Engaging a corporate community to manage technology and embrace innovation

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It has been estimated that approximately 50 percent of technology implementation failures are due to scheduling and budget issues and 27 percent are due to customer dissatisfaction. If typical technology solutions face these odds, how can riskier emerging technology and innovation activities succeed? This paper describes the IBM Technology Adoption Program (TAP), an effort by its technology and innovation team to formalize its innovation management discipline. Instead of using structured governing processes, the program uses an organic approach for accelerating change. TAP is focused on cultivating and harnessing the existing early adopter and innovator communities within the enterprise to shorten the technical development cycle and deliver solutions that engage a variety of users, ensuring rapid, widespread accommodation. We describe TAP in the context of the challenges enterprises face in fostering and measuring innovation, focusing on three key areas: rallying the community, encouraging the technical investment supporting the community, and gauging the priority and value of new technology. We present several examples to illustrate the benefits that materialize from overcoming obstacles and delivering significant innovation.

INTRODUCTION

Innovation represents the single largest opportunity for companies to differentiate their businesses. In recent years, many companies have adopted this view. While the benefits of innovation are self-evident, businesses want to know that investing in it will yield growth.

There are few models for understanding the impact of technology innovation. Innovation faces the same challenges as traditional solution delivery in addition to being plagued by antiquated enterprise management models that further prevent agile information technology (IT) delivery. Innovation

management is often complicated by the unpredictable and disparate nature of the people involved. For companies to be successful, their innovation management strategy has to depart radically from normal IT management systems and rely on them only to facilitate the formal support of offerings which require it. The focus of this paper is to explore innovation management and the challenges a company faces in effectively utilizing innovation to grow its business.

INNOVATION AND DIFFERENTIATION

Over the last few years, innovation has been at the heart of many growth strategies. This trend has been observed in both government and business settings. For example, in April 2004, the United States government took steps to "inspire a new generation of American innovation."[1] The White House's economic policy, as described in Reference 1, is founded on supporting innovation to drive flexibility, advancement and productivity. In 2006, *The McKinsey Quarterly* conducted a worldwide survey of more than 3400 CEOs and found that nearly 25 percent identified innovations in products, services, and business models as the single most important factor in contributing to the acceleration of change in global business.[2] Innovation also plays a key role in corporate IT management.

Businesses need flexibility to identify innovation opportunities and gain competitive advantage; the authors of the McKinsey report point out that few companies spend time strengthening or changing their business to support their innovation message. Innovation is clearly the focus of business leaders, because it offers an opportunity to differentiate a company in the marketplace.

Innovation = growth?

Despite the focus of many companies on innovation that will result in growth, Linder argued that it is difficult to demonstrate that this growth is profitable.[3] One of the challenges in doing so is the difficulty of defining and measuring innovation and impact. Linder therefore offers a set of statistics linking innovation to growth: spending on research and development (R&D) offers measurable returns of 25 to 30 percent; businesses with widely cited and commercialized patents outperform the market by 1000 percent; and new products formally introduced in the *Wall Street Journal* returned an average of more than $115 million.[4] To explore the topic further, Linder analyzed the 3M Co. metric, which looks at the proportion of sales from new products over the previous three years. She demonstrated that it is not a complete metric and is simply one of many such aspects companies might use for insight. Currently, there is no consensus on a single measurement or group of measurements which demonstrate that innovation drives growth.

As Linder posits, increasing the innovation activity in a company should translate into benefits similar to those of traditional R&D. Despite the lack of proper measurements, there is consensus that innovation does influence growth. Innovation certainly represents an opportunity for a business to differentiate itself, offering the opportunity to affect growth.

Challenges to innovation

In any industry, the promotion of innovation that uses IT as an enabler and platform faces challenges in design and delivery. Interestingly, it is people and processes that are usually at the heart of troubled projects.[5] According to Malveau and Mowbray, "... one third of all corporate development projects are canceled. Five out of six projects are considered unsuccessful and unable to deliver desired features. Even average projects have schedule and budget overruns nearly double the original project estimates."[6]

A survey on software project success and failure shows that approximately 50 percent of failures are due to scheduling and budget reasons, while 27 percent fail because of customer dissatisfaction.[7] Given these odds for traditional solution development, riskier emerging technology and innovation activities face even greater challenges.

Innovation management

The IBM Technology Adoption Program (TAP) was created to address the challenges IBM innovators face in developing their work from the design phase to the point at which it can impact products, services and solutions. Well-funded labs manage this transition by having the resources (i.e., people and infrastructure) to support solutions indefinitely, regardless of the solution value, competing priorities, or lack of strategic alignment. This does not apply to innovation that is initiated by individuals outside of R&D labs and projects for which infrastructure may not be available, leading to potential innovation which goes undeveloped, forgotten, and unrealized.

