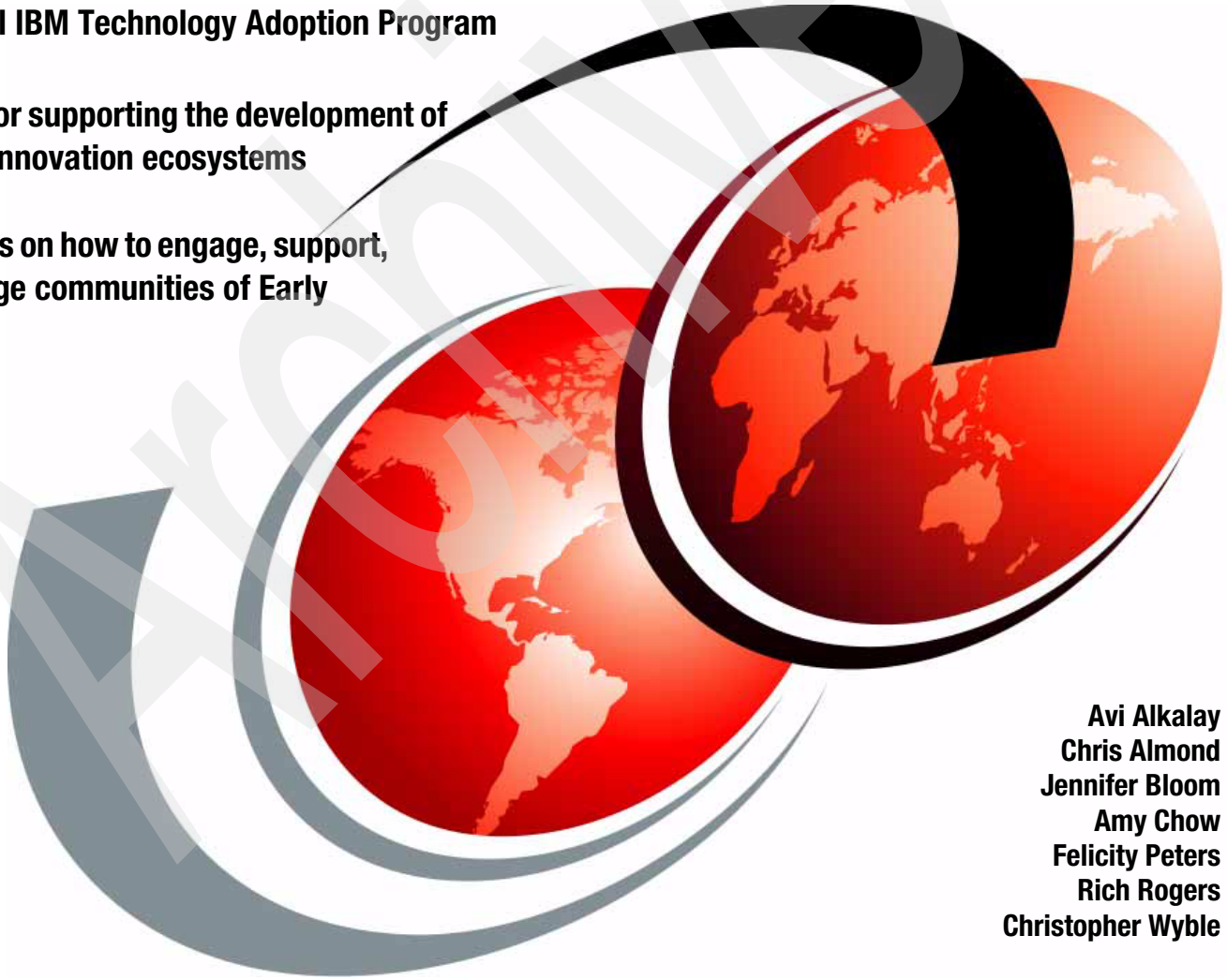
IBM

Supporting Innovators and Early Adopters

A Technology Adoption Program Cookbook

- A strategy and implementation guide based on the successful IBM Technology Adoption Program
- Methods for supporting the development of strategic innovation ecosystems
- Techniques on how to engage, support, and manage communities of Early Adopters



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Contents

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Preface

This IBM Redpaper provides a strategic overview of the IBM® Chief Information Officer's *Technology Adoption Program* (TAP) within the IBM Corporation. We also provide a detailed description of the process management framework that supports the program.

This paper is for organizations that are considering the deployment of a similar program. We highlight the key internal organizational factors that contribute to the success of TAP, as well as the extent to which the program leverages the new collaborative community environment and technologies that are associated with the trends toward Web 2.0.

Leveraging Web 2.0 style community dynamics is key to the success of TAP so far. The TAP strategy focuses on supporting community dynamics *within* IBM. In this Redpaper, we highlight the importance of understanding what this means within an Enterprise 2.0[1] context.

"*Globalization is the new playing field, the arena in which the competitive game from now on will be played -- whether that game is economics, technology, politics or culture. And innovation is the only way you are going to win in that arena.*" - *Samuel Palmisano, Chairman, President, and CEO, IBM Corporation*

As quoted in the Financial Post, The glory of globalisation, 21 July 2007

The team that wrote this paper

This IBM Redpaper was produced by a team of IBMers that came from around the world to work together at IBM in Somers, New York and at the IBM International Technical Support Organization (ITSO) Center in Austin, Texas, in July and August of 2007.

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[1] "Enterprise 2.0" is that term that was first coined in 2006 by Andrew McAfee of Harvard Business School. See *Enterprise 2.0: The Dawn of Emergent Collaboration*, Andrew McAfee, spring 2006 MIT Sloan Management Review. Available for download at: http://sloanreview.mit.edu/smr/issue/2007/spring/16/

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The team also wants to gratefully acknowledge the support for this project that our IBM CIO Innovation Program sponsors provided:

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Many team members from within the IBM CIO Technology and Innovation organization, as well as other organizations contributed their time and expertise in support of this project. For their contributions, guidance, and efforts in reviewing versions of this paper, we want to acknowledge and express our gratitude to the following IBM Employees:

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Technology Adoption Program overview

In this chapter, we provide an overview of the Technology Adoption Program (TAP) within IBM. The Technology & Innovation group within the IBM CIO organization created and manages TAP. The Technology & Innovation group recognized a need for a new type of *community-driven* innovation management program. In response to that need, TAP was designed and deployed within the IBM intranet to support the participation of innovators and early adopters from all organizations across the entire company, and at the same time compliment the other existing programs that the IBM CIO organization provides to support employee innovation.

We focus on the following topics in this chapter:

1.1 Introducing TAP

More so than ever before, innovation is a critical ingredient for companies that are striving to sustain their competitive advantage in the increasingly competitive global marketplace. Simply “doing the same things better” is not enough. Innovation is a key driver of economic growth and is vital to the prosperity of the economy. IBM established a Technology Adoption Program to efficiently and effectively harness the business benefits of community-driven innovation. TAP is an IBM model for managing new technology to drive innovation for internal transformation and growth.

TAP is an implementation of a new *community driven* IBM model for introducing and managing access to new technologies, within the IBM enterprise.

Prior to the introduction of TAP, IBM had a number of highly specialized innovation programs in place. Many of those programs are still thriving and evolving to meet the needs of the communities they serve. Those programs are designed for limited reach and catered mainly to small communities of innovators. Outside of those limited scope communities, there were still many willing potential innovators and a large latent community of early adopters interested in testing new technologies and tools. Those IBMers did not have access to the necessary infrastructure to prototype their innovations or know how to gain access to the latest emerging technology pilots. As a result, there was great unrealized innovative potential within the 350,000 strong IBM workforce.

The IBM CIO wanted to extend the successful collaboration model of these smaller communities into a larger version, one that would make it easy for all IBM employees worldwide to participate in. With *accelerating innovation* and increasing *speed to market* as the primary goals, an open innovation program, TAP, was created. TAP is an open innovation program because the design strategy behind TAP is based on leveraging emergent community-oriented collaboration patterns. Thus, TAP is designed to enable and support a cross-organizational, bottom-up, opt-in, community-oriented approach toward generating value.

1.1.1 The business challenges behind TAP

In the global marketplace today, the rate of technological change is accelerating. The challenge for business leaders is how to effectively harness the power of global IT-enabled communities and how to apply new technology to accelerate innovation and create additional value.

As Jim Collins outlines in his book *Good to Great,* the way in which companies respond to technological change is a good indicator of whether they have the inner drive to become great companies. Great companies, he states, in contrast to mediocre ones, are those that respond with thoughtfulness and creativity to technological change and avoid technology fads and bandwagons.[1]

Some of the key business challenges for IBM today within the competitive global marketplace are:

- Speed to market
- Accelerating innovation
- Attracting and retaining talent

[1] Jim Collins, *Good to Great: Why Some Companies Make the Leap... and Others Don’t*, HarperCollins, 2001

We discuss how TAP specifically addresses each of these business challenges in detail in section 1.2, “The TAP value proposition” on page 7.

1.1.2 Crowdsourcing and community

Crowdsourcing and community are critical components in the TAP design strategy. TAP provides an example of an intra-enterprise crowdsourcing model in action. Using a crowdsourcing model, TAP literally “taps” into the large community of technically savvy and motivated volunteers within the IBM enterprise.

> **Crowdsourcing:** “The act of taking a job, traditionally performed by an employee or contractor, and outsourcing it to an undefined, generally large group of people in the form of an open call.”
>
> Wikipedia contributors, "Crowdsourcing," Wikipedia, The Free Encyclopedia, http://en.wikipedia.org/w/index.php?title=Crowdsourcing&oldid=159390777 (accessed September 24, 2007)

To better understand how TAP works, you need to narrow the generalized definition of crowdsourcing into an enterprise 2.0 context. Instead of the “job” being *assigned* to an employee within a specific development organization, it is *out sourced* to the community of volunteers across the entire enterprise who want to donate their time. Within IBM, the “large group of people” in the crowdsourcing definition are the approximately 350,000 IBM employees worldwide; therefore, within IBM, the potential impact of a community-based *crowdsourcing* model for gathering Early Adopter participation and feedback is large. TAP was designed to exploit this potential.

1.1.3 The alignment of TAP and the IBM business strategy

TAP provides a framework with associated processes and support infrastructure for early adopters to access and help improve on offerings that are created and offered by other employees. The program consists of a community-driven management framework, an intranet portal, and a shared infrastructure that is centrally managed for the hosting and promotion of all offerings. Innovators can offer new technologies through the portal for any other interested employee to access, use, and provide user feedback.

As shown in Figure 1-1 on page 4, innovation is integral to the IBM business strategy. TAP is a collaborative innovation accelerator that offers new technologies to help drive “innovation that matters” in support of the IBM business strategy.

Figure 1-1 shows the IBM business strategy.

