

A Forrester Total Economic Impact™ Study Prepared For IBM

Capturing And Communicating The Broader Impact Of Transformational Technology

Measuring The Total Economic Impact Of IBM Smarter Planet Solutions — Multicompany Analysis

Project Director: Balal Ahmed

Contributor: Jon Erickson

September 2011

FORRESTER

Headquarters | Forrester Research, Inc.
400 Technology Square, Cambridge, MA 02139 USA
Tel: +1 617.613.6000 | Fax: +1 617.613.5000 | www.forrester.com

Forrester Consulting
Making Leaders Successful Every Day

TABLE OF CONTENTS

Executive Summary.....	2
Research Highlights	2
Disclosures.....	4
TEI Framework And Methodology.....	5
Analysis.....	7
Operational Value	10
Brand Value.....	12
Strategic Value	15
Societal Value	20
Conclusion	25
Appendix A: User Survey	26
Appendix B: Total Economic Impact™ Overview	27
Appendix C: Expanding The View Of Value For A Smarter Planet.....	28
Appendix D: Glossary	29
Appendix E: Endnotes	30

© 2011, Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. For additional information, go to www.forrester.com.

About Forrester Consulting

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit www.forrester.com/consulting.

Executive Summary

In June 2011, IBM commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by deploying Smarter Planet solutions. The purpose of this study is to provide readers with a summary of the analysis and to provide a framework to evaluate the potential financial impact of Smarter Planet solutions on their organizations, based on interviews with existing Smarter Planet customers as well as a cross-industry market survey around how organizations are incorporating value into the business case.

Every aspect of the enterprise is increasingly dependent on the technology it uses, from process application-driven business operations to Internet-based interactions with customers and suppliers.¹ The advancement and pervasiveness of technology has allowed technology investments not only to create expanded value inside the organization but also to enable a broader set of value that goes outside their organization. At the same time, business leaders are more and more expanding their view of how value is created. Michael Porter and Mark Kramer, for example, describe the need for businesses to create what they call “shared value” — economic value that also creates value for society.² Increasingly, businesses will be required to account for a wider range of value when making all types investments — none more than for investments in technology. Organizations that do not will risk missing opportunity to create a wider range of value with their IT investments, losing ground against their competitors.

This study will explore how high-performing organizations are using transformational technology — technology investments that create change of exceptional scope and scale — not only to drive revenue and operational cost savings but also to generate, assess, and communicate brand, strategic, and societal value. As part of this analysis, Forrester Consulting set out to answer some basic questions around how different types of organizations measure and communicate the expanded impact of technology. These include:

- Has there been a shift in the way organizations see the value of their strategic technology investments?
- What are some of the ways organizations tell the broader value story?
- Is there a relationship between organizational performance and the way organizations look at technology impact?

To answer these questions, Forrester Consulting took a multistep approach in understanding how and if organizations are looking at the broader impact of technology. Through a combination of in-depth interviews and a cross-industry survey of 145 business and IT leaders within North America for the energy and utilities, retail, and healthcare industries, Forrester Consulting uncovered cases where the expanded value story constituted a key part of the business case as the investments became more transformational to the organization.

Research Highlights

The analysis concluded the following:

- Best-in-class organizations factor in a broader range of value at the business case for transformational technology investments.³
- Best-in-class organizations actively evaluate the impact of these investments qualitatively and, where possible, take steps to translate this impact into quantitative terms.
- Best-in-class organizations communicate this expanded technology impact to roles internal and external to the organization.

The intent of the analysis is not to provide an exhaustive view of the current state of value measurement but rather to highlight how organizations are looking beyond the traditional areas of impact to assess the value of their technology investments. This document is meant to provide organizations broadly, and CEOs and CIOs specifically, with a way to understand how their peers are tying measurement of transformational technology investments to the organization's wider goals and strategy. This study will use specific case studies and broader market data to illustrate how companies are measuring and communicating the expanded value story, and posit recommendations for business leaders to begin to assess and communicate this value.

Key Implications And Recommendations

CEOs and CIOs need to look more holistically at the value they expect to create with their organization's investments in IT by considering the impact of their IT investments on their organization's brand, strategy, as well as external organizations and society at large. To do so, they need to determine the drivers of brand, strategic, and societal value that their organization creates, and determine how IT does or could potentially activate those drivers. In addition, they need to communicate this expanded value story across and beyond the organization.

Related Research

This research is part of a broader view of what Forrester identifies as "external stakeholder impact." Four underlying trends are forcing organizations to expand the way they view technology impact:⁴

- **New technologies.** There are technologies that are designed to deliver value to outside constituents. One example is an online trading organization invested in virtual communities to share trade tips in order to drive online trading activity. In another case, a pharmaceutical company invested in a customer relationship management (CRM) system that delivered diagnosis reporting tied to treatments administered, providing critical intelligence to ensure that doctors were prescribing the correct treatment to their patients.
- **Technology combined with services.** Large global providers, such as IBM, are moving away from selling individual products to delivering the value of products bundled with services. Through IBM Smarter Planet, ideas like smarter retail, which builds intelligence into the entire retail system, enable retailers, manufacturers, and suppliers to eliminate inefficiencies and waste at every step of the value chain. Another example is smarter reservoir management, which makes use of sensors embedded across pipes, pumps, and entire oil fields, generating data that can be compared against historical trends and applied to help optimize well performance. Underlying some of these solutions are machine-to-machine (M2M) devices — RFID chips and sensors — that connect physical objects to communication networks, extending the reach of these investments.
- **Market demands.** Regulatory pressures and changing customer expectations mean that organizations in retail, financial services, manufacturing, and pharmaceuticals need to provide a high level of transparency into their business practices. The Sarbanes-Oxley Act of 2002 requires specific financial reporting and audits by independent parties. Retail food consumers are factoring in how and where food products are produced, prompting retailers to communicate the provenance of their products. Companies are increasingly accountable for their goods from sourcing to performance, stretching both supply chain and post-sale tracking and reporting.
- **Proactive business strategies.** CEOs from large global organizations have moved corporate responsibility and sustainability from being an aspirational goal to a strategic business initiative.

The findings of this research indicate that organizations vary by size, geography, and industry on the maturity of identifying and measuring the broader value picture of their technology investments. Throughout this document, Forrester will provide recommendations for readers based on our research to become more mature in measuring the wider impact of technology value.

Disclosures

The reader should be aware of the following:

- The study is commissioned by IBM and delivered by the Forrester Consulting group.
- Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers should use their own estimates within the framework provided in the report to determine the appropriateness of an investment in IBM Smarter Planet solutions.
- IBM reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.
- The customer names for the interviews were provided by IBM.