The approach guiding the creation of TAP assumes that there is more innovation produced by more groups and individuals than any traditional IT process can manage. By the time funding is secured and solutions are deployed, the constantly changing needs of the business render today's innovation inadequate or untimely. To continue to approach IT the same way is to guarantee a struggle with the limitations of the current infrastructure. The challenges of simply managing enterprise IT are considerable; innovation management requires a different approach.

The aggressive focus of TAP on nurturing an innovation management community (one that is self-selected and dispersed throughout the enterprise) positions employees as the arbiters of their IT future. With over 80,000 community members engaged in more than 100 offerings, TAP is able to accelerate the transformation of the workplace through collaborative development and evaluation. In its first 10 months, TAP accelerated the development and adoption of two commercial products and three internal deployments.

The program changes the primary role of the CIO from operations manager to that of innovation manager—a fundamental cultural shift. By cultivating a community involved in new and emerging technology, the CIO is able to deliver technology faster to at least part of the employee population, identify technology that requires funding earlier in the solution life cycle, and ensure that the solutions are validated by the user population prior to deployment.

In a subsequent section, "Technology Adoption Program," we provide more detail on the philosophy and workings of TAP. Reviewing how traditional approaches are unable to manage innovation provides a quick overview of the IBM approach to innovation management and lends context to the rest of the paper. The next section begins to articulate the current enterprise environment, helping to explore the role of the existing IT environment and the opportunity presented by a new approach.

IBM corporate culture

IBM operates in 170 countries with more than 300,000 employees organized into six business units and four geographic areas. In this employee population, there are over 30,000 managers—the company's decision-makers—all of whom are committed to various goals that are measured by different metrics. It is a matrix organization, aiming for high operational synergies (including innovation) to take advantage of the sharing of resources, information, and technology in order to succeed in the marketplace. This level of collaboration requires a high degree of coordination.[8] Therefore, geographic boundaries, time zones and organizational data "silos" must be mitigated for the organization to succeed and ensure that sharing is effective.

The enterprise needs a set of formal processes to ensure alignment between IT and business strategy. However, as Gartner analysts point out,[9] for this alignment to be effective, governance (i.e., the principles, structure, and processes of information management) must coordinate the corporate culture and management style to adapt to a continually changing business environment.

In a large and diversified corporation, which operates on a global scale, it is difficult to summarize the corporate culture easily, but it is possible to identify how the corporation empowers its employees worldwide and fosters a culture that will lead the business to success. Linda Sanford, IBM Senior Vice President for Enterprise On Demand Transformation, has said that the company can only be successful if it invests in its people, enabling them with the necessary tools, encouraging collaborative behavior, and engaging employees' passion and expertise to embrace a culture of innovation.[10] A culture of innovation is one that encourages creativity and breakthrough thinking to improve the work environment continually and address the needs of clients.

Values drive success

In many ways, the culture at IBM and its focus on innovation as its corporate strategy began as the result of an internal collaboration event to define IBM core values.[11] The Values Jam was held in the summer of 2003 and brought together the global IBM population for an online discussion about what it means to work at IBM. The outcome of this 72-hour event was a set of shared values that define the IBM enterprise:

- Dedication to every client's success
- Innovation that matters—for our company and for the world

- Trust and personal responsibility in all relationships

These values were gleaned directly from the commentary and interaction among IBM employees during the event. The willingness to share one's thoughts, insights, and criticisms in an open way is a key part of the culture that is developing within IBM. In an interview with the *Harvard Business Review*, Sam Palmisano, IBM CEO, noted that IBM employees could not simply accept a new definition of IBM values.[12] He explained that employees need to be a part of things and by doing so help to maintain the adaptability and responsiveness needed to succeed in the marketplace. When management is not present, employees will know to make the right decisions, empowered with the ability to know how to support IBM strategy. This is reinforced in the process and program structure of TAP. The Values Jam effort, in which employees were asked to help define the corporate values, inspired a vision of how innovation can be managed in the IBM IT environment—namely, by asking employees which inventions constitute real innovation. With the goal of promoting "innovation that matters," TAP began with these values in mind, so that as the program has expanded, the team has laid the foundation for reacting to new challenges and preparing for new growth.

Prioritizing projects

Many IT projects are based on false projections of cost savings rather than business strategy.[13] This implies that the challenge in initiating an IT project is not necessarily determining its return on investment (ROI), but in ensuring that the proposed enterprise-IT project aligns with myriad enterprise functions, including a business-and-product strategy, legal and accounting policy, and organizational goals such as revenue growth, customer satisfaction, and employee productivity. Gartner analysts have discussed the need for such alignment, proposing that a "business-IT boundary" can determine the success of a project.[14] Aligning IT plans with business strategies and design is critical, and this poses a challenge for companies such as IBM, which are diverse in their products, people, and operations.