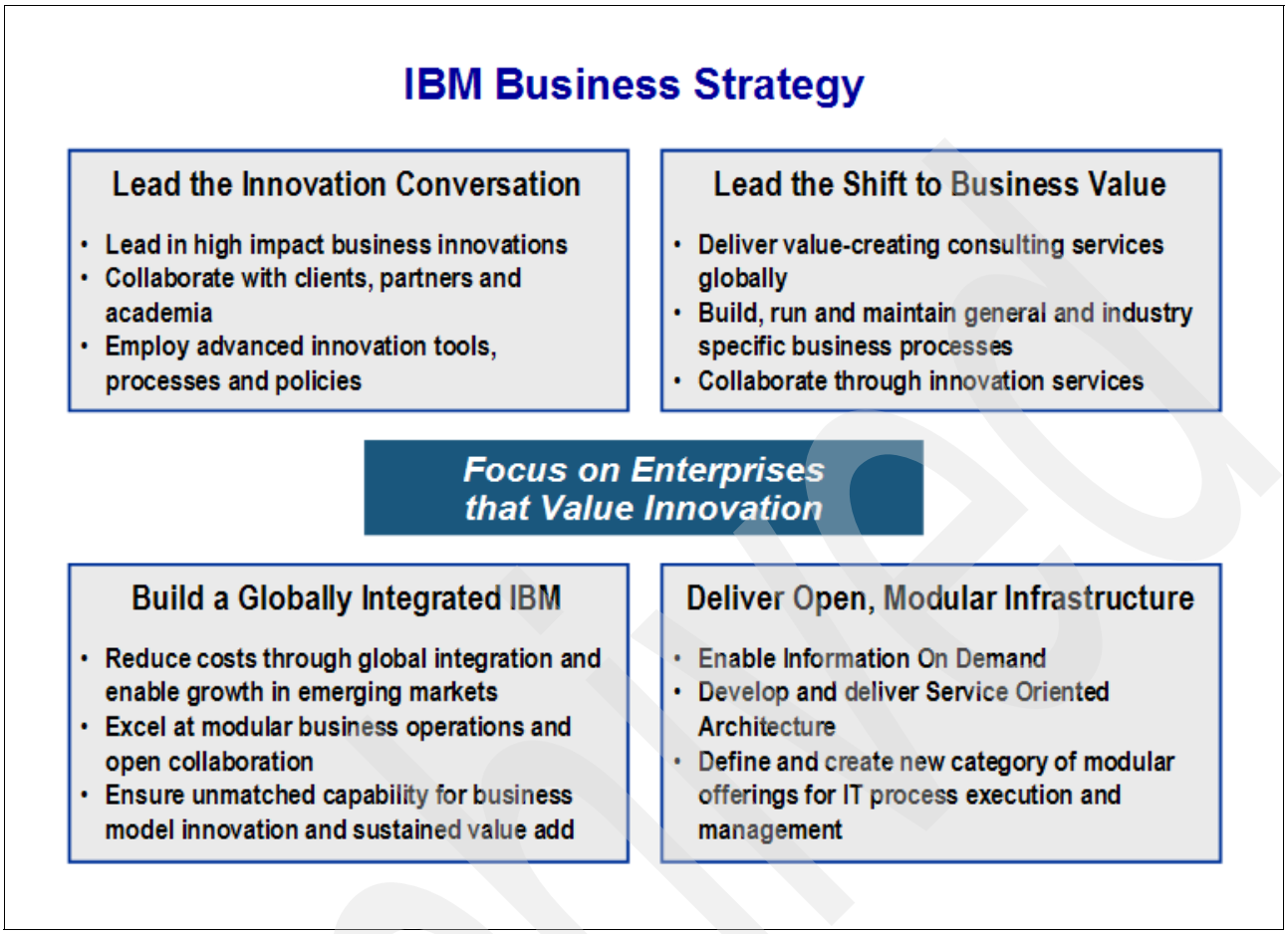


Figure 1-1 IBM business strategy

TAP supports the IBM business strategy of leading the business innovation conversation by offering an environment that supports employee-led innovation. TAP, itself, is also an organizational and managerial innovation, in that it is a new program that leverages IBM emerging technology Early Adopter communities across all business segments in the company.

The TAP strategy is also closely aligned with the IBM business leadership model, which we show in Figure 1-2.

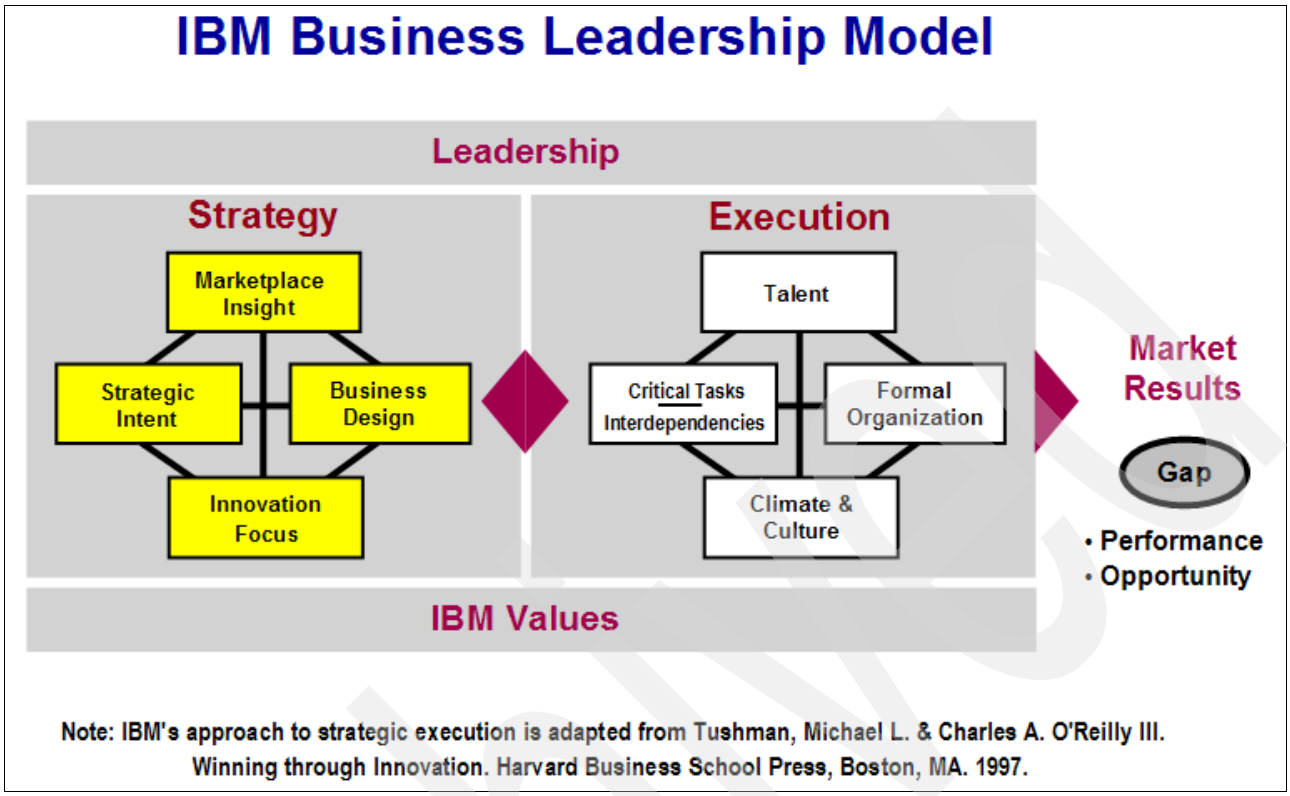


Figure 1-2 IBM business leadership model

As Figure 1-2 depicts, *Innovation Focus* is one of the four pillars of the IBM strategy segment. The proliferation of an enterprise culture that values collaborative communities of individuals and the creation of a climate in which all employees can pilot new emerging technologies, insures that IBMers are free to act on their innovative instincts.

1.1.4 The alignment between TAP and the IBM values

As shown in Figure 1-3, the three core IBM values that drive the actions of all IBMers are:

- Dedication to every client's success.
- Innovation that matters—for our company and for the world.
- Trust and personal responsibility in all relationships.

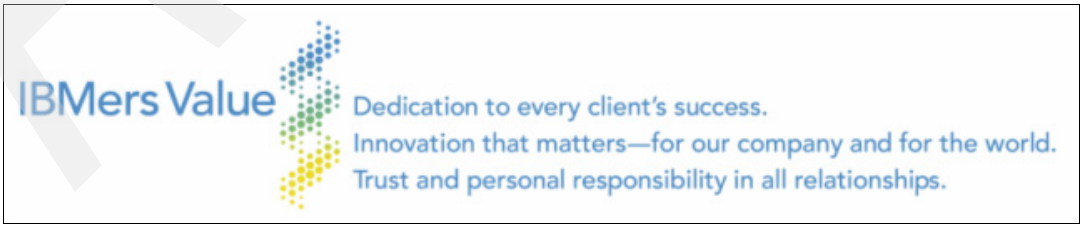


Figure 1-3 IBM values

TAP is aligned to support all of these goals. Everything that happens within TAP is ultimately measurable in terms of how it can make the IBM clients more successful. But out of those three goals, TAP is aligned most closely with the two that focus on innovation and trust.

Innovation that matters—for our company and for the world

IBM management's recognition of the importance of innovation in the increasingly competitive marketplace is evidenced by:

- Their readiness to invest in innovation programs, such as TAP, and the IBM associated support infrastructure.
- The extent to which the "look and feel" design of the TAP portal conspicuously differs from the corporate intranet standards, which ensures that the portal stands out and lets the employees know that it is ok to do nonstandard things within the TAP innovation environment.

Innovation and breakthrough thinking can span technology, business, and society. IBM strives to behave as a responsible corporate citizen, creating value for its clients and being a progressive force in the societies in which it operates. In doing so, IBM seeks to bring the positive results of innovation to its customers and the greater community.

Trust and personal responsibility in all relationships

The community code of conduct, as outlined in "Community etiquette" on page 64, is aligned with the third IBM value, trust and personal responsibility in all relationships. This value provides simple terms and conditions based on the principles of trust and personal responsibility to help TAP users unite constructively around their common goal of innovation acceleration at IBM. In open Web 2.0 style communities, where disparate employees in greater numbers than ever before correspond and collaborate on their common interest activities, trust and personal responsibility is essential to the successful relationships between these employees. Without this foundation of trust, effective working relationships could not be established between these employees and the communities of collaboration would not thrive.

Trust and personal responsibility are essential to sustaining successful relationships between TAP community members. As Stephen Covey highlights in his book, *The Seven Habits of Highly Successful People*[2], when trust is high, cooperation is high and communication is on a synergistic win/win basis. When trust is low, cooperation is low and communication is defensive, with a win/lose basis. In the middle position, where most people interact, they communicate politely but not emphatically to avoid the possibility of ugly confrontations. People might understand each other intellectually, but they really do not look deeply at the paradigms and assumptions, which underly their own positions, and become open to new possibilities. The business challenge is how to establish a climate and culture that gives rise to a work environment on which a high level of trust exists between all employees, regardless of whether they meet regularly in face-to-face meetings or collaborate in online communities.

Giving employees permission to innovate

The TAP operating principles are based on trusting the community. TAP trusts the community to provide all of the innovations it hosts, to determine the relative value of those innovations, and to set the direction in which the program management strategy and processes evolve to best facilitate healthy community activity. See 3.1, "Community: a cornerstone of TAP strategy" on page 58 for discussion of those principles. For employees that are apt to participate in community-based programs, TAP gives them permission to innovate, within a receptive, nurturing environment that exists outside of regular organizational boundaries.

[2] Stephen Covey, *The Seven Habits of Highly Effective People,* Free Press/Simon & Schuster, 2004

1.2 The TAP value proposition

The Technology Adoption Program offers two key types of value to organizations:

- TAP offers *community value*, which is the value communities of individuals within enterprises create and the associated social capital that is developed. In doing so the needs of many individuals for recognition and a sense of identity outside the boundaries of their primary role are satisfied.
- TAP offers *business value*, which is measured by financial results. Without active community participation, it is extremely difficult for an enterprise to realize business value from TAP. As a result of endorsing community value, cultural change may be triggered within an organization, and this change over time translates to business value.

1.2.1 Community value

Communities benefit IBMers because the communities allow IBMers to connect to other individuals who share a similar passion or interest. Community value benefits IBM because it triggers cultural change that converts to business value over time.

> "Research has shown that the most important factor for driving innovation is company culture."
>
> As quoted in *Measuring the Culture of Innovation*, MIT Sloan Management Review, Summer 2007

The IBM CIO demonstrates its support for community activity within the IBM intranet by enabling and supporting a range of Web 2.0 style collaborative tools and services that any IBM employee can use. These tools and services include communication tools, such as instant messaging, personal intranet blogs, wikis, forums, and community communications, which we describe in detail in 1.3.3, "Positioning of TAP within the IBM innovation ecosystem" on page 12. Through the deployment of TAP, in an open and transparent way, IBMers see that their company values *community driven* emerging technology development programs.

When an organization begins to understand the value of enterprise 2.0 community formation, then cultural change is bound to occur, change that flatters enterprises with greater horizontal collaboration, which, in turn, could translate into more agile organizational structures that are needed to respond to the increasingly dynamic marketplace. The alternative, a top-down approach to driving cultural change, is slower and less likely to have the same degree of impact when compared to open, bottom-up community-driven approaches that strive for viral adoption patterns and welcome the potential of unintended consequences.

By embracing a bottom-up community philosophy, TAP helps break down organizational silos. It lets "the community" become a major influencer in the traditional, top-down CIO-driven IT decision making processes.

We discuss the value and dynamics of communities in further detail in Chapter 3, "Understanding community" on page 57.