TEI Framework And Methodology

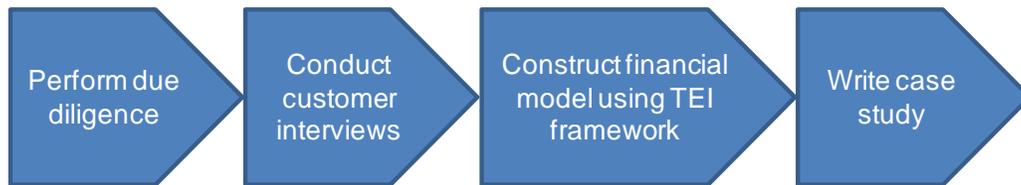
Approach And Methodology

Forrester took a multistep approach to evaluate the impact that IBM Smarter Planet solutions can have on an organization. Specifically, we:

- Interviewed IBM industry thought leaders, product development, marketing, and deployment personnel and Forrester analysts to gather data relative to IBM Smarter Planet solutions.
- Conducted four studies on organizations currently using IBM Smarter Planet solutions. These were in the areas of:
 - **Information exchange in healthcare.** According to IBM: “In healthcare today, components, processes, and participants that make up the vast healthcare system aren’t connected. Duplication and handoffs are rampant. Deep wells of lifesaving information are inaccessible. A smarter healthcare system starts with better connections, better data, and faster and more detailed analysis.” For this analysis, Forrester examined the potential impact of an investment in connecting patient data through the IBM Smarter Planet solution, creating a health information exchange (HIE) for a leading healthcare provider in the US and connecting 16 of its hospitals.⁵
 - **Business intelligence (BI) in law enforcement.** According to IBM, “In recent years . . . city managers, police chiefs, fire chiefs, and other officials have made strides in applying innovative, community-based approaches and new technologies to help reduce urban crime and improve emergency response.” For this analysis, Forrester examined the potential impact of an investment in Cognos Business Intelligence on a North American municipal law enforcement agency.⁶
 - **Service-oriented architecture (SOA) in telecoms.** Global telecommunication providers are trying to fundamentally change the way they deliver products and services to their customers, partners, and suppliers. Having faster time-to-market for telecommunication providers is vital for protecting and expanding market share. For this analysis, Forrester examined the potential impact of an investment in an SOA-based service creation and delivery platform within a global telecommunications provider.
 - **Retail analytics.** Creating a rich customer experience is fundamental in being successful in the retail industry. Traditional marketing strategies employed by most choose to focus on building a community of shoppers loyal to both the brand and the company. For this analysis, Forrester examined the potential impact of an investment that would create a multichannel social commerce platform for a leading online outdoor goods retailer, using IBM Smarter Planet solutions.
- Conducted a survey of 145 business and IT leaders who are decision-makers for technology investments, managers of technology, and users of technology. The data from the survey clearly showed operational impact from technology investments was the core pillar of the business case; however, those organizations that were substantially or slightly better than their peers financially did include and evaluate broader value such as brand, strategic, and societal impact from their technology investments.
- Constructed a financial value model representative of the interviews using the extended Total Economic Impact™ (TEI) methodology. The financial model is populated with the benefit impact analysis obtained from the interviews.

Figure 1

TEI Approach



Source: Forrester Research, Inc.

Forrester employed four fundamental elements of TEI in modeling IBM Smarter Planet solutions:

1. Costs.
2. Benefits to the entire organization and benefits that go outside the organization.
3. Flexibility.
4. Risk.

Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves the purpose of providing a complete picture of the total economic impact of purchase decisions. Please see Appendix B for additional information on the TEI methodology.

Analysis

As part of the study, Forrester examined what types of impact organizations use as part of justifying transformational technology investments. Figure 2 shows data from the survey: the breakdown across retail, energy and utilities, and healthcare industries and best-in-class organizations across all three industries. “Best in class” are organizations that are financially outperforming their peers. The data indicates that expanded or indirect impact plays a secondary but important part in the business case, including impact to brand and society and communities.

Figure 2

Survey Findings — What Areas Do You Typically Include As Part Of Your Justification? (Selected Industries)

	Retail	E&U	Healthcare	Best in class
Impact to internal operations	3 rd 71% 	1 st 80% 	2 nd 73% 	3 rd 75% 
Impact to revenue/margin	1 st 88% 	1 st 80% 	1 st 75% 	1 st 81% 
Impact to customers or clients	2 nd 86% 	2 nd 70% 	3 rd 71% 	2 nd 80% 
Impact to organization's reputation or brand	5 th 55%	3 rd 60% 	6 th 45%	5 th 56%
Impact on partners & suppliers	6 th 37%	4 th 50%	7 th 31%	7 th 38%
Impact on the environmental	7 th 29%	5 th 40%	9 th 22%	9 th 26%
Impact on society/communities	7 th 29%	5 th 40%	8 th 29%	8 th 35%
Impact on organization's ability to adapt to change in competition	4 th 59%	4 th 50%	4 th 57%	6 th 54%
Impact on organization's ability to adapt to customer needs	3 rd 71% 	2 nd 70% 	5 th 53%	4 th 63%

Key:  1st Priority  2nd Priority  3rd Priority

Base: 150 North American business and IT leaders within the energy and utilities, retail, and healthcare industries (multiple responses accepted)

Source: June 2011 Forrester Consulting Technology Impact Survey

The results of the interviews and survey allowed Forrester to validate several of the themes identified during the research process. Forrester found that the use of Smarter Planet solutions allowed the organizations to realize benefits across multiple areas that create business value. These included:

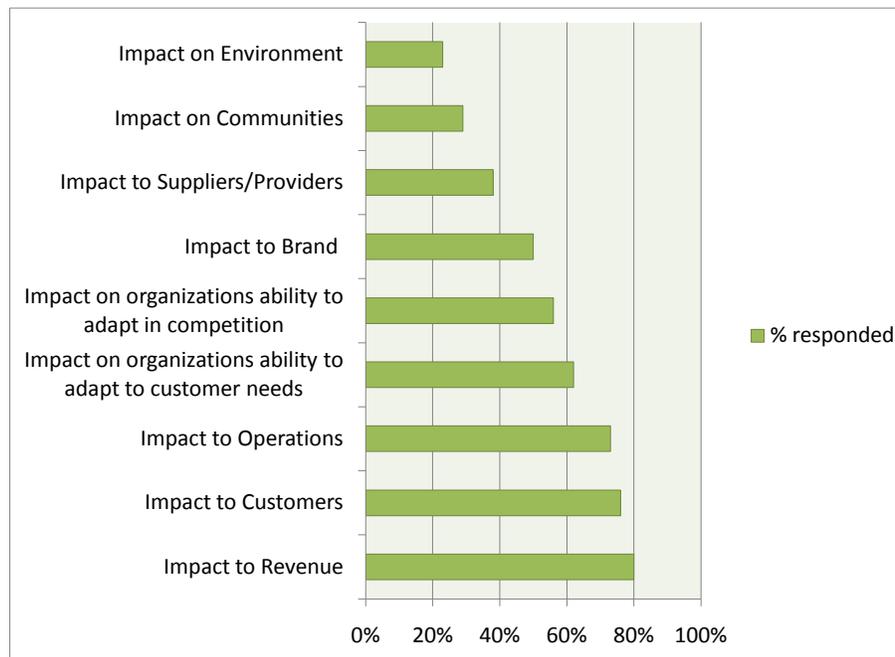
- Operational value: improvement in existing operations or the creation of new capabilities.
- Brand value: strengthening the overall brand and increasing reputation and influence.
- Strategic value: positioning the organization for future success through the adoption of new ideas and solutions.
- Societal value: extending value beyond the enterprise or organization into the wider world in which it operates.

Best-In-Class Organizations Consider Brand, Strategic, And Societal Value To A Greater Degree

From the broader survey, Figure 3 illustrates the different areas of impact organizations include as part of their investments in transformational technology. While operational impact and top-line impact are the most common measures, organizations do include a wide variety of other measures, including both internal and external measures.

Figure 3

What Areas Do You Typically Include As Part Of Your Justification?