The IBM IT management system

One goal of IBM is to embrace innovation as a corporate strategy. Its organizational matrix structure, which requires the company to coordinate, share, and optimize its resources continually, would suggest an openness to innovation. However, the sheer size of the enterprise complicates the innovation process, because detailed, step-by-step definitions of processes and the associated tools to manage them are required. Corporate standards are in place to manage the internal IT environment, covering such diverse areas as security, compliance, privacy, accessibility, and globalization, to ensure that all internal IT can be effectively used by all IBM employees. Executive boards and teams govern the standards and ensure that process steps are being met. As a result, the culture of innovation at IBM is often assumed to be limited to a strategic goal or objective that concerns patent achievements or operational improvements.

These standards, processes, and teams deliver effective and efficient IT applications, tools and infrastructure to IBM. Having a rigorous process in place is critical, and aids in the management of a streamlined, balanced operation. The IT management system is known as the Business Transformation Management System (BTMS) and consists of four main components: management structure, process framework, metrics, and tools.[15]

The process framework, known as the Business Transformation Operations Process (BTOP), defines the activities by which project teams structure their time. These activities begin with an initial idea in the concept phase; this idea matures into a plan by which the team develops and qualifies code, ensuring that it has met all required standards. After this, the team can "roll out" its solution and maintain it throughout its life cycle. Checkpoints are in place at each main phase of the process: *concept*, *plan*, *qualify*, and *end-of-life*. Each checkpoint is governed by an executive board that evaluates its compliance and approves its progress into the next phase.

The BTMS, specifically the activities in the BTOP, is reviewed annually to encourage continuous improvement and adaptability. This is especially important as the technology industry continues to accelerate its rate of change, regularly releasing products that have new functionality, incorporate advanced research, and realize new efficiencies. By being adaptive to changing conditions and yet still managing an IT portfolio of more than $3 billion,

BTMS has helped the company through its efficient operations and low-cost environment.

With this streamlined operation that plans for operational improvements, where does innovation occur? The culture of IBM does encourage employees to voice their ideas and champion new IT projects, but according to the current management systems, all ideas for investment must use BTOP. This means that innovators must prove that their idea is worthy as a concept and then progress through the defined phases. To upgrade the phone system of a building or to dramatically change the corporate intranet, for example, necessitates the rigor of a formal IT management process to ensure coordination of activities and measure successful change. This creates a dilemma: how to nimbly manage the introduction of new and emerging technology into the environment, even in cases where the potential benefits to the enterprise are not yet certain. In these kinds of initiatives and efforts, the formal management system may be too rigorous.

It takes time, funding, dedication, and influence to bring cutting-edge ideas to fruition. What may be effective in one area of the company may not be effective in another, especially if criteria such as a high ROI are required before a concept can mature into a plan. A project without any comparison or any baseline information could never create a realistic ROI; similarly, a project that would require minimal funding may never mature to the plan phase if it is eliminated in order to release resources and bring focus to bigger initiatives. Thus, unproven ideas represent an opportunity, but need help to survive formal corporate processes.

The TAP team is focused on addressing this opportunity, operating openly, with all information readily available. By sharing alpha and beta versions of code with a community of early adopters, innovators make their ideas and work available for evaluation. Similarly, early adopters must be open in their feedback, good and bad, to encourage innovators to deliver the best possible offerings. As a set of activities aligned in a program, TAP must also be transparent, sharing processes and decisions throughout IBM. The openness of TAP is critical to success, enabling more people to understand the intentions and goals of a project. Furthermore, openness enables TAP's quest for streamlined processes and flexible management to be assessed continually by letting all parties comment on how to offer a technology in a simple, effective way.

TAP accelerates innovation by reducing the time required to introduce a technology and increasing the number of development iterations. The program offers a variety of services that remove barriers for innovators, such as a self-service Web presence, infrastructure, value assessment, feedback, and bug tracking. These services reduce the burden on the innovators, allowing them to focus on their work and not on the availability of infrastructure or how to make a business case.

TECHNOLOGY ADOPTION PROGRAM

As part of the IBM CIO organization, the technology and innovation organization realized an opportunity to create a new discipline that could foster an innovative environment by launching the Technology Adoption Program (TAP). Understanding the challenges BTOP may pose to an innovator's project, the group focused not on introducing a new corporate process, but on starting with the corporate culture necessary to make that change effective by creating a community.