1.2.2 Business value

The business value that arises from active community involvement in TAP roughly falls into the following categories:

- Speed-to-market
- Innovation accelerators
- Talent attraction and retention
- Unintended consequences

The corresponding business results translate to reduced business expenses, as a result of the faster go-to-market cycles and the deployment of more efficient innovative technology solutions within the company. Positive business results also come from the increased revenue of new innovative product offerings and services. As an environment in which employees can broadly share and demonstrate their skills and creativity, TAP may also help to reduce the turnover rates of highly skilled and innovative employees. The following sections outline these positive business values and results in detail.

Speed-to-market

The speed with which IBM can bring new products and services to the market is more important than ever before. As competitors increase the rate at which they can introduce new products, IBM must do likewise in order to stay competitive. TAP focuses on leveraging community-based adoption and feedback mechanisms. TAP short-cuts the traditional development and test cycle by accelerating the promotion and adoption of new technology to a larger community of willing testers. The levels of employee participation in TAP have increased the speed at which promising offerings were identified and converted into new products or updates to existing products. Results within IBM, in one particular case, indicate that using TAP as an alternative to traditional software testing cycles can reduce what would otherwise be a two year iterative release and development testing period down to a nine month period. This translates directly to development cycle cost reductions and increased speed-to-market.

Accelerating innovation

If you have a large community of early adopters within an enterprise that is ready to try out early versions of test products, then you also have a community with great potential for realizing new, innovative ways to apply, combine, and sell those offerings—ways that the original developers might never have been aware of.

TAP addresses this challenge by sustaining a community dynamic that leads to greater potential for innovative outcomes. TAP connects people with different roles, from different organizations, spanning different generations and geographic regions, and with different levels of experience and skills. The *TAP Early Adopter* communities are, in a way, ad hoc teams that are formed around a given offering and collaborate to mature and maximize innovative potential and impact.

Today companies cannot rely solely on their research labs and academia for new ideas and innovation. As per Figure 1-4 on page 9, the bulk of innovation (approximately 42%) comes from employees and not from internal research and development. The challenge for business leaders is to implement systems that leverage the bottom-up innovation potential of geographically diverse global work forces.

Figure 1-4 shows the top sources of new ideas and innovation. It also highlights the large potential for new ideas and innovation to come from outside of their own organization.

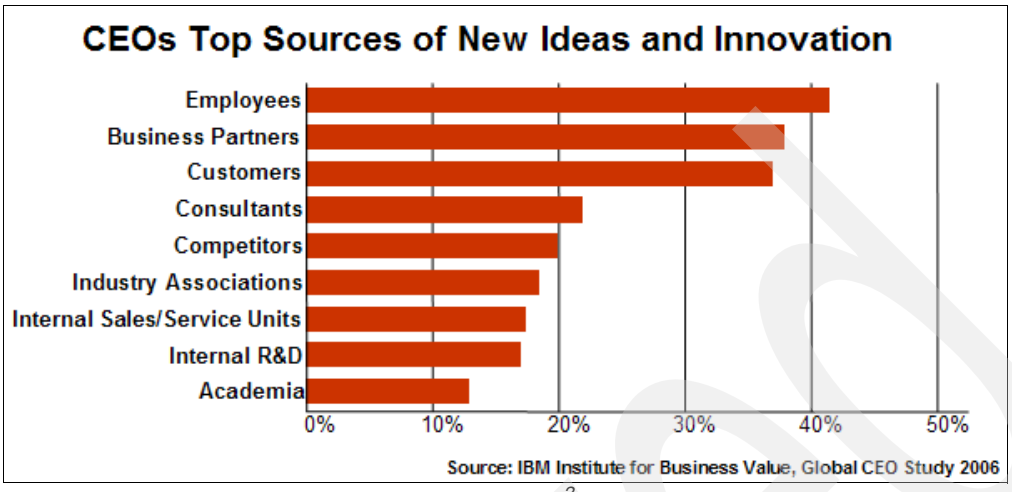


Figure 1-4 Top sources of new ideas and innovation[3]

Companies that want to maximize their sources of new ideas and innovation need to establish innovation ecosystems that cross traditional boundaries. These ecosystems include their business partners and customers, in addition to their employees.

TAP helps to accelerate innovation by lowering the traditional barriers that prevent rapid, low-cost deployment of new software and other technology offerings through corporate company intranets. TAP provides the infrastructure, the access portal, and the Early Adopter community engagement framework. It also provides innovators with these services at no direct cost to their departments.

TAP benefits: TAP provides innovators with intranet hosting infrastructure services, the access portal, and the Early Adopter community engagement framework, at **no direct cost** to the innovator's own organization. Thus TAP removes a key barrier that has, in the past, prevented innovators from reaching a broad audience of early adopters. TAP provides one centrally managed infrastructure for hosting innovations. Because of efficiencies in hardware scaling and system virtualization, this path is less expensive than a proliferation of "hodgepodge" servers that are managed disjointedly around the company by different organizations.

In accelerating innovation, TAP connects IBMers with different roles, backgrounds, experience, and skills together through the formation of communities around common interests and emerging technologies.

An external version of TAP potentially offers even greater innovation acceleration opportunities for participant organizations, be they customers, business partners, or academia, as the combined creative intellectual horsepower, from both inside and outside, is leveraged in joint collaboration.

Attracting and retaining a talented workforce

In the increasingly competitive marketplace, the ability of IBM to attract and retain a talented workforce is important to sustaining its competitive stance in the marketplace. TAP can have positive effects on attraction and retention of high potential employees who consider

[3] From *Expanding the Innovation Horizon Global CEO Study 2006,* IBM Institute for Business Value. See http://www-306.ibm.com/innovation/us/pointofview/enterprise/mar27/ceo_study.html

themselves technology innovators and early adopters. TAP offers a forum where any employee can access and pilot the latest technology and publish their own technology ideas and gain instant recognition among their peers. It gives the employees a forum to extend their reach into the greater enterprise and potentially make an immediate difference in ways that were not previously anticipated, which helps counter the risk of employees getting buried in silos in large enterprises, becoming disgruntled, and leaving.

The current younger workforce generation, often referred to as *Generation Y* or *digital natives*, grew up with technology, which is in contrast to the generations their parents and grandparents come from (the *digital immigrant* generations). Generation Y workers typically have a different attitude towards employment that is characterized by limited company loyalty and the need for constant stimulation. Most consider the opportunity to readily use emerging technology, provided by a channel such as TAP, as an attractive option; furthermore, when they realize that they can participate as innovators by developing and sharing their innovations using TAP (in a completely self-directed way that occurs outside of the organizational limits that they might encounter within typical product development organizations), they may see this as a strong cultural differentiator when they consider employment options. TAP provides an environment where digital natives can collaborate with more seasoned domain experts for mutual benefit and more valuable outcomes.

Employees can self-categorize themselves as technology innovators and early adopters by creating and participating in new technology offerings on TAP. They join a community of employees who pilot and test new offerings. We describe the characteristics of these communities in 2.2.2, “The TAP user community” on page 34. These employees may also consider TAP a favorable aspect of employment at IBM, given that the majority of them do not have the opportunity to otherwise introduce and test emerging technologies as part of their official roles and responsibilities.

As an environment that stresses recognition of innovators, TAP can help contribute to a greater feeling of individual empowerment, which can positively effect staff turnover rates. The cost of staff turnover is typically estimated at an additional 50 to 100% of their annual salary in the year in which employees are replaced, due to the additional replacement salary costs, recruitment costs, the cost of on boarding, and the cost of lost productivity during the staff transition. For top performing staff, the cost of turnover is estimated at 150%[4].

Unintended consequences

Companies that are considering introducing a program, such as TAP, need to be open to the potential benefits of unintended consequences. It is natural to expect that by piloting new technologies within a large, self-selecting community of early adopters, you may encounter disruptive technologies and meet resistance from some quarters. The challenge for executive management is to fully consider the pros and cons of those emerging technologies, and to display good judgement in a timely manner when reviewing the issues surrounding the impacts, both planned and unplanned.

We previously mentioned that community involvement builds the foundation for success of programs, such as TAP. We describe, in more detail, how TAP strategy is aligned with community dynamics in Chapter 3, “Understanding community” on page 57. You cannot plan in advance how the community of early adopters will use new technology offerings, combine them together to create other offerings, or which ones will be more popular than others. IBM expects that a program such as TAP will generate unintended consequences. A good measure of the relative health and level of activity in a program such as TAP is how often these events occur.

[4] Estimates as advised by IBM Human Resources.

1.3 TAP within IBM

The IBM CIO office is responsible for hosting and managing TAP. The IBM CIO originally saw the potential value of TAP and invested in it. The program has since benefited both the CIO office and IBM lines of business (LOBs). Now, senior management from the LOBs leverage the opportunities it creates for revenue growth. Both the CIO executive level support and the widespread line management support of TAP are important factors in ensuring its ongoing success.

The CIO office is currently responsible for a number of innovation programs at IBM in addition to TAP, which include ThinkPlace®, Innovation Jam, BizTech, and other community collaboration programs. In the following sections, we describe all of these programs in detail. These programs complement TAP within the total IBM innovation ecosystem. The way in which they coexist with TAP continues to change over time as TAP evolves organically, and as senior management considers opportunities for further innovation program improvements.

1.3.1 The IBM CIO office and TAP

The role of the CIO has changed in many companies over the last decade. The traditional role of the CIO as the chief information officer focused primarily on IT operational management. Many CIOs spent their time educating their peers on how IT could help reduce costs and increase efficiencies. Today, this role changed, for many CIOs, to be similar to that of a venture capitalist, developing innovative projects and ideas that generate new revenue streams. Some CIOs today are becoming known as chief *innovation* officers. Within those organizations, IT is now considered a key enabler and accelerator of the business transformations necessary to respond to dynamic markets.

The IBM CIO office allowed TAP to challenge and potentially change existing standards, processes and guidelines.

The IBM CIO office manages a number of innovation programs and has a mission to enable and foster a culture of innovation across IBM worldwide. The CIO innovation management team played a critical role in driving the initial development of the TAP strategy within an environment where various small and specialized types of programs similar to TAP already existed. The CIO office allowed the program to challenge and potentially change existing standards, processes, and guidelines. It assisted with the identification of the initial innovator and Early Adopter communities, who were the social leaders that started the viral process, seeding and spreading innovation throughout the company. The ongoing executive support of the program is key to its success because it ensures that the team has the necessary resources to continue to function optimally.

How to position a program like TAP in other companies depends on the extent to which their CIO has an operational versus business transformation-oriented role. In companies where other executives have the primary responsibility for driving business transformation, and are responsible for the associated budgets and resources, their business unit may offer a more natural fit for an innovation program like TAP.

1.3.2 Management support of TAP

Managers continue to play an important role in ensuring the success of TAP. As Andrew McAfee describes, in the Spring 2006 issue of the *MIT SLOAN Management Review* [5], managers need to first and foremost provide a receptive culture, consciously cultivating new collaboration communities. Managers are no longer just charged with the task of managing line reports and project teams, as they now additionally play a key role in supporting communities. Experience shows that even though the new Web 2.0 communities are almost completely amorphous and egalitarian, they spread fastest if management offers support by providing some structure and hierarchy. The article emphasizes the need for managers to ensure that their staff has a starting point, which they can react to and modify, and that it is not effective to give them a blank workspace and just say, “use this now”.

In support of the IBM innovation strategy, managers must be aware of the opportunity that TAP participation offers to creative employees who are apt to create innovations worth sharing with early adopters:

- Managers can benefit from regularly visiting the TAP Web site to keep up-to-date with the latest technology offerings. They need to be aware of the tools and technologies that generate real community interest on TAP and help to propagate those tools throughout the areas of the organization that can benefit from them.
- Managers need to understand that TAP provides an environment that alleviates some of the barriers to understanding an offering’s immediate value. Activity levels and feedback from the community of early adopters provides this measurement.
- Managers can recognize that TAP provides a level playing field, a space without ego, where the community has a much more powerful voice, in influencing the development of innovative technology, than individuals do.

In a company culture that is allowed to transform using the introduction of enterprise 2.0 strategies, the new management challenge and focus needs to be on direct reports and project teams and not just managing, also on effectively supporting innovation communities and leveraging emerging technologies as appropriate.

1.3.3 Positioning of TAP within the IBM innovation ecosystem

At IBM, there are a number of innovation services offerings that coexist with TAP. These services sit primarily within the CIO organizational structure and support the innovative communities that thrive on emerging technologies. The key programs that support the *ideation phase* are Thinkplace and Innovation Jam. The key innovation programs that support the *incubation*, *prototyping*, *and validation* of new technology are TAP and Biztech. Additionally ExtremeBlue, the IBM research and product development labs, the traditional CIO programs, such as *Webahead*, and the IBM Services and Consulting services providers, also support this innovation ecosystem. The way in which these programs fit within the overall IBM innovation program framework is shown in Figure 1-5 on page 13.