Base: 150 North American business and IT leaders within the energy and utilities, retail, and healthcare industries (multiple responses accepted)

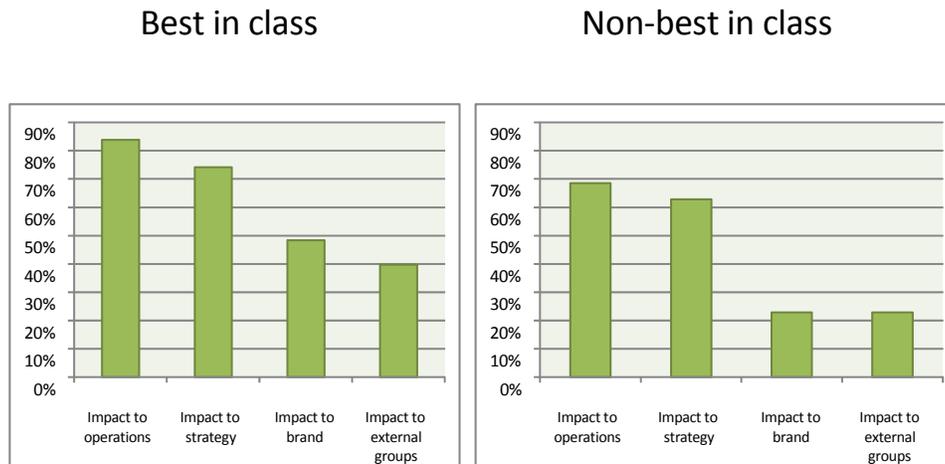
Source: June 2011 Forrester Consulting Technology Impact Survey

If we break this out between two groups — best-in-class and non-best-in-class organizations — there is an interesting distinction between those best in class and not best in class. While on the whole the two results appear similar, there is a slight emphasis of best-in-class organizations on non-operational impacts, compared with non-best-in-class ones. Figure 4 illustrates the differences.

What this data highlights is that while operational impact is an important factor in justifying transformational technology, other metrics contribute to the overall story. In addition, best-in-class organizations use the broader value story more than their peers.

Figure 4

What Areas Do You Typically Include As Part Of Your Justification? (Best In Class Versus Non-Best In Class)



Base: 123 North American best-in-class and 27 North American non-best-in-class business and IT leaders within the energy and utilities, retail, and healthcare industries (multiple responses accepted)

Source: June 2011 Forrester Consulting Technology Impact Survey

While operational impact still remains important for both best-in-class and non-best-in-class organizations, other metrics are an important part of the overall value story.

Business And IT Leaders Consider A Variety Of Drivers And Metrics For Brand, Strategic, And Societal Value

So how do organizations incorporate operational and non-operational impacts into their justification of transformational technology investments? As part of our research with organizations within healthcare, retail, law enforcement, and telecommunications, several key themes emerged around how these organizations approach making the case for transformational technology investments, which are echoed as part of the broader survey.

- For operational impact, organizations across industries tended to use a combination of several key metrics, including productivity, workflow improvements, cost avoidance, and impact to P&L. This matches the responses from the cross-industry survey, where 80% of respondents noted they used improved staff productivity as a measure of operational impact, 78% noted improved process/workflow efficiency, 63% noted reduced capital cost/capital cost avoidance, and 68% noted improved operating profit.
- For brand impact, the metrics used to convey value tended to focus on tying improvements in brand awareness to tangible improvements in customer revenue and value. Respondents from the cross-industry survey noted similar metrics, including 85% who noted they use increased customer satisfaction, 77% who used increased customer loyalty and satisfaction, 38% who used increased share of wallet, and 75% who used brand awareness.

- For societal impact, specific examples among the interviewed organizations tended to be broader and varied widely by vertical industry. Of the respondents to the cross-industry survey who noted they include societal impact, there were several common metrics, including reduced waste (46%), improved social outcomes (90%), and reduced CO₂ emissions (31%).
- Strategic impact tended to mirror societal impact in that its outcomes tended to vary by organization and industry. However, the respondents to the cross-industry survey who noted they include strategic impact referenced several common metrics used to measure impact, including improved market share penetration (71%), improved business innovation(58%), improved service distribution(60%), and increased market distribution (44%).

Using operational, brand, strategic, and societal value as our starting point, in the next section, we will look at how organizations are assessing and communicating this expanded set of value as part of the business case for transformational technology investments. While operational value will always be the core of any business case for IT, for the purposes of this report, we will explore how transformational technology investments create additional value and how that value is communicated.

Operational Value

Operational value improves existing operations or creates new operational capabilities. Operational value can accrue not only to an organization but also to its constituents or customers and related organizations, such as industry partners, government agencies, nonprofits, or universities. Operational value is measured by operational metrics such as reporting cycle times and by their direct business impact in terms of revenue, cost, or asset utilization.

Creating Operational Value Within Retail

An online retail provider in the US embarked in creating a multichannel, social commerce platform. The goal was to create a seamless, interactive, community shopping experience across every sales channel, blurring the lines between Web, retail, mobile, catalog, call center, and kiosk, taking the best of each channel, and making it possible across all channels. The multichannel capability also provided the online retailer in-store sales associates and call center agents with the tools they need to provide more interactive and insightful support to customers.

Table 1 shows one of the key benefits that came from this new capability was insight into delivery cancellation due to lack of inventory visibility. The benefit is calculated with the number of online deliveries in 2008. The model assumes 30% of cancelled deliveries due to lack of stock inventory, and an improvement through the new investments of 20% — avoiding 6,000 delivery failures.

Table 1

Improved Operational Efficiency — Retail

Ref.	Description	Value
A1	Number of online deliveries in 2008	100,000
A2	Percent of deliveries cancelled due to lack of inventory visibility in 2008	30%
A3	Number of deliveries cancelled due to lack of inventory visibility in 2008	30,000
A4	Percent reduction of delivery failure due to improved inventory visibility through Smarter Planet solution	20%
A5	Number of reduced delivery failure due to improved inventory visibility through Smarter Planet solution	6,000

Source: Forrester Research, Inc.

Creating Operational Value Within Law Enforcement

The law enforcement agency invested in Cognos Business Intelligence. In assessing the benefits associated with improved analytics, the organization noted that even though the greater community received the majority of the positive impact from the use of Cognos, it was also able to achieve positive process improvements around processing and analyzing crime data. Table 2 illustrates the estimated process improvement savings from the use of the Cognos solution.

Table 2

Improved Operational Efficiency — Law Enforcement

Ref.	Description	Calculation	Value
B1	Number of FTEs (full-time equivalents)		4
B2	Hourly cost per FTE		\$63
B3	Percent of time spent aggregating and processing analytical crime data		20%
B4	Estimated reduction through process automation		30%
B5	Hours per year		2,080
B6	Total annual cost reduction	$B1*B2*B3*B4*B5$	\$31,450

Source: Forrester Research, Inc.

Brand Value

Brand value is created with technology investments by, for example, demonstrating thought leadership or improving customer experience, resulting in the ability to influence a marketplace or public agenda, attract talent and investment, or charge a brand premium.

Creating Brand Value Within Retail

Retail organizations are under intense pressure to differentiate themselves both in terms of products and delivery of those products to customers through traditional and online channels. As a result, investments in transformational technology are seen as a way to move away from a pure transactional model to create more of an experience for customers, improving the way customers and prospects interact with the organization and ultimately improving the customer perception of the retail organization.

An example of how a retail organization told the broader value story around a transformational IT investment comes from an online sports retailer. In 2007, the organization saw the need to differentiate itself in an increasingly crowded market. The organization appealed to a younger, technologically savvy customer and wanted to specifically drive customer loyalty and brand awareness by creating a new transaction platform that leveraged community and social media technologies to bring and influence customers around specific products. The result was an enhanced online customer experience, increasing the overall brand value through greater site conversion, improved repeat customer retention, and ultimately, higher revenue. For the organization, the business case was based in part on a combination of qualitative and quantitative improvements. Table 3 illustrates the steps taken in illustrating how value was created through the investment.