TAP is based on shifting the power of IT decision-making into the hands of a community of early adopters and innovators. In this way, TAP radically shifts how technology is identified, developed, evaluated, and transitioned.[16] For a variety of reasons, emerging technologies are often deployed in a fragmented, haphazard manner. In some cases, adoption occurs rapidly, as the popularity of a technology grows; in other cases, it may stagnate as proponents fail to convince others of the value of a technology. In both situations, there is no disciplined approach that evaluates the feasibility of the technology or identifies its prospects to accelerate business strategies. TAP is not simply a change to the process; TAP is an agent of cultural change.

TAP augments the formal IBM BTOP processes. Using a fusion of innovation theories, TAP brings together early adopters and innovators at IBM. TAP manages a Web site that offers innovators an intranet presence where they can describe their projects, offer them to users, and gather feedback through collaborative tools. Early adopters are the eager potential users who look to TAP for easy access to new technology. Because they are more tolerant of new technology, early adopters are ideal

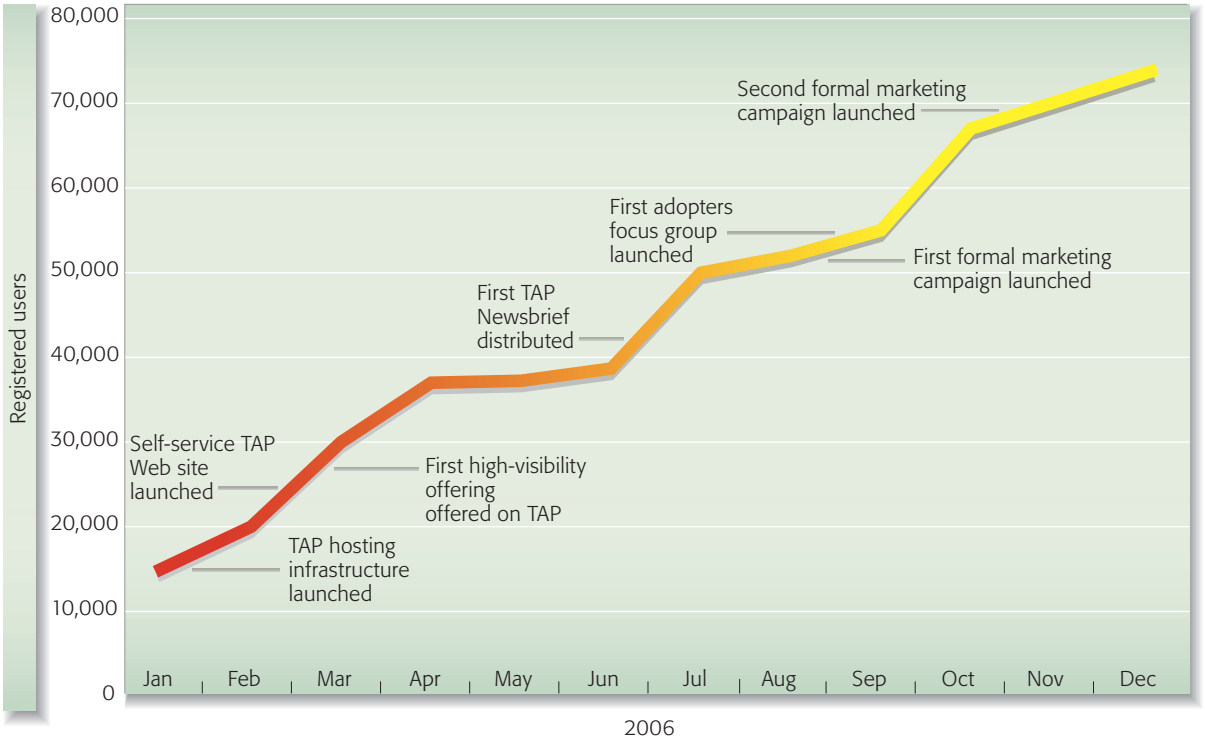

Figure 1
TAP community growth

for validating and influencing the progression of unproven projects. They are true volunteers, excited to offer their time to influence the direction of technical deployments in the company. Rather than rely on the IBM internal help desk for any problems, they rely on their new TAP community for support and to provide their feedback to the innovators.[17]

Building the community

A community begins with one person and expands as more people join to unite around a common goal. Within TAP, as each individual engages others' interests and passion for innovation, the compound growth resulting from informal personal communication helps a project to reach a critical mass. The common goal of the TAP community is to improve new technology in pursuit of innovation. This task is its own reward. Stimulated by intellectual curiosity, innovators and early adopters give freely of their time. They contribute during regular work hours and at other times, feeling a sense of commitment to something larger than themselves. Gladwell suggests that this community-based effort creates an epidemic of sorts, not unlike the spread of a virus from person to person.[18] Our experience with TAP has proved this to be true, as early adopters have used their personal networks, powers of persuasion, and expertise to expand and strengthen the community and its mission.