[5] Enterprise 2.0: The Dawn of Emergent Collaboration, McAfee, A, *MIT Sloan Management Review*, Vol 47 Spring 2006 http://sloanreview.mit.edu/smr/issue/2006/spring/06/

Figure 1-5 shows the IBM innovation programs.

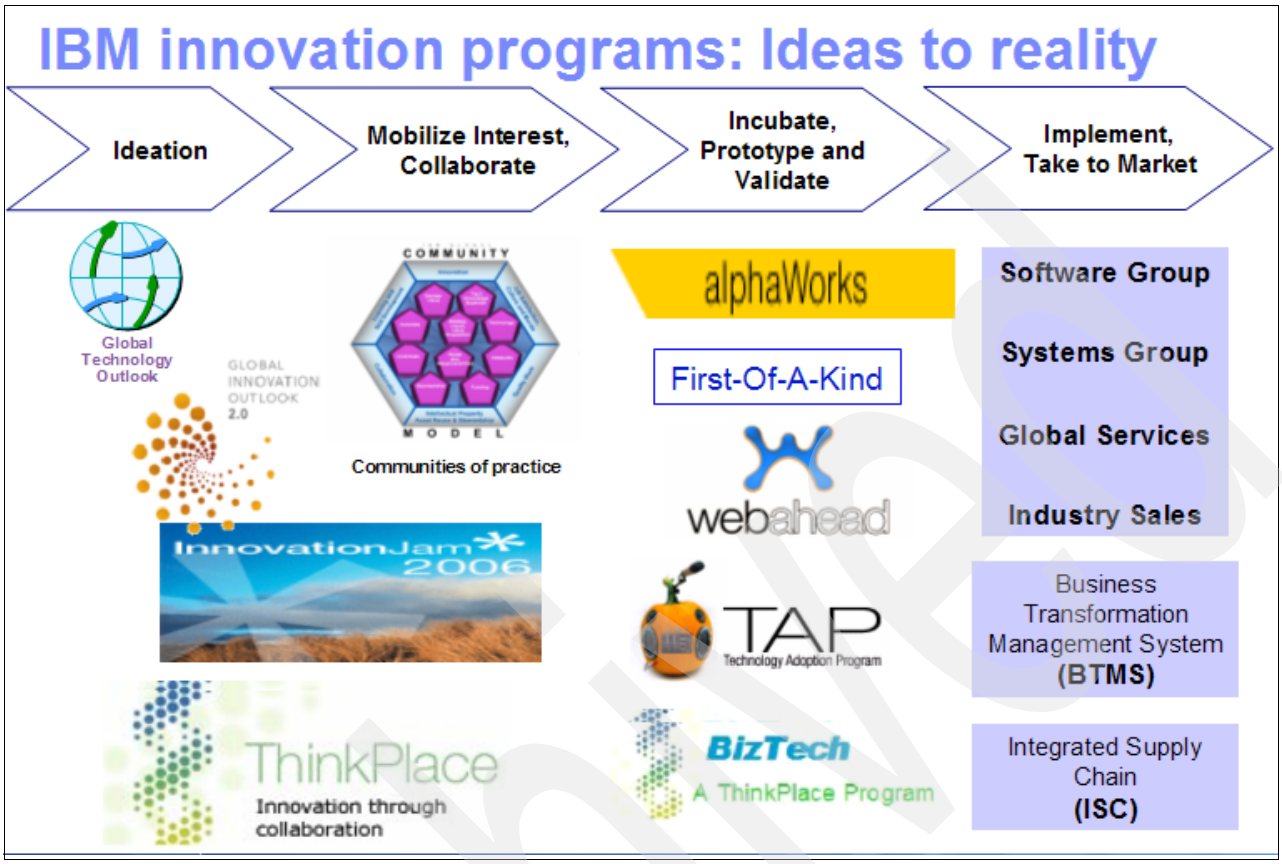


Figure 1-5 IBM innovation programs

ThinkPlace

ThinkPace is a collaborative tool that helps surface opportunities to grow the business, identify solutions for client business needs, and offer ideas for process improvements that have the potential to enhance the IBM culture or make it more competitive. It is a new idea and innovation forum, which provides a portal for employees to post their ideas and receive feedback regarding them from their colleagues. Following the receipt of feedback, the idea owner can refine his or her idea and subsequently post it in anticipation of receiving further feedback. *Innovation catalysts* volunteer to support the continued development of the most promising ideas. They ensure that the best ideas are progressed and that the owners of the ideas that end up generating measurable value to the company are rewarded appropriately.

ThinkPlace differs from TAP in that it is an *ideation management program*[6]. The ThinkPlace executive council and idea catalysts help to filter and identify ideas for progression. Ideas that are initially posted in ThinkPlace can be developed by an innovator into a service offering that can subsequently be prototyped and promoted through TAP for the Early Adopter community to test and evaluate.

ThinkPlace versus TAP: ThinkPlace differs from TAP in that it is essentially an ideation management program.

[6] A program that combines systems and processes to capture and manage ideas, from initial concept to final disposition.
http://en.wikipedia.org/wiki/Ideation

An example of ThinkPlace in action is the posting of the idea regarding the commercialization of TAP. Following the success of TAP within IBM, the idea of taking TAP outside to IBM clients was posted on ThinkPlace. IBMers who viewed this idea responded favorably and as a result, the challenge of developing the idea into a commercial offering was assigned to a senior executive within the CIO office.

Innovation Jams

Innovation Jams is a short-term collaborative tool that supports the first step of the ideation process. The IBM InnovationJam in 2006 was a 76 hour online session, where employees, families, clients, and business partners participated in a number of managed ideas forums. During the 2006 IBM InnovationJam, 140,000 people from 104 different nationalities posted 37,000 ideas, suggestions, and comments on a broad range of topics, that included going places, staying healthy, a better planet, and finance and commerce.

Ideas posted in InnovationJams have the potential to be selectively identified for development into prototypes for TAP technology pilots. For more details about IBM InnovationJams, refer to:

https://www.collaborationjam.com/

Webahead

Webahead started in the software group in 1994 as an Internet hosting technology lab. It now resides within the IBM CIO organization as an infrastructure hosting provider for innovative technology deployments. Webahead is an advanced technology group that supports rapid prototyping of emerging technologies. Unlike TAP, Webahead does not provide a support channel for early adopters or assistance to application owners. Some of the offerings that were initially developed and launched in Webahead flowed into TAP in order to extend their reach to the Early Adopter community.

Biztech

Biztech is a program in which project sponsors initiate and agree to sponsor an innovative project idea. The project lead then unites a virtual team to develop innovations collaboratively across IBM with the support of recognized technical leaders to deliver real results in nine-to-twelve months. The results either contribute to cost savings, project improvements, or result in the launch of new emerging technology offerings.

The Biztech program is focused on early tenure employees of one-to-five years, and its contribution to increasing their retention rates is amplified when coupled with TAP. Biztech innovations can be offered through TAP. TAP improves the BizTech value because it provides the Biztech team with feed back and evaluation regarding their innovation in a structured way from across the enterprise.

Extreme Blue

The Extreme Blue™ program is the IBM premier internship program for top-notch students who are pursuing software development and MBA degrees. Teams of students are given the challenge to develop the technology and business plan for a new product or service that addresses an existing market challenge. To date, through the program interns submitted more than 270 patent disclosures, contributed six projects to the open source community, helped create solutions for key clients, and brought to market the next generation of IBM products. Extreme Blue programs may create offerings that are suitable for Early Adopter communities to launch on TAP.

Community Programs

A *community of practice* is a group of people who share a particular interest around a work or a career related knowledge domain and participate in activities that are mutually beneficial to building and sustaining their capabilities. Members share a common identity and strategic intent, have a sense of purpose, a passion for their domain, and commitment to each other to build reciprocity and trust in a collaborative environment.

There are currently 43 communities of practice registered on the internal IBM communities' Web site, covering a wide range of both technical and business topics. A number of these topics support the idea of Early Adopter communities giving a trial run for specific offerings that TAP promotes.

1.3.4 TAP and cultural fit within IBM

TAP needs to leverage a bottom-up collaborative cultural to be successful. The *IBM Business Leadership model*, as shown in Figure 1-2 on page 5, supports the bottom-up culture using a values-based management style that focuses on communities to drive the cultural change. A company (or at least a group empowered through leaders within that company) must understand the value of community before the company can implement a program like TAP (see section 1.2.1, “Community value” on page 7). If a company does not value community, there is not a natural cultural fit of the program within the organization. Such a company could consider introducing programs and supportive technologies that can help drive the cultural changes necessary to maximize the benefits that a program such as TAP offers.

1.3.5 Organizational fit

The IBM Business Leadership model also highlights that an appropriate organizational structure is one of the four important components of the IBM execution strategy. Like many large companies, IBM is organizationally siloed. TAP helped to flatten out IBM by triggering the development of Early Adopter communities that bridged those silos. In a siloed organization, how can employees who want to share something reach a broad audience? TAP provides an organizationally independent innovation support environment that spans all organizations within IBM.

Organizations must focus on applying new technologies and not just on developing new technologies. To support a program such as TAP, most cost-effective organizations must be prepared to provide a low-maintenance IT infrastructure that can scale to support the hosting demands and Early Adopter interaction patterns that are needed for success.

TAP can help trigger organizational change in organizations that do not provide a natural fit for change. These organizations usually have a hierarchical organizational structure, where informal cross-business unit collaboration is limited and there are few, if any, cross-business unit communities. In organizations where the focus is on the traditional notions of productivity and output (billable hours or production rates), the staff has minimal time to participate in TAP community offerings and must find time outside of their day jobs to do so. If a cautionary, “its too hard” culture prevails within the IT department, this and other factors may discourage staff from participating in emerging technology pilots that the TAP program offers. Though such organizations may experience slower take up rates of TAP, the potential benefits, which we discussed in 1.2, “The TAP value proposition” on page 7, can still be attractive.

1.4 The evolution of TAP in IBM

Webahead, established in 1994, provides a hosting and technology lab that supports the introduction of new software. Webahead is a predecessor of TAP. The rapid success of TAP at IBM is partly attributed to Webahead's initial success. As a result, IBMers were already used to the notion of being able to access and pilot new CIO-sponsored software offerings in an activity outside the roles and responsibilities of their day jobs.

TAP started in 2005 with an initial core team of four: a project executive, a manager, and two staff members. One staff member was technical and the other staff member was business oriented; however, they both had similar conscientious work ethics and collaborative styles.

Because of the inception of TAP in 2005, IBM management consciously allowed TAP to evolve in an organic manner, free of excessive reporting and rigid performance criteria, which helps to ensure that TAP remains nimble in response to community demands, and that the innovative spirit of the program is not hampered by excessive constraints.

During 2006, as executive management recognized the potential of the TAP innovation program, additional resources were added to the TAP team and the reach and success of the program grew. In 2007, the program further expanded, and the focus of TAP shifted from increasing the sheer number of offerings and size of the TAP user community to accelerating the rate of *graduation*. Graduation means that an offering progressed in maturity, stability, and value such that it does not make sense anymore to continue hosting it as a pilot within an early adoption-oriented community portal.

1.4.1 Timeline

The program timeline in Figure 1-6, summarizes the evolution of TAP.