Table 3

Measuring The Impact Of Brand Value — Retail

Goal	Metric	Monitoring	Measurable outcomes	Stakeholders
Improve customer experience.	Customer satisfaction	Measure baseline experience prior to investment.	Number of online interactions, time active on-site, number of comments/feedback	Internal sales and marketing, executive management
Increase revenue per repeat customer.	Share of wallet	Measure baseline revenue prior to investment.	Purchases per customer per year, average revenue per purchase	Internal sales and marketing, executive management
Increase revenue per sale.	Share of wallet	Measure baseline revenue prior to investment.	Percent increase in average online sale, average items purchased	Internal sales and marketing, executive management

Source: Forrester Research, Inc.

Creating Brand Value Within Healthcare

Table 4 illustrates the additional brand impact qualitatively from the investment in the HIE for the regional hospital network. Specific brand benefits affected by the investment in the HIE included the ability to leverage the learnings of the success of the HIE to other regional health networks.

Table 4
Measuring The Impact Of Brand Value — Healthcare

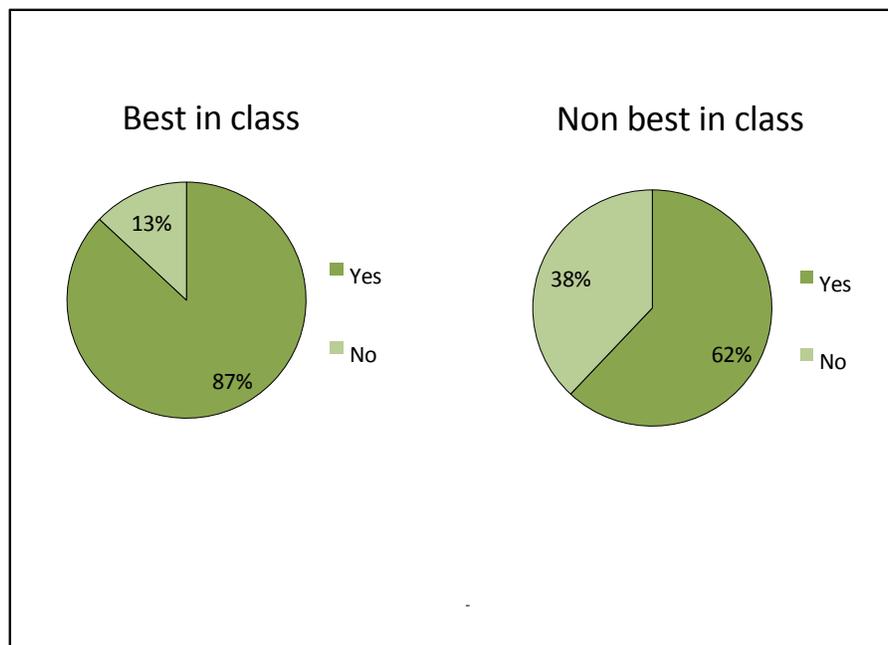
Goal	Metric	Monitoring	Measurable outcomes	Stakeholders
Accelerate the creation of additional regional HIEs based on existing lessons learned.	Number of additional HIEs created regionally over a given year	Create a mechanism to share lessons learned with other interested regional networks.	Number of additional HIEs created	Citizens, hospitals, state government
Create an incentive for increased regional broadband usage.	Physicians accessing and updating patient data from their homes Patients accessing specific areas of their EMR to perform processes such as appointments, e-prescription from their homes	Track physician location to broadband density; monitor patient record activity. Track patient location to broadband density; monitor patient record activity.	Growth of broadband in rural areas	Citizens, state government
Drive best practice, thought leadership in the medical industry.	Having a greater influence on state and federal health IT policies Frequency of interactions with other US regions in knowledge transfer	Track policy activity around HIE.	Number of references that cite HIE	Hospitals, US government

Source: Forrester Research, Inc.

Brands can be one of a company's biggest assets. An Interbrand/J.P. Morgan study found that for major multinationals, brands account for more than one-third of shareholder value.⁷ Organizations in the Forrester survey were asked if they would invest in transformational technology that creates intangible value, greater than tangible value in the near term. The results suggest a strong appetite across industries to invest in investments that may have indirect returns. Eighty-seven percent of best-in-class organizations would invest in transformational technology with intangible value greater than tangible value in the near term. Figure 5 shows data from the cross-industry data survey.

Figure 5

Would You Invest In Technology Investments That Have Greater Intangible Value?



Base: 87 North American best-in-class and 30 North American non-best-in-class business and IT leaders within the energy and utilities, retail, and healthcare industries

Source: June 2011 Forrester Consulting Technology Impact Survey

Brand value is difficult to articulate, especially when technology business cases are being scrutinized for tangible returns. And while both of the examples above highlight the difficulty in placing a quantitative value on the impact of transformational technology on brand value, they do suggest ways that organizations can translate brand impact into tangible, financial returns.

Recommendations

The findings of the interviews and survey suggest best-in-class organizations are more willing to see a tie between brand value and investments in technology over the longer term. From our research, we have identified ways organizations that are on different stages of maturity around measuring brand impact can help improve their overall business process. This implies that CEOs and CIOs need to take a holistic view of their business. Among the many things they need to consider are the value of their organization's brand and reputation. What role does technology play in enabling or building the organization's brand?

Begin by identifying which technology investments have a direct or indirect relationship to brand value.

Take a system view. Determine how "intangibles" ultimately impact the bottom line for your organization. What are the drivers of brand value? Which of these drivers are activated by technology? The answer will be different for each organization. A retail organization, for example, may see the primary benefit to its brand through improving its customer experience, driven in part by the customer's online experience. Establish metrics such as number of online

interactions, time active on-site, and number of comments/feedback to determine impact on online experience to measure what drives the online experience (see Figure 4).

Consider how to begin to quantify causal impact. Forrester has used a value chain adopted from Douglas Hubbard to help organizations translate intangible value to tangible value. Start out by using the following logic:

- If something is better, then it is different in some relevant way.
- If it is different in some relevant way, then it is observable.
- If it is observable, then it is countable.
- If it is countable, then it is measurable.

As a result, once it is measurable, a value can be placed as a way of determining impact.

Applied to brand value, consider the value of a green data center project that lowered an organization's CO₂ footprint. In addition to the likely cost savings, publicizing the new project would improve the organization's reputation as one that cares about the environment. How the organization is perceived is relevant to its brand — what enables it to charge a premium for its products and services (it is *relevant*). If the organization conducted studies of its brand perception before and after the announcement, it could determine some measure of how much the project improved its brand (it is *observable*). With the right set of measures in place, the organization can measure the indirect financial impact of an improvement to its brand, that is comparable with any other financial improvement (it is *countable* and *measurable*).

Organizations that have actively quantified the impact of their technology investments to brand are using a variety of techniques to evaluate different technology investments. These include evaluating technology investments as building a portfolio of assets that can build brand value over time. Organizations can manage and quantify the value of the portfolio by using techniques found in the financial community, such as options valuation.

Strategic Value

Investments generate strategic value by preparing organizations for changing markets and competition, helping develop sustainable competitive advantage, preserving strategic options, aiding in building ecosystems or developing new platforms, or helping forge industry standards. Strategic value is driven by innovation, cross-stakeholder and interdisciplinary collaboration.

Creating Strategic Value Within Telecoms

The current global environment for telecoms is generally defined by fierce competition from existing providers and new upstarts hoping to take advantage of deregulation and lower barriers to entry. In this environment, organizations' technology spend must strike a balance between the need to invest in solutions that create short-term shareholder value while at the same time be flexible and scalable to gain competitive advantage. This results in cases where organizations must be able to create value in the short term while providing long-term strategic impact.