TAP relies on its community of early adopters and innovators to support the program and fulfill its aggressive goal to improve technology to achieve innovation. Such reliance enables a program that involves minimal processes and fosters a climate of open, creative, and constructive collaboration as decisions are driven by the community's actions. The success of TAP depends on its ability to grow, by numbers and in maturity, in order to capitalize on innovation that matters.

Figure 1 illustrates the growth of the TAP community during its first year. This community of early adopters and innovators was eager to try new technology and enthusiastic about having new technology to pass on to their peers and colleagues. TAP attracted people's interest and encouraged them to register and participate by making it easy to share information between community members.

TAP innovators and early adopters currently number more than 80,000 people, and this number is still growing as TAP reaches its eighteenth month. The members of the community are passionate about change—creating it and experimenting with it. Because of the community's intellectual enthusiasm for technology, these IBM employees appreciate technology for its own sake. In addition, they are willing to extend that appreciation to trying something new to see if it can help them in their everyday lives and work routines.[19]

The "non-process" of TAP

The removal of process impediments between the community of innovators and the community of eager early adopters was a critical factor in the success of TAP. Without the constraint of BTOP activities to define the goal of the technology and plans to create it, TAP encourages innovators to share their creations. Innovators experiment with new technologies and want to see whether people can use them. These innovators need resources to launch the technology and they need help in reaching a community of enthusiasts who will try new technology at their own risk. TAP works to provide innovators with the ability to share their technology, to enable early adopters to try it and provide feedback, and to capture this exchange to determine the nature of an innovation.

Hosting an offering

TAP provides resources to accelerate the introduction of an innovator's technology to the community. Through the TAP intranet Web site, innovators answer a series of questions, proposing their technology for the program. This content is captured and an intranet page about the proposed technology is created and sent to the TAP program manager. Upon receipt of the proposal, the program manager initiates a discussion, asking simple questions to understand the maturity of the technology and the innovator's goals, and to explain to innovators some successful tips on supporting a project in TAP. During this discussion, innovators can identify their needs, whether they reside in hardware and infrastructure, marketing and promoting their technology, or measuring and uncovering potential business value (and eliminating barriers to realizing that value).

In TAP, infrastructure allocation and planning for marketing happens within a five-day time frame, requiring only the commitment from innovators to receive and act upon the feedback from the community. This allocation and planning does not require a vote, budget, ROI calculation, or a plan. The TAP program manager then publishes the intranet page and the technology becomes an offering on TAP.

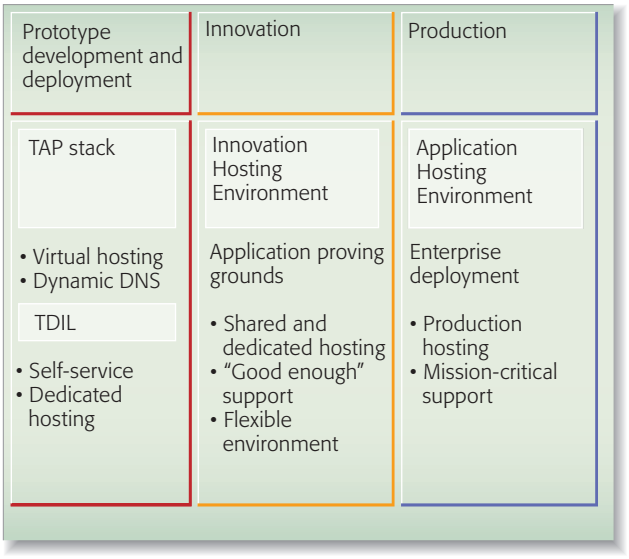

Figure 2
TAP hosting environments

Server services

Different technologies generally require different types of infrastructure. There is no "one-size-fits-all" approach to address an innovator's infrastructure needs. Because TAP works to support innovation throughout IBM, hosting is one aspect of how this program actively supports innovators. This support is enabled through an assortment of infrastructure options ranging from simple, self-service hosting solutions to a more robust, managed and supported enterprise-level hosting environment. Three of these options are described below: IBM Bluehost, TAP Dynamic Infrastructure Lab (TDIL), and the Innovation Hosting Environment (IHE), as shown in *Figure 2*.