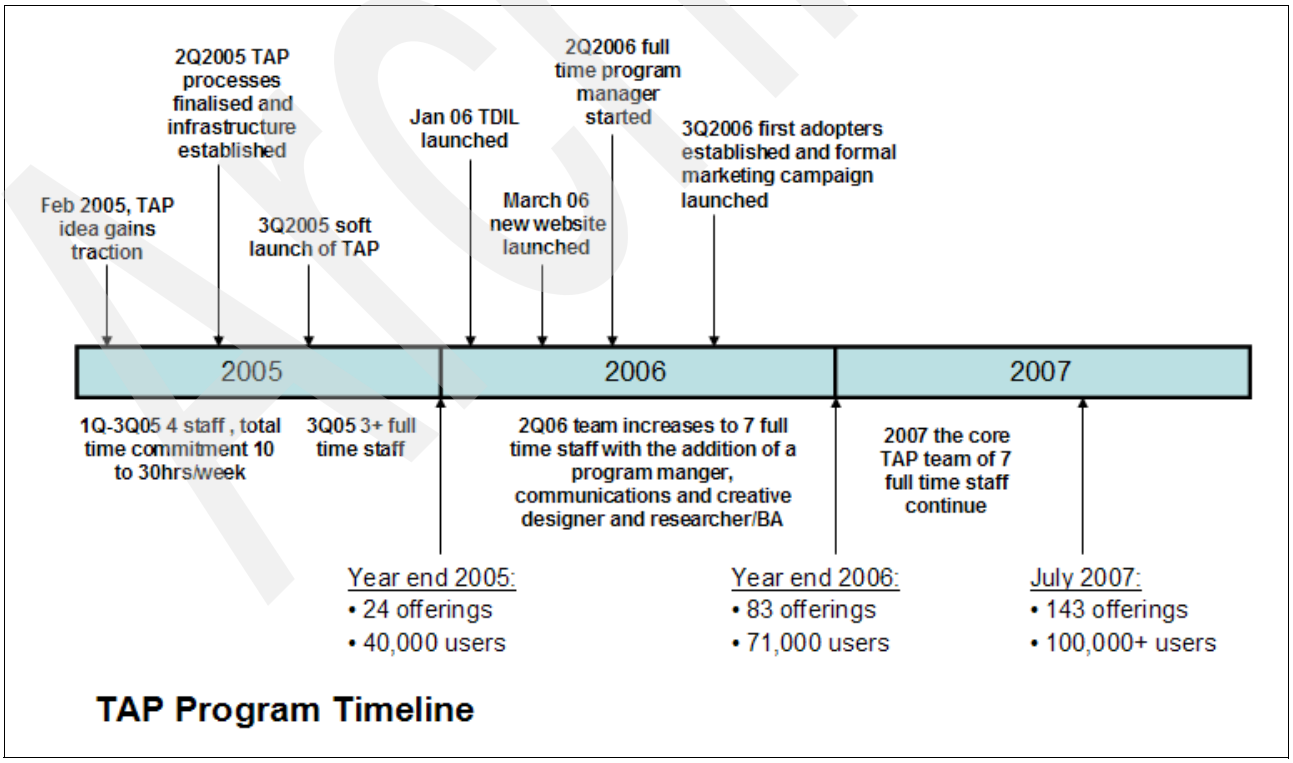


Figure 1-6 TAP program timeline

2005 - the initial idea and launch

The idea of TAP gained traction in February 2005 when an IBM executive asked the question, "how can we have a group of people always running the next generation of IBM technology on their systems"? The CIO office assigned a team that understood the value of communities to create an environment to support the goal.

Because there were already a number innovation initiatives in place at IBM, it was important to design and implement TAP so that it complimented the existing innovation programs and development labs: ThinkPlace, InnovationJam, Webahead, BizTech, and other advanced technology groups.

The key activities during the first six months were to establish a program and a Web site. In the first quarter of 2005, following the initial strategy meeting, a white paper was completed that outlined the TAP proposal and initial plan of execution. During 2005, the TAP program design continued to evolve as the program team continuously tried new things to see what worked best for supporting the target community.

The initial launch of TAP occurred in the third quarter of 2005. It was a soft launch, where an e-mail was sent to 40 colleagues. Afterwards, the word spread in a viral manner about this great new program called TAP. The TAP management was keen to adopt an informal rollout strategy to ensure that the early adopters visited the TAP site because they saw it as something of interest, not because their management told them to do so.

By the end of 2005, there were 24 TAP offerings posted on the TAP portal, and the TAP Early Adopter user community consisted of approximately 40,000 users.

2006 - the growth of TAP within a structured framework

In January 2006, the *TAP Dynamic Infrastructure Lab* (TDIL) was launched to offer hosting services to TAP innovators. The lack of readily available hosting services was previously cited as a major inhibitor to launching emerging technology pilots by innovators.

In March 2006, the second version of the TAP portal Web site was launched, which introduced a Web-based proposal form and innovator-controlled content to enhance the usability of the TAP portal for innovators. At this time, IBM Sametime® 7.5, a beta version of the IBM instant message product, was launched. The availability of the latest beta version of the Sametime client rapidly generated additional interest in TAP as users flocked to the TAP site to download the software.

In the second quarter of 2006, a program manager was added to the TAP team. The program manager played a key role in bringing structure and process in facilitating TAP offerings; thus, helping to ensure that a scalable framework was established to support further program growth.

In the third quarter of 2006, a *First Adopters community* of approximately 100 IBMers was established. First Adopters have first pass at new offerings and special access to value-quantifying tools. This community of technology enthusiasts help identify any major issues with new TAP offerings using evaluation tools that help quantify their experience. By the end of the third quarter of 2006, the total TAP community grew to approximately 50,000 users.

In the third quarter of 2006, a formal TAP marketing program commenced, which included the launch of *gizmo*, which was a graphical icon for TAP (see section 2.4.2, "Marketing program elements" on page 49). Along with gizmo, a new marketing campaign helped to inspire early adopters to ramp up participation.

In October 2006, the *Innovation Hosting Environment* (IHE) was launched to provide an intranet hosting environment for the TAP offerings that successfully progress through the TAP graduation process. At that time, the first group of offerings were graduated from TAP and guided to new production environments.

By the end 2006, there were 83 TAP offerings and approximately 70,000 TAP community members.

2007 - TAP process refinement and conversion of offerings

In 2007, TAP continued to mature as a framework for hosting innovative offerings. The organic, community-driven growth of TAP created new challenges for the program management team, who had to adapt their program management framework. This framework needed to scale to higher levels of offering throughput in a way that continued to encourage the community of early adopters to stay engaged in the design and feedback process for the TAP-hosted offerings and for the design of the TAP portal.

Also, the focus of the management team shifted from increasing the number of users and offerings to increasing the number of offerings that were converted to business value as a logical conclusion to, and stepping off point for, TAP-hosted offerings.

Currently, in December 2007, the team goals include processing 60 new offerings, of which 20 are targeted to complete their progression through the TAP life cycle by the end of the year. At the time of this writing, there are 143 TAP offerings and approximately 100,000 TAP users, or approximately 28% of the IBM total worldwide workforce.

1.4.2 Ongoing organic growth

Ongoing success for TAP requires that management continue to allow the program to operate in an organic way within the greater IBM environment, while also remaining committed to providing adequate support and development resources to the program. Those resources include sufficient funding to cover the headcount of the core TAP team and the costs of the associated support infrastructure.

We anticipate that TAP will continue to evolve in response to the needs of inventors, innovators, and the Early Adopter communities in the years ahead. In supporting this growth, management needs to consider which components they need to scale to support expected growth rates. The TAP management team is keen to maintain the self-service nature of the program to maximize the effectiveness of the non-cost scaling elements of the program. Opportunities include increasing the level of automation within the boarding process to minimize the level of active staff support that is required each time a new offering comes along. As the TAP Early Adopter activity continues to increase outside the Americas, deploying the TAP support infrastructure to the European and Asia Pacific regions could further enhance the support services that are available to innovators and early adopters in these regions.

The TAP team positions are considered rotational assignments, with a relatively short tenure that averages approximately 18 months. This regular rotation helps to keep the team vibrant and ensures a regular influx of new ideas and business perspectives to enhance the potential for ongoing organic growth.

To date, TAP focused on the innovator and early technology adopter communities within the organization. One of the growth opportunities for TAP is to connect and engage with the untapped external communities of business partners, customers, and academia in order to progress joint-innovation initiatives. In doing so, TAP can expand into the greater collaborative-innovation ecosystems that reside beyond the boundaries of IBM.

1.5 Introducing the TAP user experience

The TAP community portal is designed to be “sticky”, in the sense that the flow of new offerings and the activity levels that occur within the communities using those offerings, contributes to constantly changing information flows that the community may want to keep abreast of. Figure 1-7 on page 20 shows a snapshot of the actual TAP community portal home page as it appeared on the IBM intranet in October 2007. To introduce you to the structure of the site, some content and component highlights in this sample page include:

- A top menu bar that provides the following site navigation options:
  - TAP Home, which is the starting page for TAP, as shown in Figure 1-7 on page 20.
  - Offerings, which presents a browse and select view of all offerings.
  - Propose Offering, which presents a form-based submission process.
  - What is TAP, which are program description pages.
  - Innovation Enablers, which are descriptions and links to other innovation support programs.
  - Events, which is a calendar of TAP program events.
- Other sections of the Home page:
  - Latest Offerings and Most Popular dynamic link lists
  - A “TAP Spotlight” program news and feature stories abstract list
  - A “TAP Media” featured content list
  - A “Who’s on TAP?” list of personal Innovator, Early Adopter, and other community member stories
- A right-side column that features a quick “Browse all offerings” selection list, offering proposal links, a tag cloud, and a program survey widget.

Personalizing the content in the page, with emphasis on identifying and showing pictures of community participants, is an important design goal that ensures that the site feels as community oriented as possible. Because both the community participation patterns and the set of offerings are dynamic, each of the sections of the home page are updated automatically as new offerings are added or newsworthy events, related to any currently hosted offerings, occur.

Figure 1-7 shows the TAP community portal home.

Figure 1-7 TAP community portal home

For curious IBMers who are interested in joining the TAP community, Figure 1-8 shows the portal page that defines the Early Adopter and Innovator roles within TAP.

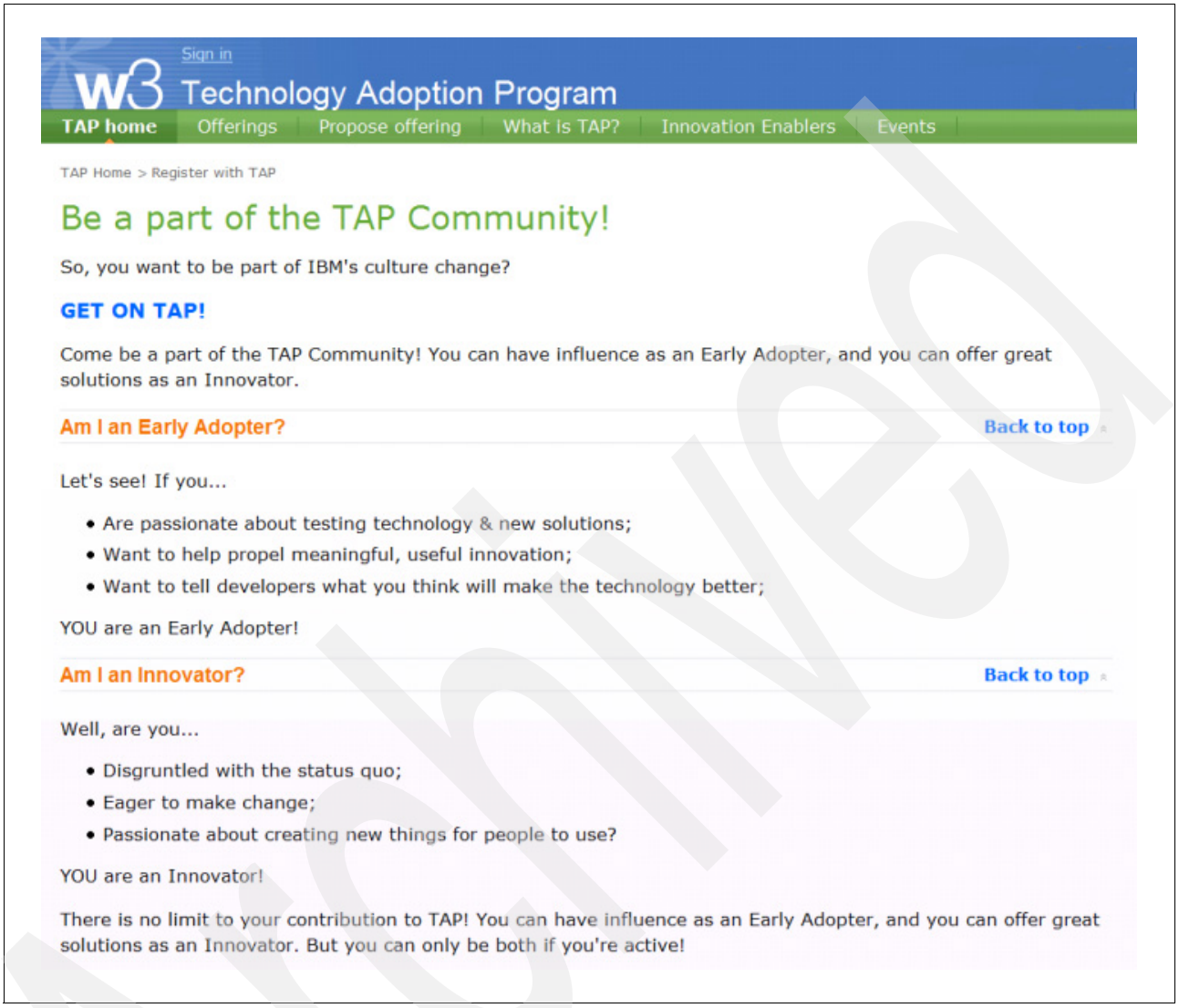


Figure 1-8 TAP communities

Figure 1-9 on page 22 shows a snapshot of the Offerings page on the TAP portal. In this example, the user is interested in the “Cattail” offering. Before the user clicks the link to the Offering page, the mouse hovers over the link to show the Offering Details pop-up box. Each offering is listed with the business unit and name of the primary Innovator who is providing the offering. Again these elements show how much emphasis IBM places in the portal design to highlight personal connections between the Innovators and the community.