A good example of this is a telecom that provides both fixed and mobile services to its customers. The organization undertook a large investment in its application delivery model by moving to an SOA platform to deliver products and services. The telecom provider's retail partners play a crucial role in selling prepaid service from a network of retailers. A critical revenue source is in reactivating services (also known in the industry as reloading). Retail partners are grouped in a tiering system. Each tier is expected to deliver a minimum quota of reloading services each month; the incentive to the partner is in the form of a percentage of the total reload services sold in that month. Before the SOA

investment in creating a Service Provider Delivery Environment (SPDE), payment transaction to partners would take 90 days. The mobile market is fiercely competitive, and a large performing partner network selling mobile services is essential to protect market share, so paying partners as quickly as possible is important. With SPDE functioning, the telecom provider reduced the partner payment cycle to zero days.

The investment in SOA is one example of how telecom organizations are using technology investments to drive strategic value. Table 5 illustrates several additional examples where telecoms are investing in and building the case for strategic investments.

Table 5
Measuring The Impact Of Strategic Value — Telecom

Goal	Metric	Qualifying conditions	Measurable outcome	Stakeholders
Reduce cost of delivery for new products and services.	Development cost per new product or service Maintenance and administration cost per new platform	Measure baseline cost for product rollout.	Reduced cost of development	Internal organization
Improve time-to-market of new initiatives.	Time to deploy new application	Measure baseline time for product rollout.	Improved time-to-deploy	Internal organization, customers
Improve market share through new applications deployed.	Percentage increase in segment market share	None	Increased net revenue from improved market share	Internal organization, shareholders

Source: Forrester Research, Inc.

Creating Strategic Value Within Healthcare

For the investment in the HIE, the organization saw the potential for transforming the way different healthcare providers shared patient information between different constituents. For the initial phases of the HIE, the amount of patient information was limited to individual hospitals. However, as adoption of the HIE increased, additional constituents could receive the benefit of the health exchange. These included individual physician practices and pharmacy exchanges, as well as individual patients accessing their own health records. This innovative approach would allow the organization to drive additional collaboration between groups with the growth of adoption.

Table 6

Measuring The Impact Of Strategic Value — Healthcare

Goal	Metric	Qualifying conditions	Measurable outcome	Stakeholders
Improve overall chronic disease management.	Length of time between hospital visits for chronic patients. Cost to treat and service chronic patients.	Aggregate and analyze existing trends for chronic patients. Track the current time and success metrics for chronic patient care.	Reduced cost, reduced wait time	Hospitals, local government, patients
Ability to attach and update images such as x-rays that can be accessed across the network.	Frequency of images attached and updated on individual patient records on health network. Frequency of image access by physicians on patient records across the health network.	Analyze imaging process to ensure that new/updated images are associated to a patient EMR. Collect activity statistics to see how much imaging is being pulled down by physicians.	Reduced time to access complete medical file	Physicians, patients
Enhance collaboration within network in event of a widespread epidemic.	Number of times hospital shares data (medicine supply, staff expertise). Length of time to control/cure epidemic in region.	Ensure that all hospitals have agreement in working in a collaborative way in such an epidemic scenario.	Reduced incident response time	Hospitals, local government, patients
Provide data for research to medical and academic institutes.	Frequency of request for patient data from drug firms and academic institutes.	Ensure that appropriate controls are in place to aggregate and mask patient records.	Increase in research directly tied to community data	Hospitals, local government, patients, academia, pharma
Provide more efficient integration with payers in processing medical/legal claims/payments.	Number of insurance companies accessing patient data across network. Frequency of activity from insurance companies accessing patient data across network.	Create enough of an incentive-based system to change existing processes.	Reduced patient premiums	Hospitals, payees, patients
Provide more efficient integration with employers in managing employee sickness.	Number of employers accessing patient data across network. Frequency of activity from employers accessing patient data across network.	Create enough of an incentive-based system to change existing processes.	Reduced employer cost	Employers, patients

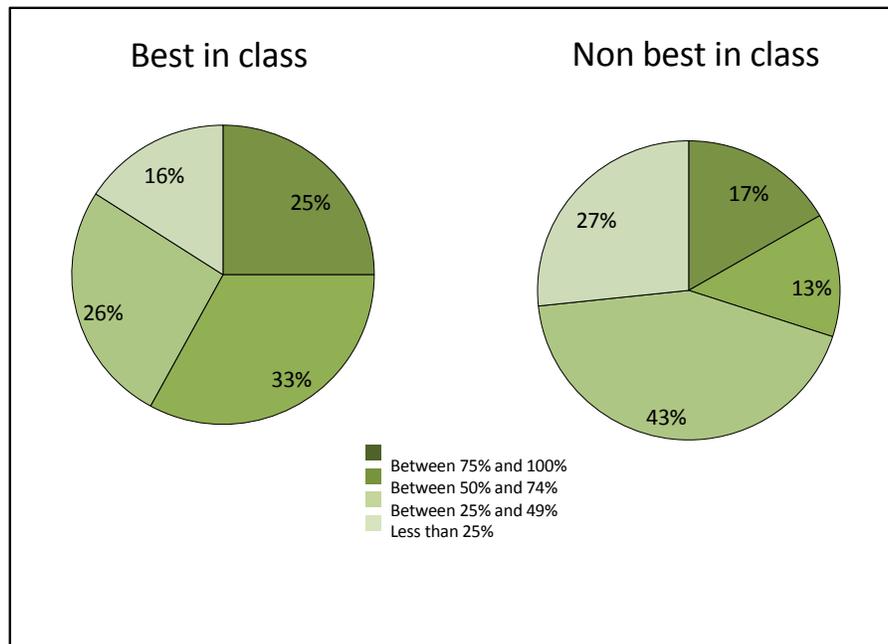
Source: Forrester Research, Inc

Enabling strategic value is vital in ensuring that high-performing organizations continue to perform better than their peers financially. Figure 6 shows data from the broader data survey, the breakdown of the percent of an organization's technology spend directly tied to execution on strategic initiatives. What is interesting from the pie chart below is that the largest share of best-in-class organizations spend between 50% and 74% of their IT spend directly on investments tied to strategy execution. For non-best-in-class organizations, the largest group of respondents spends a smaller share,

between 25% and 50%, on investments directly tied to strategy execution. This suggests best-in-class organizations not only devote a greater share of their IT spend to strategic investments, but equally as important, they also understand and can communicate that relationship.

Figure 6

What Percent Of Your Organization's Technology Spend Is Directly Tied To Execution On Strategic Initiatives?



Base: 88 North American best-in-class and 30 North American non-best-in-class business and IT leaders within the energy and utilities, retail, and healthcare industries

Source: June 2011 Forrester Consulting Technology Impact Survey

Recommendations

When considering an investment in technology, CEOs and CIOs should consider not only their immediate business or technology needs but also their longer-term strategic goals. How can businesses improve their ability to adjust in a fast-changing world? What will be required to execute that strategy, and what building blocks need to be laid today in order to get there? What are the drivers of an organization's ability to deliver on that strategy? Lastly, what role can technology play in enabling the execution of the strategy?

If a strategic aim is to increase market share, what role does technology play in meeting that aim? For a telecom company, market share may be driven in part by its ability to bring compelling new offerings to its customers, which in turn is driven by its ability to improve its time-to-market for delivering these new offerings (see Table 5). Business leaders should identify the drivers of strategic goals and determine the contribution of technology to those drivers.

Build a causal diagram illustrating the underlying drivers of enabling strategy including the role and contribution of personnel, process improvements, and technology.