Bluehost is one of the available hosting options under the TAP stack—the set of technical capabilities TAP offers to help innovators while requiring little support from the TAP team. Bluehost provides innovators with a lightweight, easy-to-use, shared hosting service. This is a virtualized suite of software tools available internally that is based on a LAMP (Linux,** Apache,** MySQL,** and PHP/

Perl) hosting model, commonly available to Internet consumers. Bluehost users are given their own Linux-based Web servers with a host name of their choice, server-side scripting capabilities, and one or more databases. This lightweight resource allows innovators to host their applications quickly and easily, without incurring the complication and overhead of system administration.

The TAP Dynamic Infrastructure Lab (TDIL) takes advantage of IBM technologies and best practices in system administration to provide a self-service, user-managed, and dedicated hosting environment for early project development. This solution is built upon a self-service delivery framework and includes services ranging from ordering a server through generating reports. The capabilities of this environment are technically enabled through a high degree of virtualization and automation. The TAP team can easily provision a server dedicated to an innovator's project and just as easily recover it, recycling it for another team to use. Nearly 50 percent of TAP projects run on a server from the TDIL environment.

The Innovation Hosting Environment (IHE) is a managed, flexible hosting model that enables rapid, iterative deployments of innovative technology. In addition to functioning as a reference example for innovative hosting methodologies and product capabilities, this environment accommodates applications that have not yet matured to a point where they meet production standards. Its flexibility, streamlined set-up procedure, and simplified change processes make this hosting model unique, enabling the IHE to be an ideal destination for applications and technologies that do not require the rigor and resilience of traditional production hosting offerings within IBM. This environment is for those technologies that have proven valuable to early adopters and need a space in which to mature into formal, supported products. The combination of flexibility with the high level of support provided in the IHE enables innovators to address requirements needed to move into the formal, BTOP-approved process.

In all three cases, Bluehost, TDIL, and the IHE, TAP provides funding for all aspects of the supporting infrastructure, including hardware, network services, and support. These hosting environments are not run as "cost centers," where services are billed to development teams who exploit them. Instead, TAP absorbs the cost as an opportunity cost which innovators no longer need to face. By removing the barriers of cost, time to acquire hardware, and rigid processes, TAP enables innovative technologies to mature quickly and become production-ready offerings that support profitable parts of the business—whether internal deployments, customer engagements, or products.

Promoting innovation

Innovators excel at creating new technology, not at its marketing and promotion. The TAP team therefore focuses on promoting their work. The TAP Web site is used as the primary marketing channel to communicate with early adopters. This is a basic concept, but it has a major impact, because concerns such as the ability to find innovations determine how easily early adopters can access the information they need.[20] Through additional, targeted vehicles such as community e-mail newsletters ("The TAP Newsbrief"), TAP has encouraged dramatic increases in traffic to highlighted offering pages. *Figure 3* shows the effect the TAP Newsbrief has had on page views during the second half of 2006.

Traditional communication vehicles such as e-mail and the intranet Web site are effective in helping to establish the visibility of an innovation. The TAP team augments this with communications using emerging forms of media including podcasting and blogging. Supporting the community with a variety of channels helps to maintain their engagement and promote new offerings to its membership.

Working with Rogers' theory of innovation diffusion,[17] the TAP team aims to encourage each stage of diffusion: knowledge, persuasion, decision, implementation, and confirmation. Because TAP has an engaged community, we promote available new technology through the program "on TAP." Early adopters are able to choose which technologies they will try, continue to use, and talk about, based on their experience. The TAP team assumes responsibility for the knowledge stage for early adopters, whereas the community handles the persuasion stage. By encouraging others to use offerings on TAP, in a very infectious manner, early adopters can also provide feedback to the innovators about why their technology did not meet their needs.

Evaluating adoption

In TAP, there are three phases of measurement used to evaluate the successful adoption of innovative technology: *setting expectations*, *assessing the early adopter experience*, and *adoption-based deci-*