Figure 1-9 is a snapshot of the Offerings page on the TAP portal.

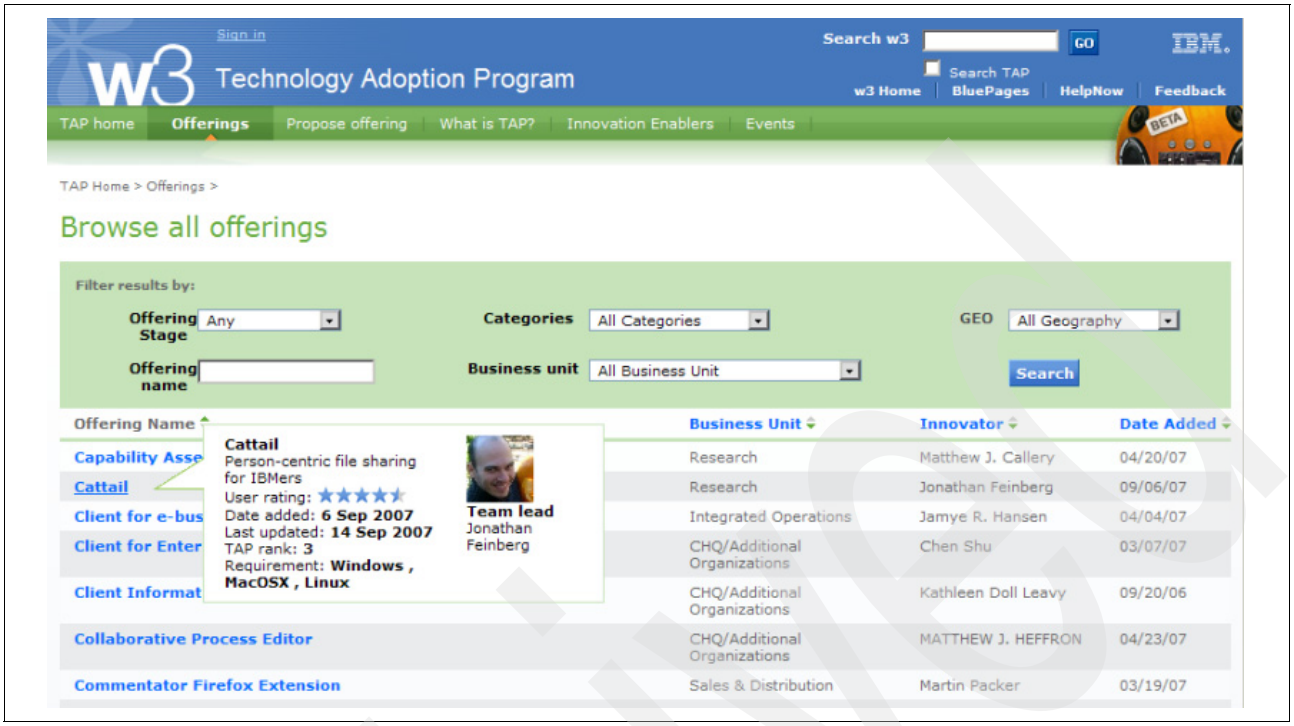


Figure 1-9 Browse offerings in TAP

After the user clicks the link to the offering, they arrive at the Offering page. Figure 1-10 on page 23 shows a portion of the Offering page for the “Cattail” offering. The main content elements on the Offering page are:

- A set of tabbed page links that provide access to:
  - The offering “Overview”
  - A dedicated forum for Early Adopters participating in this offering
  - A Downloads & Support page
  - A More Information page
- A large graphical link to “Access this Offering” in the upper right of the page.
- A visual “Offering Status” indicator. In this case the status needle indicates that the offering is in “Early Adoption” phase.

Figure 1-10 shows a portion of the Offering page for the “Cattail” offering.

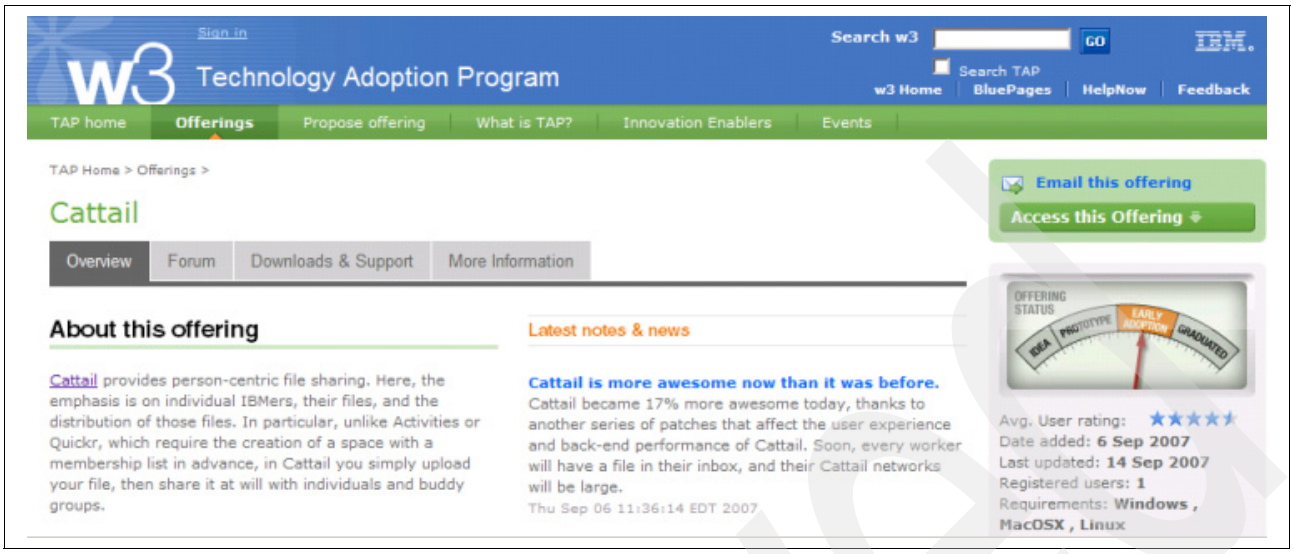


Figure 1-10 Offering detail page

Finally, we conclude our introduction to the TAP user experience by showing, in Figure 1-11, a portion of the “What is TAP” page within the community portal.

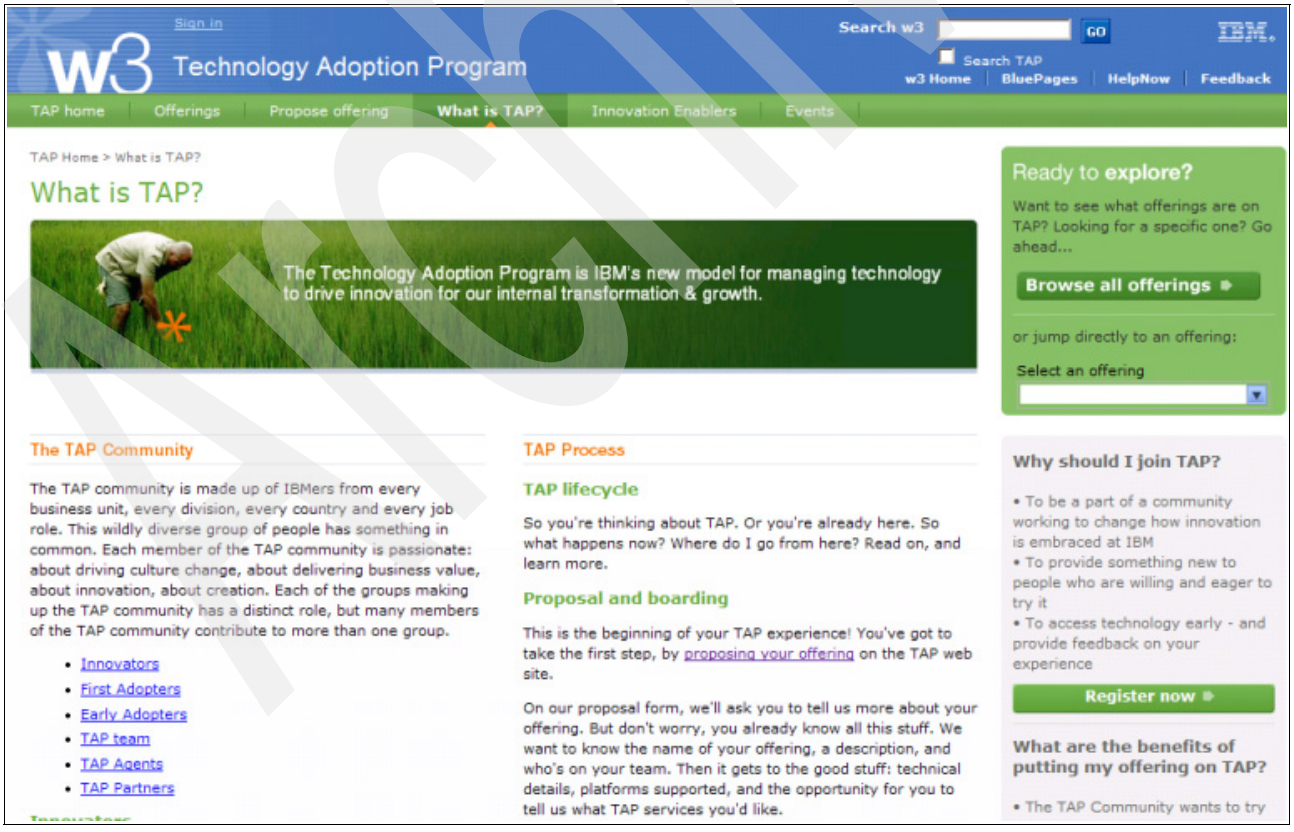


Figure 1-11 What is TAP?

2

Technology Adoption Program framework

In this chapter, we provide an overview of the Technology Adoption Program (TAP) framework. We discuss the following topics:

- First, we describe the TAP value framework and governance processes.
- Second, we define the TAP team roles, responsibilities, and the characteristics of each of the key groups within the TAP community: the Innovators, the First Adopters, and the Early Adopters.
- Next, we describe the TAP offering life cycle.
- In the final section, we provide an overview of the TAP marketing program, which is a key to the rapid success of the program in IBM.

2.1 The TAP framework

You can group the different activities within the overall TAP management framework into three distinct phases. We describe each phase in the following sections. Program governance exists at multiple levels within this framework, first and foremost at the community level and also at the management and executive levels. We discuss this governance in 2.1.2, “TAP Governance” on page 27.