Create a value chain linking strategy objectives to measurable outcomes. A common path Forrester has seen includes the following steps:

Table 7

The Value Chain Approach To Measuring Strategic Value

Step	Description
Strategic objective	Would include short- and long-term achievable strategic objectives
Specific value goals to achieve	Identifies how the organization measures improvements to strategy
Technology features/functionality	Highlights the contribution of technology to achieve the specific goals
Action	How the technology will be used to achieve these goals
Benefit title	What the results are
Benefit description	Description of the actual benefit created
Usage cases	Description of the circumstances under which the benefits of technology will be achieved
Metric/estimate	Specific metrics which are used to measure improvement
Impact of risk	Measurement and discussion of the impact of risk on benefit estimates

Source: Forrester Research, Inc

We can take the SOA example cited above as a way of illustrating how to create a simple value chain:

Table 8

The Value Chain Approach — SOA Example

Step	Description
Strategic objective	Improve the way the organization delivers products and services.
Specific value goals to achieve	Reduce cost of delivery, and improve time to deliver new products or solutions.
Technology features/functionality	Implement a new SOA delivery platform.
Action reusable and integrated components	Build products or solutions around new delivery platform

Benefit title	Reduce time to deliver product or solution.
Benefit description	Through the use of reusable components, the organization can speed the time to develop and deliver new applications to market.
Usage cases	Every year, the organization delivers between 20 and 40 new products and solutions. It takes on average six months to roll out a new solution. With a new delivery platform, the organization can reduce the effort to deliver by 35% and reuse up to 40% of existing application components.
Metric/estimate	Estimated reduction in time, estimated reduction in cost
Impact of risk	Several factors could reduce overall impact, including lower reuse of existing code, changing business conditions, and longer time to implement new platform.

Source: Forrester Research, Inc.

Organizations that are more adept in measuring the technology impact in achieving overall strategic goals are generally taking a portfolio view of their investments. As with the impact to brand, organizations should look to moving away from qualitative approaches in overall value to a more quantified approach.

Societal Value

The final impact area of impact organizations incorporate into their financial justifications is societal impact. Social impact is unique in that its impact is felt by stakeholders who reside outside the organization and is most often seen as an extension of the value story. However, recent shifts have caused a greater number of organizations to include this area as part of the overall business case. These include the following:

- Organizations are more connected than ever with the outside world. External stakeholders such as suppliers, partners, and customers expect a level of transparency into internal business process. The rise of social media as a competitive differentiator means the technology business case must describe and quantify the impact to these external groups.
- Corporate responsibility and sustainability are becoming integrated into normal business practices. Over the past several years, large global organizations have moved corporate responsibility and sustainability from being an aspirational goal to a strategic business initiative. Technology will play a critical role for organizations in realizing their corporate responsibility and sustainability goals.
- The growth of corporate responsibility and sustainability shows how buyer organizations are responding to measuring and communicating their wider impact on external groups. Technology has a crucial role in enabling these corporate responsibility and sustainability goals.

The American Marketing Association and Fleishman-Hillard collaborated on a survey to gauge perceptions about sustainability from 270 organizations. Nearly three-quarters of those surveyed believe that corporate reputation (73%), corporate culture (69%), and technological advancements (71%) will be the drivers for sustainability. While 73% feel that corporate reputation encourages sustainability initiatives, fewer (60%) feel that marketing considerations encourage the adoption of sustainability practices.

Sustainability is an indicator of how organizations are changing the way transformational investments are evaluated and its value, communicated. Our interviews with organizations in law enforcement and telecom indicate ways to illustrate the broader impact as part of the financial justification.

Creating Societal Value Within Law Enforcement

Reducing crime also has a positive impact on crime-related social service and education programs. Based on public spend statistics, the annual social service and education costs for crime in Canada equates to \$2.4 billion. The model calculates the social services and education costs for crime for the representative city of roughly \$179 million. Assuming a 1% drop in crime correlates to a 1% drop in spending, the total potential savings equates to \$1.7 million, with a final benefit of \$107,803 after the impact of business analytics has been included. Table 9 illustrates the calculation used.

Table 9
Measuring The Impact Of Societal Value — Law Enforcement

Ref.	Description	Calculation	Value
C1	Social services and education costs for crime in Canada ⁸		\$2.4 billion
C2	Percent of population — on 12 target cities with crime figures		57%
C3	Social services and education costs for crime in 12 target cities	C1*C2	\$1,358,648,839
C4	City crime percentage compared with total crime in Canada		13%
C5	Social services and education costs for crime in the city	C3*C4	\$179,671,341
C6	Reduction in crime in the city		1%
C7	Reducing the cost of social services in the city by reducing crime by 1%	C5*C6	\$1,796,713
C8	The impact of BI as part of the crime prevention process		6%
C9	Benefit of reducing social services costs in the city through reducing crime with BI	C7*C8	\$107,803
C10	Total benefit		\$107,803

Source: Forrester Research, Inc.

Creating Societal Value Within Telecoms

Over the past several years, there has been a growing body of research highlighting the economic effects of increasing mobile phone usage in rural or underserved populations. A recent *The Economist* article cited a 2008 study by the World Bank where an “increase of ten percentage points in mobile-phone adoption in a developing country increased growth in GDP per person by 0.8 percentage points.” This correlation illustrates how driving greater mobile adoption may lead to higher overall economic activity in rural populations. For the interviewed telecom organization, its investment in SOA-based investments created a platform to build new types of offerings and services to benefit new segments of the population, such as rural or agricultural communities.

Several key examples can highlight how increases in adoption may drive increases in economic well-being. These include:

- **Bringing goods to market.** Mobile devices provide a platform for farmers in rural areas to gain greater visibility into the price of their goods and services. A 2007 article in *The Quarterly Journal of Economics* cites a case of Indian fishermen using mobile devices to determine which markets had the greatest demand (and highest price) for their goods, improving overall market efficiency. Consumer prices reduced 4% while fishermen's profits increased 8% as a result of the introduction of mobile phones.
- **Reducing transaction costs.** In many rural areas, people have limited options to access telephone- or mobile-based devices. As a result, the hidden cost to travel to gain access to make a call and the direct cost of the call itself limit use. Increasing adoption of mobile phones reduces the cost to access phone-based services while increasing access.
- **Improving agricultural yields.** Mobile phones are seen as a way of gaining access to critical information related to topics like health, finance, or agriculture. One way mobile phones benefit rural poor is by providing a channel to access critical information about farming practices — in one use case, pioneering the process of better usage of fertilizer for rice crops, which is one of the causes of higher rice yield. Providing mobile services that estimate the appropriate level of fertilizer based on current weather conditions can directly improve a farmer's yield.

Over the past 10 years, CEOs have increasingly made delivering value outside their organizations a significant part of their business strategies.⁹ The investment decisions these CEOs drive unleash a chain reaction on their partners, suppliers, customers, and beyond to the environment, society, and governments. Some leading CEOs aspire to deliver value beyond normative levels of sound environmental practices and look to their companies' broader involvement in corporate responsibility and sustainability to deliver positive economic returns for their own business. Examples of these initiatives today are delivering value to:

- **Suppliers and partners.** Carrefour invested in a sustainable development self-assessment online tool that allows food suppliers to assess their operational practices and to access advice. Carrefour audits this activity with a panel of suppliers to validate the results and to suggest areas of improvement. Carrefour sustainability standards are pressuring partners and suppliers to change the way they do business in a more sustainable way.¹⁰
- **Customers.** Oncor installed 1 million smart meters in June 2010, allowing its customers to access real-time energy information to help manage how much energy they use. Worldwide studies demonstrate customers that have smart meters could save 5% to 15% on their energy costs. Oncor's customers could potentially save up to \$250 million annually while reducing their energy consumption.¹¹
- **Environment.** The chairman of Marks and Spencer's (M&S) launched Plan A in 2007, outlining 100 commitments on social, environmental, and ethical challenges facing its business. Plan A has helped M&S reduce its footprint on the environment by reducing carbon emissions from operations by 8%, improving energy efficiency in stores by 19%, reducing waste sent to landfill sites by 33%, reducing the average weight of nonglass packaging on general merchandise by 36% and food by 20% per item, and using 400 million fewer carrier bags than in 2006 to 2007. M&S invested £200 million in 2007 for Plan A; by 2010, it recouped its costs and made £50 million in profit.¹²
- **Society.** The CEO of Globe Telecom has committed, as part of the company's social responsibility strategy, to contribute to the overall advancement of society through expanding its network and infrastructure and developing a diverse set of products, services, and technologies that enable the poor to better prosper. For Globe, the investment in the underlying technology was less about internal cost savings and more about developing

products and services that serve low-income segments — for example, improving adoption and access to microfinance resources to enable a new wave of more prosperous customers.¹³

- **Governments.** The COO of Roche Diagnostics is leading a proactive response to the enormous global challenge of HIV/AIDS and TB. Roche has partnered with national governments and healthcare agencies to provide diagnostics in countries with the most urgent need. This response from Roche has helped ease the strain on already overstretched governmental programs to help fight the HIV/AIDS and TB epidemic.¹⁴

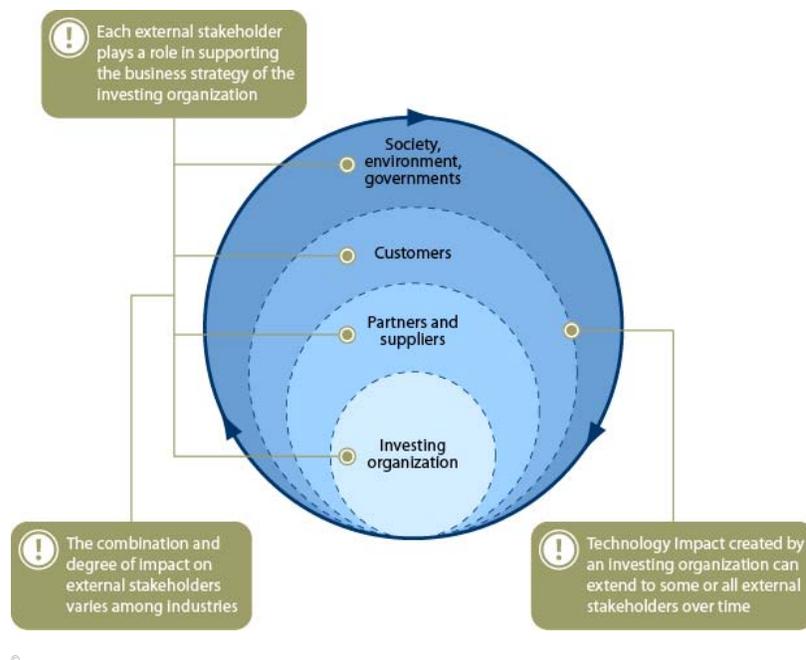
Recommendations

CEOs and CIOs need to think expansively about their impact on society. What is the impact of their activities on the broader society? What is their sustainability or CSR strategy? What are the drivers that determine the organization's ability to execute on these strategies, and what role does technology play in enabling these drivers? How closely is the CIO aligned with the organization's sustainability or CSR strategy? For organizations whose mission is societal in nature, what role does technology play in enabling its mission?

For organizations just beginning to identify the link between technology investments and societal impact, a good first step is to build a common list of external groups and roles that have the potential of being impacted by investments in technology.

Figure 7

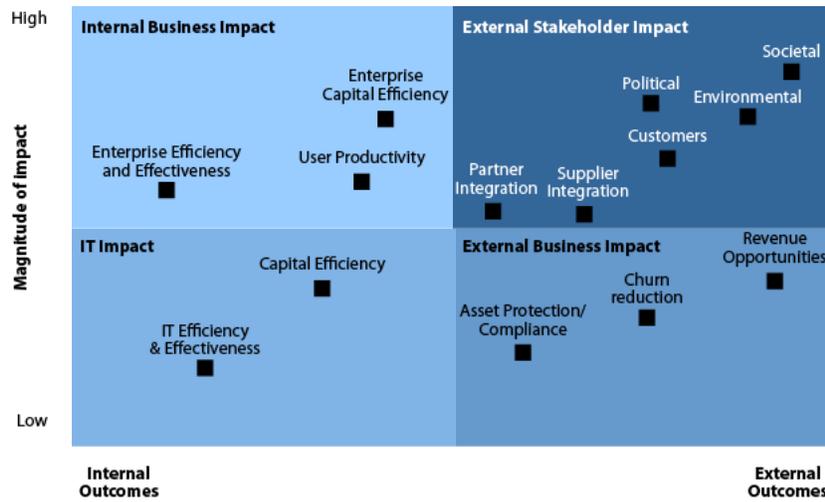
External Impact Defined



Source: Forrester Research, Inc.

Once the roles have been identified, one can identify categories of impact for each of those groups.

Figure 8
Categorizing Stakeholder Impact



Source: Forrester Research, Inc.

This process will allow organizations to begin to identify and quantify societal benefits associated with technology spend.

Once an organization has developed a standardized way of thinking about societal or external impact, the next step is for an organization to have an integrated process to communicate the impact of its technology spend to internal and external stakeholders.

Conclusion

The survey and customer studies have shown a strong indication that high-performing organizations are using transformational technology not only to drive revenue and operational cost savings but also to generate brand, strategic, and societal value. These organizations are taking steps to assess and communicate this value at the business case. By expanding how you think beyond operational impact, it's possible to look at different ways transformational technology impacts financial performance. Specifically, high-performing organizations expand their definition of value beyond just internal operational savings and top-line benefits to include less tangible value such as brand, strategic, and societal value.

This implies that CEOs and CIOs should begin to take a more holistic approach to assessing the impact of IT. CEOs and CIOs who fail to create, assess, and communicate value from IT investments more expansively risk being left behind by their competitors who will be more and more leveraging IT to create and assess a broader range of value for their organizations and society.

Here are a few final recommendations:

Overall

- Understand your current strengths and weaknesses in justifying, measuring, and communicating the impact of transformational technology. What works well? What does not? Compare how IT investments are justified versus nontechnology investments.
- Identify a sample investment where the full impact cannot be captured just by operational savings, and identify what brand, strategic, and societal impact could result from the investment.
- Take a systems view — consider how the impact on one organization, or part of the organization, would ripple out to others.
- Tie role altitude (LOB leader, CxO, senior management) to areas of impact that are relevant to them (operational, brand, strategic, societal).
- Identify which aspects of your organization's long-term strategic goals will need to be enabled by technology, and use that as a basis for valuing investments in transformational technology.

Brand Value

- Start by identifying which investments have a direct or indirect tie to brand value. Create a causality impact of technology to brand either through a causal diagram or by creating a simple value chain.

Strategic Value

- Start by listing out all of the investments that support short- and long-term strategic goals. Again, building a causal diagram is possible to use in addition to a value chain. Begin to think about portfolio management illustrating how transformational investments together can drive business strategy.

Societal Value

- Start by identifying who outside your organization is benefiting directly or indirectly from your technology spend. Build a list of common stakeholders that benefit over the short and long term. Be able to categorize possible areas of outcome and conditions for measuring impact.

Appendix A: User Survey

For this TEI study, Forrester conducted a survey of 145 users who came from the retail, healthcare, energy and utility industries. Clients for both the interviews and the survey were from North America and had annual revenues of at least \$100 million to \$1 billion-plus. The participants from the survey came from the following functions:

- Corporate management (C-level).
- Finance.
- IT.
- Marketing.
- Sustainability/corporate responsibility.
- Operations.
- Sales/customer care.