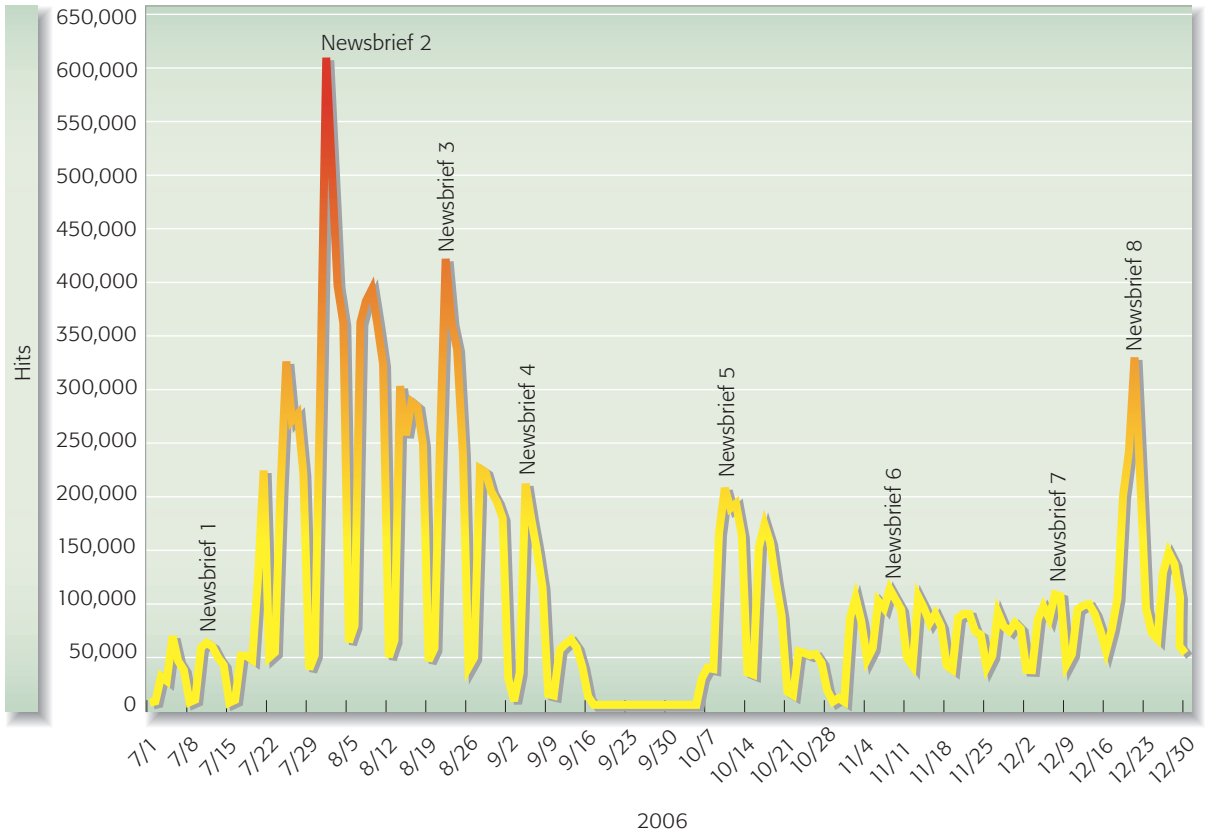

Figure 3
Effect of TAP Newsbrief on TAP Web site traffic

sion making. These phases are described in the following sections.

Setting expectations with TAP first adopters

The TAP "first adopters" group is a subset of approximately 100 of the early adopters who have volunteered to evaluate each offering as it comes through TAP. In exchange for their time, they are privileged to be among the earliest users of the offering. They are vocal about their experiences, communicating their experiences with each other and with the innovators through online forums for the entire TAP community to see. Often, these first adopter conversations begin a strong trend of forum-based collaboration that persists beyond the evaluation period and creates a heightened interest level for the offering, which results in higher levels of adoption during the early adoption period.[21]

Shortly after an offering is introducted on the TAP Web site, first adopters use a scorecard to generate an initial quantitative score, indicating a rough assessment of its value and the changes necessary for its implementation. In this scorecard, users are asked to evaluate the stability and performance of the technology, its alignment with IBM strategy, and the difficulty they experienced in installing, configuring, and using it. After each first adopter has answered all of the questions using a scale of one to five, his or her total score is calculated. After all first adopters have submitted their total scores, the scores are averaged, resulting in the initial scorecard values. As the earliest measurement indicating the overall value potential of each offering, this score can help to provide an initial positioning of the new technology for all early adopters. Because of this, the scorecard results are shared with the innovation team and with the entire TAP community through the offering Web page, permitting early adopters to learn more about the technology and assess its relevance to their individual needs.

Assessing the early adopter experience

The TAP team gathers various forms of feedback for each TAP offering. This feedback is consolidated at

each step of the TAP life cycle and provided to the innovation team as input suggesting how the team can modify and improve its offering. Historically, management would have moved projects forward or canceled them based on their understanding of the expected ROI of a project. In the TAP model, this method is replaced with the adoption-based decision resulting from TAP measurements. When combined, TAP's informal metrics and the structured survey results allow for adoption-based decision-making (akin to the natural selection process in evolutionary theory) instead of management decision-making.[22] In each case, two types of feedback are gathered: open and structured input. Together, this feedback enables a comprehensive understanding of the early adopters' experience.

Open measures include the degree of collaboration among early adopters.The TAP team needed a means to enable and encourage the community to collaborate. Because there are a vast number of collaboration tools available to IBM employees, TAP identified a subset of these tools which were considered most likely to be used when communicating about new technology. TAP value calculations incorporate data from audio and video files (such as podcasts) that discuss or present the offering in question, blogs referencing the offering, intranet news articles about the technology and its users, and response or "click through" rates from TAP e-mail communications. Together, these metrics measure the community's collaboration and activity level.