2.1.1 The TAP value framework

Figure 2-1 shows a high-level overview of the TAP framework, which consists of three key phases:

- The *set expectations* or initial value assessment phase
- The *Early Adopter* feedback and assessment phase
- The *value proposition* phase

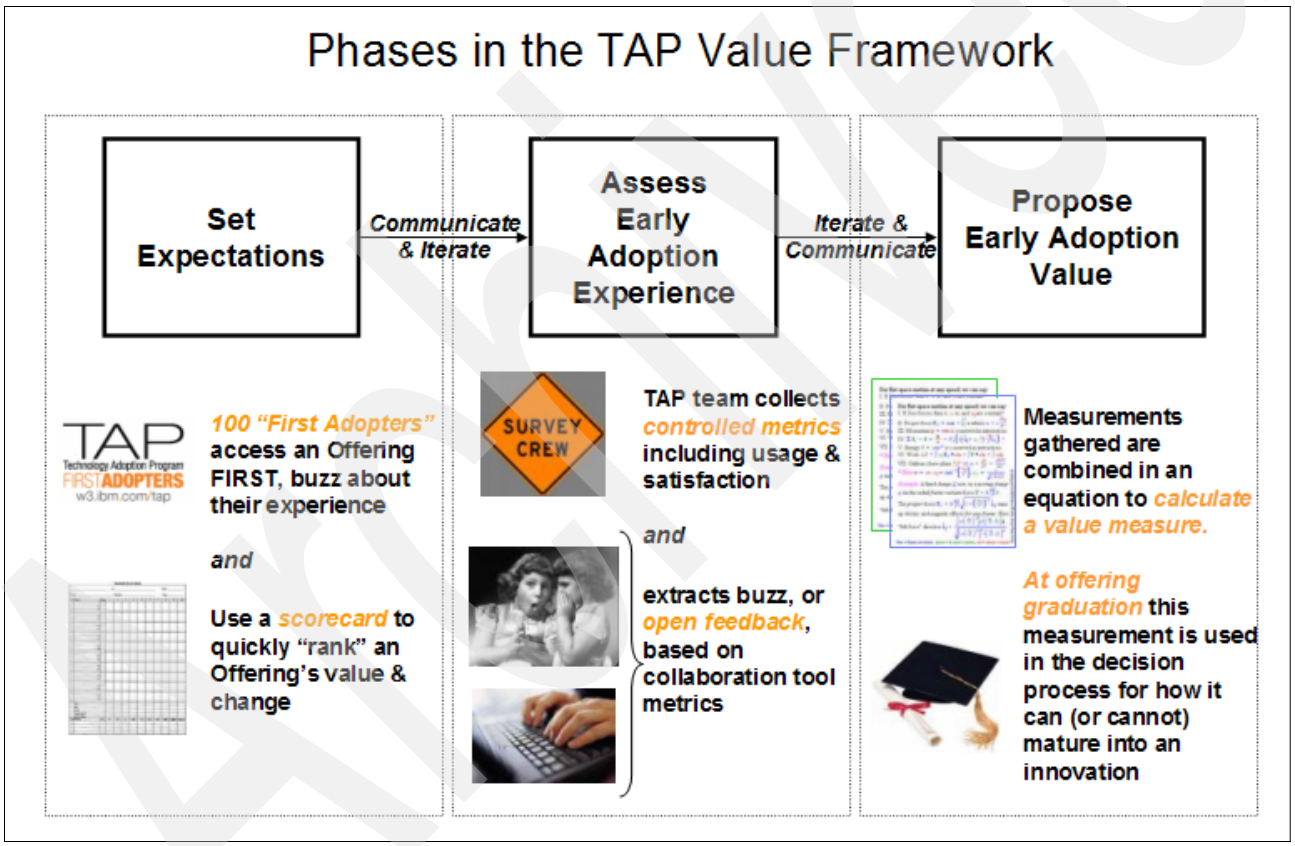


Figure 2-1 TAP value framework phases

First phase: setting expectations

During this first phase, innovators collaborate with TAP's *First Adopter* community. They collaborate and give qualitative feedback in the offering forums and give innovators the opportunity to quickly modify and refine their offerings, if appropriate. They provide quantitative feedback in a 20 question scorecard to quickly rank the offering against a relative benchmark that is used for all TAP projects.

Second phase: early adoption

During the early adoption phase, the offering is made available to the TAP community. At this point, the offering is generally available to all IBMers. *TAP community* encompasses all of the IBMers who already participated in at least one TAP offering, or are planning to participate in the new one being offered. The IBMers who are planning to participate in the new offering are called the Early Adopters. The Early Adopters try the offering, talk about it on forums, fill out surveys, blog about it, answer surveys, and rate the offering on a scale from one star to five stars openly, on the TAP Web site, for all to see. The TAP management team then aggregates the feedback and measures usage statistics, user satisfaction, and the "buzz" associated with the offering. We provide details regarding the measurement processes in 2.3.6, "Assessment and evaluation" on page 47.

Third phase: value proposition

In the final value proposition phase, the TAP management team combines the input from the initial value assessment with the Early Adopter feedback. From this data, an overall evaluation metric is assigned to the offering, and a general assessment is completed based on the written feedback from Early Adopters. The TAP team also offers additional specific recommendations for the next steps for the offering. These steps involve progressing into a production environment offering, returning to the drawing board for further refinement, or retiring the offering.

2.1.2 TAP Governance

TAP governance exists at multiple levels: at the executive level, the program management level, and at the First/Early Adopter community levels. Governance of TAP in IBM was intentional biased toward the communities as the most influential part of overall governance. We expect any program like TAP is most successful when governance is primarily community driven, and the governance model evolves as necessary to meet the needs of the communities that sustain it.

This is not a new concept, for example, Thomas Paine from the American Revolution is often remembered for his statement "*that government is best which governs least*." The IBM CIO believes that this same principle apply to the governance strategy for any business applications that are principally community driven, within an enterprise 2.0 context. That is not to say that the ideal situation is no governance. Proper levels of governance are still critical. But the governance model must not be dictated by traditional top-down IT business management methods. Instead, the governance model should be primarily influenced in a bottom-up way, by the needs of the TAP Innovator and Adopter communities.

At the community level, IBMers from every business unit, division, country, and job participate in testing and evaluating the offerings on TAP. The community code of conduct provides simple terms and conditions to help them unite constructively around their common goal of accelerating innovation at IBM. The fundamental role of governing the introduction of new technology within the TAP framework is performed by these communities.

TAP Governance: A program like TAP is most successful when governance is primarily community driven, and the governance model evolves as necessary to meet the needs of the communities that sustain it. For more about the importance of community- driven governance, see Chapter 3, "Understanding community" on page 57.

At the executive level, the CIO office promotes, oversees, and steers the program to ensure that all of the necessary resources are assigned to the program, as we discussed in section 1.3.1, "The IBM CIO office and TAP" on page 11.

We do not underestimate the importance of the role that the full-time TAP management team plays within this governance framework. The TAP team acts as mechanics to keep the TAP machine running smoothly. The TAP team provides a range of services to connect the communities together. It currently consists of six full-time staff, who are experts in consulting, project management, technology and infrastructure, marketing, communications, and creative design. Their work helps to drive cultural change in IBM, accelerate innovation, and deliver solid business value. The TAP team also enlists the support of *TAP Agents* and *TAP Partners*, who provide support and guidance on an as needed basis.

Tap Agents

TAP Agents are a group of seven subject matter experts (sme) who provide support and guidance to TAP innovators on how to mature TAP offerings for production deployment. As high-value offerings are identified, and then approach graduation from TAP, the TAP team gathers information from the Innovators for the TAP Agents. The Agents group includes representatives from various IBM organizations: intellectual property law, the Accessibility Project Office, the user experience group, the Deployment Excellence Program, technical representatives who are supporting existing enterprise applications, and the internal Innovation Hosting Environment (IHE).

TAP Partners

TAP Partners are a group of approximately eight-to-twelve business transformation advocates from a range of IBM business units, including Software Group, Systems and Technology Group, Research, Sales and Distribution, Global Business Services, Global Technology Services and Global Financing. They support TAP by assisting with identifying and enlisting executive sponsors for TAP offerings with high-value potential within their business units. The role of TAP Partners is important to ensure the successful transition of potential high-value offerings.

2.2 Team roles and responsibilities

Figure 2-2 shows that the TAP management team is balanced by a mix of employees who have skills in project management, systems engineering, process design, and user-centered application design. One or more people perform each of these functional roles. The team members within each functional area are responsible for a specific set of objectives.

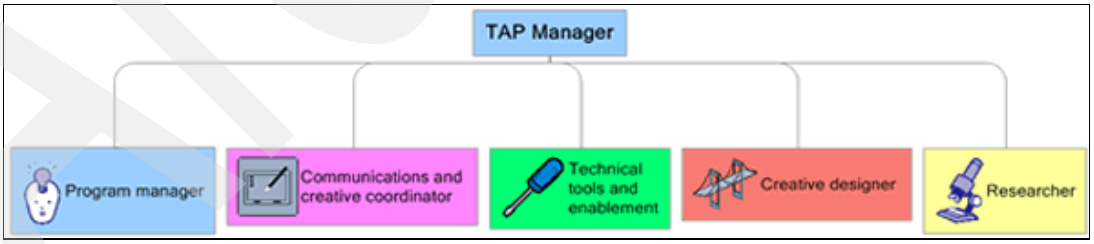


Figure 2-2 TAP organization structure

2.2.1 TAP management team

Table 2-1 outlines the individual roles and responsibilities of the TAP management team.

Table 2-1 TAP management team

Role(s)	Responsibility
Manager	An overall manager that provides the vision and leads the team: ► The manager acts as the key program spokesperson, establishing key program relationships with the different IBM business units. ► The manager works in close consultation with the program manager to continuously set and direct program strategy execution. ► The manager is also responsible for all traditional personnel staff management tasks for the program staff.
Program manager	A process-focused project manager who develops, implements, and continuously refines procedures that drive the end-to-end offering management process within TAP. Emphasis is on establishing and optimizing the processes that are needed to support community vitality, growth, and measurements: ► The program manager works closely with the overall manager to evangelize the program and to respond to the needs of the adopter communities in ways that nurture growth and cultivate interest. ► The program manager is the “face” of TAP.
Technical tools and enablement	This person and sub-team manages the design and delivery of the supporting applications. This person is concerned with how content, function, and other TAP Web site services are supported, integrated, and presented to the user community.
Creative designer	The designer provides creative talent for the program. The focus is on graphical and interactive media.
Business analyst	Focuses on researching management practices, community activity analysis and measurement, focus group interaction, and surveys.

Note: In the following sections we define the team roles and responsibilities, which presents a snapshot of how the roles and responsibilities are currently implemented. These descriptions may give you the impression that TAP is a very structured, formal process-driven program. We should emphasize that the TAP program organically evolved into its current form through a series of creative, unstructured design and testing activities. To remain successful, the TAP program management processes must be able to easily evolve to meet the needs of the community. See 3.1, “Community: a cornerstone of TAP strategy” on page 58 for more discussion on how community needs drive TAP program design and strategy.

TAP manager

The TAP manager is concerned with developing people, guiding and promoting the vision and TAP community, and maintaining program relationships. On a daily basis, the TAP manager engages in a variety of interactions with other team members, community members, and adjacent organizations

The TAP manager provides oversight, direction, and leadership for TAP. The manager continually builds and optimizes team priorities and activities in four strategic areas. Table 2-2 outlines the four strategic areas the TAP manager is responsible for.

Table 2-2 TAP manager

Strategic area	Description
Value framework	TAP provides tangible business value to IBM.
Infrastructure	Infrastructure includes hardware and software and business processes and technical best practices.
Community	The TAP community is a key strategic part of the environment because the community continuously drives throughput and adoption of products presented for them. The community has a direct impact on TAP processes.
Cultural change	Social networking and collaborative interactions coupled with optimized business and technical processes create a social dynamic that causes a natural draw of people to the environment. This results in a cultural change to the organization.

The manager selects people and enables them to develop and use skills in all of these strategic functional areas. People with a passion for emerging technologies and good teaming skills thrive in TAP. Additionally the manager uses these guiding principles:

- Staff TAP with rotational employees who are ready for a challenge and who are committed to being part of a high performance team.
- Include passionate people with strong skills in either process and program management, Web design, Web 2.0, and technical skills.
- Establish regular group meetings to discuss and work through issues across functional areas.
- Adopt a team-based, collaborative working environment.

The TAP manager spends a significant amount of time marketing TAP internally and externally. Internal promotion of TAP within IBM requires ad-hoc and formal presentation of the TAP vision and community-based approach. The manager builds relationships with many technical product development and delivery organizations. Common discussion topics include business value and general processes. Other topics include questions regarding new opportunities, for example, "What else can I do with TAP" and exploratory conversations about how TAP can be used as part of the overall IBM strategy.

Program manager

The program manager defines, creates, and manages processes and workflows for TAP. Because TAP is a community-based program, project management and community building skills are essential. The program manager serves as the primary interface between the Innovator and Adopter communities and the program management staff, the supporting systems, and the end-to-end offering process model. In this capacity, the program manager becomes the most familiar with the day-to-day pulse and activity levels of the program.