The data was segmented in four views for analysis:

- **Best in class:** all organizations that selected they were substantially better or slightly better financially than their peers.
- **Non-best in class:** all organizations that selected they were about the same, slightly worse, or substantially worse financially than their peers.
- **Growth performance between 1% and 8%:** All organizations that selected this category had average revenue growth over the past three years of between 1% and 8%.
- **Growth performance greater than 9%:** All organizations that selected this category had average revenue growth over the past three years of greater than 9%.

Appendix B: Total Economic Impact™ Overview

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility.

Benefits

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the form of fully burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

Risk

Risk measures the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections, and 2) the likelihood that the estimates will be measured and tracked over time. TEI applies a probability density function known as “triangular distribution” to the values entered. At minimum, three values are calculated to estimate the underlying range around each cost and benefit.

Flexibility

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprisewide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix C: Expanding The View Of Value For A Smarter Planet

Our world is becoming smarter. By smarter, we mean that intelligence is being infused into the systems and processes that make the world work — into things no one would recognize as computers: cars, appliances, roadways, power grids, and even natural systems such as agriculture and waterways. Trillions of digital devices, connected through the Internet, are producing a vast ocean of data. And all this information — from the flow of markets to the pulse of societies — can be turned into knowledge because we now have the computational power and advanced analytics to make sense of it. With this knowledge, we can reduce costs, cut waste, and improve the efficiency, productivity, and quality of everything from companies to cities.

Working with multiple clients in multiple industries, and based on Smarter Planet client engagements across the globe, IBM has expanded its approach to assessing the value created through these engagements to consider benefits beyond the operational value that is included in a typical ROI.

This approach combines traditional financial ROI measurements — still the core of any investment business case — with an added focus on brand, strategic, and societal value.

The approach takes into account four types of value:

- **Operational value:** improving existing operations or creating new operational capabilities. Operational value can accrue not only to an organization but also to its constituents or customers and related organizations such as industry partners, government agencies, nonprofits, or universities. Operational value is measured by operational metrics and by their direct business impact in terms of revenue, cost, or asset utilization.
- **Brand value:** strengthening overall brand, reputation, and influence. Brand value is created by, for example, demonstrating thought leadership or improving customer experience, resulting in the ability to influence a marketplace or public agenda, attract talent and investment, or charge a brand premium.
- **Strategic value:** positioning the organization for future success and competitive advantage. Investments generate strategic value by preparing organizations for changing markets and competition, helping develop sustainable competitive advantage, preserving strategic options, aiding in building ecosystems or developing new platforms, or helping forge industry standards. Strategic value is driven by innovation, cross-stakeholder and interdisciplinary collaboration.
- **Societal value:** the creation of social, cultural, or environmental benefits. Investments generate societal value by reducing environmental impact or improving social outcomes in areas like public safety, health, and education. These investments extend value beyond the enterprise or organization into the wider world in which the organization operates.

Appendix D: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organization to determine the most appropriate discount rate to use in their own environment.

Net present value (NPV): The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

Present value (PV): The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total net present value of cash flows.

Payback period: The breakeven point for an investment. The point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

A Note On Cash Flow Tables

The following is a note on the cash flow tables used in this study (see the example table below). The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in Years 1 through 3 are discounted using the discount rate (shown in Framework Assumptions section) at the end of the year. Present value (PV) calculations are calculated for each total cost and benefit estimate. Net present value (NPV) calculations are not calculated until the summary tables and are the sum of the initial investment and the discounted cash flows in each year.

Table [Example]

Example Table

Ref.	Category	Calculation	Initial cost	Year 1	Year 2	Year 3	Total

Source: Forrester Research, Inc.

Appendix E: Endnotes

¹ Source: “Business Technology Defined,” Forrester Research, Inc., May 7, 2007.

² For more, see Michael E. Porter and Mark R. Kramer, “The Big Idea: Creating Shared Value,” *Harvard Business Review*, January 2011.

³ The measure of a best-in-class organization was determined by financial performance. As part of the cross-industry survey, Forrester asked respondents how they performed relative to their industry peers. Those respondents who responded better or significantly better were categorized as best in class.

⁴ Source: “Technology Value Beyond the Buyer’s Four Walls,” January 2011.

⁵ Access to full study is available at the following address:

<http://public.dhe.ibm.com/common/ssi/ecm/en/hpw03002usen/HPW03002USEN.PDF>.

⁶ Access to full study is available at the following address:

<http://public.dhe.ibm.com/common/ssi/ecm/en/gvw03023usen/GVW03023USEN.PDF>.

⁷ Source: Jan Lindemann, “Brand Valuation: The financial value of brands,” brandchannel (http://www.brandchannel.com/papers_review.asp?sp_id=357).

⁸ Source: Institute for the Prevention of Crime, Faculty of Social Sciences, University of Ottawa (http://www.socialsciences.uottawa.ca/ipc/eng/cost_of_the_criminal_justice_system.asp).

⁹ Business organizations across all industries are trying to maneuver their organizations toward corporate responsibility and sustainability; this would have been unrealistic only 10 years ago. Source: Sandra Macleod, “CSR is no longer a ‘bolt-on’ activity,” *The Guardian Sustainable Business Blog*, December 10, 2010 (<http://www.guardian.co.uk/sustainable-business/blog/csr-corporate-social-responsibility>).

¹⁰ The supply chain is often seen as low-hanging fruit to drive sustainability practices. Business organizations — like Carrefour — that provide services supported by a large supply chain can enforce sustainability practices that filter out partners and suppliers that do not meet its sustainability criteria. Source: “2009 Annual Activity and Sustainability Report: Becoming the preferred retailer,” Carrefour (http://www.carrefour.com/docroot/groupe/C4com/Pieces_jointes/RA/RA_Carrefour_PDF_WEB_2009VE.pdf).

¹¹ Oncor is one of the world’s leading utility companies in smart meter technologies. With the challenges faced in increased power needs, smart meters are seen as a key lever in influencing customer behavior in how they use energy, by giving them access to energy usage information on how they consume electricity. Source: “Oncor Reaches 1 Million Smart Meters,” Oncor press release, June 2, 2010 (<http://www.oncor.com/news/newsrel/detail.aspx?prid=1266>).

¹² The vision of the M&S chairman in fusing sustainability and corporate responsibility in every aspect in the way they do business is starting to pay dividends, as customers see M&S is significantly differentiated from its competitors. Source: “Your M&S: How We Do Business Report 2010,” M&S (http://corporate.marksandspencer.com/documents/publications/2010/how_we_do_business_report_2010).

¹³ Business organizations that operate in mature markets where price is the only differentiator are finding new markets for growth difficult. The CEO of Globe Telecom, as part of its corporate social responsibility policy, is creating services

and products to serve lower-income segments of the economic pyramid. Globe believes this is a viable commercial opportunity. Source: “Bridging Communities: 2008 Corporate Social Responsibility And Sustainability Report,” Globe Telecom (http://site.globe.com.ph/c/document_library/get_file?uuid=da90c682-5c03-4b23-929a-7add483c05ca&groupId=19543).

¹⁴ A key part of Roche’s business is diagnosing diseases so the correct treatment is given. Roche has been being very proactive in supporting less countries and governments in fighting epidemic diseases, which fuels business and nonbusiness impact for Roche. Source: “Commitment and Care Across the Globe: Making a world of difference in HIV/AIDS and TB,” Roche (<http://www.roche.com/sust-diagnostics-access.pdf>).