsibility)?
12) What will be the degree of obligations and rights (i.e., what are the penalties, the rights, and the arbitration and divorce procedures)?
13) What will be the impact on our company from partnership compensation, structure, rewards, etc.?
14) Would the partnership violate any antitrust laws?
15) Do the partner's facilities/sites or product lines face any legal or regulatory liabilities?
16) How well established, and how trustworthy, is the legal system in the partner's home country?
17) Who would hold the balance of power (us or the partner) in the following categories?
    - Product or process technology
    - Brand ownership
    - Channel control
    - Manufacturing capacity
    - Ability to invest in the business
    - Local relationships (such as regulators)
    - Global relationships (such as global suppliers or customers)
    - Management control
18) What are the corporate formalities and laws in the partner's home country that would impact our relationship?
19) What are the worker participation rights in the partner's home country?
20) Will local laws restrict the percentage of foreign ownership or mandate a specific level of local control?
21) Will local law require government approval of initial or subsequent investments, withdrawal of funds, or conversion of payments into other currencies?
22) Will we be able to protect our intellectual property?

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP TWO: EXECUTIVE BUY-IN PLANNING

Tool #1: Business Case Template[47,48]

Overview

What is it?
A template that can help you write a business case in support of a high-opportunity emerging technology.

Why should you use it?
It will help you organize your findings and your argument for why a new technology is a good investment. It will also help you standardize all submitted business cases, which will ensure fair standards across all submissions and make it easier for the reviewing committee to conduct apples-to-apples comparisons across all requests for funding.

Business Case Template

A. Proposal Summary

Lead with a high-level overview of your proposal (and keep it brief: no more than a page).

- Project Title
- Industry
- Internal Sponsors
- Project Leads
- Objectives
- Customer Problem
- Solution Description
- Technical Innovation
- Business Value
- Intellectual Capital
- Market Opportunity
- Targeted Customers
- Schedule
- Project Requirements

B. Proposal Content

The analytical tools provided on previous pages will help you answer many of these questions.

- **Industry**
  - What gaps does this technology address?
- **Description**
  - How does this technology solve a customer problem or address a market opportunity?
- **Technology**
  - What differentiates this technology from what is available today?
- **Opportunity**
  - What is the potential market opportunity for this technology over the next 3 to 5 years? Is it global?
- **Competition**
  - What is the competitive landscape?
- **Path to Market**
  - What is the path to market (e.g., services engagement, licensing, partnerships)?
- **Project Expense**
  - What is the human capital commitment per quarter (provide a task-level description for each headcount, as well as required software, hardware, and services)?
- **Measurement**
  - Given the budget we have set, what results can we expect?
  - What can we measure?
  - What will constitute success?

Reminder! For more detail on how to write a business case for a new technology innovation, please review Growth Team Membership's Best Practice Guidebook on IBM's collaborative innovation process.

Phase 4: Commercialization Planning

Step	Development Planning	Executive Buy-In Planning

STEP TWO: EXECUTIVE BUY-IN PLANNING (CONTINUED)

Tool #2: Organizational Alignment Audit

Overview

What is it?
A diagnostic that can help you pinpoint key strengths or ongoing barriers to executing your technology strategy. (Use this tool in conjunction with the Goal Statement.)

Why should you use it?
This audit will pinpoint areas where commitment to a technology's commercialization may be slipping; you can then make necessary corrections.

Organizational Alignment Audit (Sample)

Alignment Statement	Score*	Relevant Tools
We understand the relationship between technology investments and our top-line revenue growth goals.	3	Goal Statement
Our organization acknowledges and rewards creativity and innovation.	5	Innovation Culture Scorecard
Our senior executives are committed to investing in emerging technologies.	5	Goal Statement Business Case Template
We categorize customers according to their willingness to adopt a new technology.	4	Customer Segment Profiling Template
We understand our customers' higher-level needs.	3	Online Listening Guidelines Voice of the Customer Interview Template
We understand which of those needs are most important to influencing purchase decisions.	1	Voice of the Customer Prioritization Guidelines Satisfaction/Importance Matrix
Our capabilities enable us to meet all of our customers' current and/or emerging technology needs.	1	Portfolio and Pipeline Assessment Checklist Strategic Capabilities Audit
We base technology evaluation decisions on the technology's long-term potential to change the market.	5	Scenario Planning Template Commercial Indicators Checklist Applications Evaluation Template
We carefully consider each technologies' projected risks and rewards.	5	Risk Assessment Checklist Strategic Options Grid
We follow a systematic process for evaluating all partner or acquisition targets, searching for those most capable of efficiently and profitably moving our technology strategy forward.	3	Partner or Target Compatibility Scorecard Partner or Target Comparison Template Partner or Target Due Diligence Guidelines
We base licensing decisions around a specific set of criteria geared toward facilitating widespread, long-term adoption of a technology.	5	Patent and Licensing Checklist

***Scoring Key**

1	*This statement does not describe our company.*
3	*This statement partially describes our company.*
5	*This statement accurately describes our company.*

END NOTES

Growth Process Toolkit

Technology Strategy

END NOTES

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