On the structured side, the TAP team partners with user-centered design experts and the offering owners to conduct a user satisfaction survey containing 10 to 15 questions. Six of these questions are standard TAP questions, used as a benchmark, and additional questions are provided by the innovators to create a baseline understanding of specific features and functions. TAP value scoring also includes informal measures such as star ratings similar to those used on familiar consumer Web sites such as Amazon.com** and eBay.**

When the results of the first adopter evaluation, the metrics, and the survey results are combined in an econometric value equation, assigning appropriate weights to the inputs, a quantitative sense of the early adopters' experience is derived. The value can then be effectively communicated to management and other stakeholders, allowing comparison with other offerings and assisting in adoption-based decision-making.

Adoption-based decision-making

The econometric value equation based on early adopter feedback results in a single number, which the TAP team calls the *early adoption value*. This number is used to make decisions about how an offering team and the TAP team can work together to bring the technology to maturity. The values range from zero to 100.

For offerings whose value falls into the lowest third of this range, TAP makes a recommendation to reexamine the fundamental premises of the proposed innovation. For those offerings in the middle range, TAP indicates that re-work and careful iteration will be needed before moving forward. In many of these offerings, significant obstacles may exist; for instance, there may be substantial problems in the user interface or with technology reliability. Finally, for offerings whose value is in the highest third of the range, TAP recommends moving forward to production, while noting any obstacles that persist.

Accelerating innovation

To drive successful innovation, TAP encourages teams to take risks early and often with their offerings, with the goal of better understanding how the offering teams' expertise and skills can be applied to meet users' needs. Through iteration, some offerings will be replaced, while others will grow and mature, moving into production and continuing to develop and realize value for the business. As each offering comes to TAP, its innovators quickly receive clear and direct feedback from end users who indicate what is helpful and what is not. Each team can then decide how to approach the feedback, and work to release the next version on TAP. During this time, the team is still able to receive the same attention and the same services, all within days and without cost to the team.

When an offering has achieved a critical mass of adoption, its team is encouraged to graduate the offering into a more robust environment, such as the IHE, where more IBM employees can take advantage of its capabilities. However, because the offering has likely been implemented without consideration for existing corporate standards or compliance with requirements for the corporate IT infrastructure, the

TAP team relies on experts in the fields of intellectual property, accessibility, usability, user satisfaction, and technical standards and guidelines to assist the innovators. TAP brings these experts together with the innovators to identify specific areas of concern in an offering, which, when addressed, will help to reduce barriers to achieving the full value potential of the offering when moving to a production environment. It is at this point that the rigorous BTOP is once again valuable. Having proven its ability to meet the needs of a community of users and its ease of adoption (which suggests high satisfaction among users), the case for "rolling out" an offering can more easily be made. Subject matter experts provide feedback on how an offering can best move forward within the constraints of the company's existing infrastructure or products and services business lines.

CONCLUSION

In this paper, we presented an overview of the IBM Technology Adoption Program and the methods we are using to successfully engage the IBM employee population in the process of adopting emerging technology and innovation in the IBM IT environment. We provided background on the business imperatives and industry shifts that are leading to a focus on innovation as the driver for future business growth and offered a rationale for why measuring the effect of innovation can be a challenge. We further connected this innovation focus to the functions of IT and presented a case for using a process outside the normal IT governance to accelerate the identification of business value from emerging technology projects. By achieving a strong balance between the oversight needed to manage the formal project portfolio and the iterative processes that innovation projects require, IT organizations can achieve a greater impact on the profitability of the business. TAP is able to scale to support a broad set of innovation projects concurrently. The entire TAP model is focused on creating an end-to-end, self-service environment to meet the needs of the IBM enterprise.

While TAP is still growing and we are continuing to refine the model, it has already provided substantial value for the IBM Corporation. The TAP user community and its degree of participation continue to grow, and project owners are actively seeking to use the program to encourage adoption of their solutions. Beyond internal deployments, TAP has also provided a platform for the development of new product offerings from the IBM Software Group. Specifically, the Lotus Sametime* 7.5 product and the recently announced Lotus Connections offering were introduced through the TAP early adopter community. In each case, the TAP user population assisted the development teams in understanding the use of those products in real work settings and in refining the offerings to ensure a strong business value. In the coming year, TAP will extend its impact with clients, consulting with other businesses to create programs similar to TAP and engaging customers with the advanced technology of IBM. In this way, TAP is helping IBM to innovate by fostering collaboration between the technology creator and users, companies, and customers.

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