The program manager must plan and execute workflow designs and practices that most efficiently drive new offerings through the TAP processes. Because of the volume of offerings flowing through the program and the community-driven nature of the environment, the program manager must be creative, innovative, and efficient in how he or she conducts day-to-day management of the offering process workflow. This person needs to fully understand the underlying community-driven dynamics that make a program like TAP successful, and at the same time not inhibit those dynamics while still implementing a structured, process-oriented workflow for growing, managing, and measuring the program throughput. Table 2-3 outlines the areas of responsibility for the program manager.

Table 2-3 TAP program manager

Process	Description
Offering management process design, maintenance, and execution.	This process includes identifying, boarding, developing, evaluating, valuating, and graduating.
Community management	This process includes growing the TAP communities, such as the first adopters community.
Ongoing offering management	This process involves the continual refinement, evaluation, assessment, metrics, and measurement loop. The focus is on how these components manifest themselves in the program management process.

The program manager assists throughout the entire offering life cycle: the boarding, early adoption, and graduation phases (we described the phases in detail in 2.3.1, “The TAP offering life cycle” on page 36).

In addition to the day-to-day process management tasks, the program manager also focuses on:

- Evangelizing the program and offerings
- Managing relationships
- Advocating for the program and its communities
- Communicating between program development, different product development teams, and other IBM business units
- Defining requirements for a self-service TAP program tool that supports process efficiency and community participation
- Working with the TAP team to provide forums and surveys to create an integrated feedback loop for users to communicate and gain assistance with offerings.

At the end of the TAP life cycle, depending on the next steps for the offering, the program manager might initiate conversations and further work with cross-divisional teams, for example, if an offering is to progress to the production or supported product offering phase, the program manager assists in brokering the relationship between the offering team and the product development and test teams that are responsible for taking over the offering.

Technical tools and enablement

The technical tools and enablement role is concerned with how to deliver TAP to the community as a user friendly, self service-oriented system. The service is designed to ensure that it is easy for TAP Innovators to create and promote offerings and to ensure that the early Adopter community has an inviting and stimulating user interface experience. It is comprised of hardware, software, resources, and community members. The technical tools help to manage the system by combining and optimizing resources. The technical enablement team interacts with all of the system components, including the hosting environment and the

systems behind the community user interface. They help optimize service delivery and design the infrastructure elements that are needed to support TAP.

Table 2-4 summarizes the activities of the technical enablement team.

Table 2-4 Technical tools and enablement

Task	Description
Design, implement, and support the technical hosting environment.	By creatively adapting hardware and software resources to support necessary hosting requirements.
Provide or promote efficiencies in dynamic, self-service system-provisioning environments.	Reviewing system performance metrics and optimizing the environments, as appropriate.
Deliver tools and services.	Tooling supports the community members who participate in the program and collaborate with the community.
Functional design of the TAP portal	Concerned with what is exposed, access levels, and security.
Recognize the need for varying levels of technical enablement and interlock.	Enablement methods vary with respect to community and user skill levels and needs. The technical enabler adapts as necessary.

Creative designer

The TAP design team provides creative talent with graphical and interactive media. They work with the creative coordinator to develop all TAP communications. They also work with Innovators who might require assistance with design elements, for example graphic images and Web site experiences of the offering while hosted on TAP. We provide examples of the creative designers' creative work in 2.4.2, "Marketing program elements" on page 49.

Business analyst

The business analyst (or researcher) role performs research. The TAP researcher or team provides metrics information to help the team make decisions and implement best practices for resource management. The researcher role is flexible, and a short or long-term intern can perform the functions. The researcher works with the other members to provide program and analytical support functions, such as:

- Community trend analysis: tracking participation levels and usage patterns based on geographic and business units across IBM.
- Program valuation metrics: gathering and analysis.
- First Adopter support.
- Survey creation: constructing templates for innovators who require feedback about their offerings.
- Survey analysis: creating reports for Innovation teams regarding the feedback from their mini survey and 20 question survey results.

The researcher creates, maintains, and provides specific surveys for Innovators to help them determine how best to promote their offerings. The focus is Early Adopter evaluation.

Surveys are sometimes used on TAP in the offering download process. Typically, when users begin to download an offering, they are presented with a brief form that they must complete in order to access the offering download page. After tens, hundreds, or even thousands of people download the offering, the researcher analyzes the results.

An example of a basic analysis survey is:

Question: I rely on a mobile device for business critical information.
Response percentage: 70% of people respond yes and only 30% respond no.
The simple analysis: Many people are now relying on mobile devices for business.

Figure 2-3 is an example of the survey for an offering called “Metaverse”. After the Early Adopter completes the survey form, they are redirected to the offering access page.

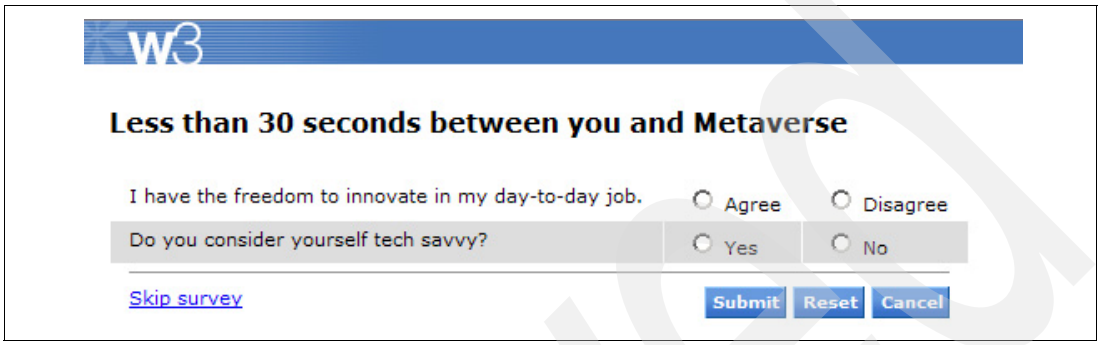


Figure 2-3 Sample TAP offering survey

The researcher also compiles the results from surveys that the periodically TAP First Adopter community collects. These surveys are a key part of the formal measurement process for TAP, and they include questions that are focused on usability, performance, functionality, and reliability.

The researcher also compiles and analyzes collected demographic and business unit information, which involves comparing different geographic and business units, within IBM, to help identify gaps in user communities. The program manager and communications coordinator uses the results to address the gaps. This is possible because of linkage to demographic data in the IBM employee directory.

Communications and creative coordinator

The communications and creative coordinator helped to grow the participation levels in the TAP program by using creative ways to reach target communities of Early Adopters. In this process, they leveraged the existing Web 2.0 technologies currently in use at IBM. The role is similar to a classic integrated marketing role, where the approach is to identify and connect to the various channels using appropriate information resources. The communications and creative coordinator designs, plans, and creates promotional materials to drive the social networking aspects of the TAP community. Table 2-5 provides examples of the promotional materials that the communications and creative coordinator are responsible for.

Table 2-5 TAP promotion

Promotional areas	Description
General TAP	Annual reports, Newsletters
Specific TAP offerings	Newsletters, Spotlights (prominent features on the Web site)
TAP community engagement	TAP Media series, tent cards, postcards
Informational broadcasts using IBM Sametime	Most IBM employees use IBM Sametime instant messaging throughout the business day.
TAP home page, RSS feeds, event calendar	Provides timely information for frequent and infrequent users about upcoming events and activities.

2.2.2 The TAP user community

Employees who participate in IBM TAP can come from any IBM organization, business unit, division, geography, and job role. Even though participants in TAP can have broad and diverse backgrounds, they are still grouped together within TAP into three distinct roles. Many members of the TAP community contribute to more than one group.

Table 2-6 outlines the TAP community user groups.

Table 2-6 TAP user community

User groups	Description
Innovators	Innovators create and propose offerings for the TAP.
First Adopters	A focus group of Early Adopters that volunteer to complete extra offering feedback tasks.
Early Adopters	The next group of people, after First Adopters, who download and participate in offerings.

Most TAP community members seem to share certain characteristics. They are passionate about driving technical and process innovation, and they are aware of the cultural change that community-oriented programs can generate. At the time of this writing, over 100,000 people belong to the IBM TAP community, and this diversity of business and technical expertise propagates through interactions with TAP offerings.

There are forums for each offering, where users can report on their offering experiences and benefit from the shared expertise of others participating in each offering. This information is readily available to the offering teams who can use it to improve the offering. In this way, the user community participates directly and impacts the technology development process.

TAP Innovators

The Innovators create the offerings that are hosted on TAP, and they are the key developers, team leaders, and project managers behind the initial creation and on-going support of TAP offerings. The Innovators might also be the same IBMers who proposed the original ideas behind those offerings. Alternately, they might be synthesizing the ideas and feedback from multiple sources within the company to create something new and worth sharing with others. TAP helps innovators by connecting them to the rest of the TAP community. Innovators may create offerings as part of their day job, for example if they are from a research group or a lab, or they may create them in their own time. Many TAP Innovators seem to share the following characteristics and reasons for participating in TAP:

- A drive to create with the intent to make things better.
- A desire to improve upon the status quo.
- A desire to contribute to measurable change.
- A desire to connect to other IBMers from different organizations.
- A desire to create and share new technologies, methods, and innovations, and to be recognized for those contributions. They see TAP as a vehicle to differentiate themselves relative to their professional peers using over-and-above efforts by developing and launching innovative offerings.

After their offerings are accepted into the TAP program, Innovators must support those offerings during the initial launch and during subsequent community uptake and usage. In general, the Innovators are primarily responsible for making sure the TAP community has as

much information and support as possible to support the usage of their offerings. Some of their activities in the community include:

- Performing the initial presentation of the offering and interviewing the TAP program manager.
- Developing supporting documentation and information to assist both the program manager and the Early Adopter community.
- Responding to First Adopter user questions during the initial pilot phase.
- Improving the offering, continuously, as the Early Adopter community begins to test and provide feedback.
- Assisting with the assessment and evaluation process.
- Working with the TAP management team and other sponsors to ensure that the offering is graduated to the appropriate next steps, if necessary.

TAP First Adopters

Not everyone can be first, and not everyone wants to be. TAP First Adopters are a group of approximately 100 hard core Early Adopters, who come from all lines of the business. Table 2-7 summarizes the activities of the TAP First Adopters.

Table 2-7 TAP First Adopters

First Adopters	Description
Test early versions of code	They tend to tolerate buggy code more then others.
Learn about new TAP offerings	They are driven to test and want to be first to try things out.
Respond to questionnaires about their offering experiences (in surveys and forums)	► They readily communicate details that help the offering teams improve their offerings. ► They frequently complete quantitative scorecards and offer stimulating discussions in the forums.

Table 2-8 details the resources that TAP offers to First Adopters.

Table 2-8 First Adopter resources

Resource	Description
Forum	The TAP team moderates the TAP forum and allows interaction and information exchange between TAP First Adopters.
Wiki	Reference point for upcoming events.
Offering forum and scorecard	Each offering has its own forum and associated quantitative scorecard. The TAP requests that First Adopters complete both and provide specific details.

TAP Early Adopters

TAP Early Adopters make up the largest segment of the TAP community, with more than 100,000 individuals at the time of writing. Anyone can be an Early Adopter and many share the following characteristics:

- A willingness to participate and interact with technical people in the TAP community.
- A curiosity and passion for testing new technologies and solutions. They actively seek out the latest technologies that can help them to be more effective in their “day jobs”.
- A desire to contribute to open innovation.

- They are opinionated, vocal participants in supporting the use of emerging technologies within their own organizations.
- Providing information about their TAP offering experiences and exchanging ideas with the TAP community is important to Early Adopters.

TAP Early Adopters come to the TAP portal home page to learn about TAP and the offerings that are available there. When they want to access an offering, they are reminded that TAP is not just a download hosting facility. It is a community portal, which is designed to support access to the offerings and to provide access to a rich set of user and management-oriented feedback channels, as well as other various community-oriented information feeds.

2.3 TAP process

In this section, we describe the TAP offering life cycle and the program management process as they exist today to support the evolution of TAP offerings.

TAP was designed to present a low bureaucracy, self service-oriented environment to the Innovator and Early Adopter communities. With that design goal in mind, under the covers it is still vitally important that you have a well-defined process for managing the flow of offerings and the ongoing interactions with the communities.

Important: There is no magic process for creating innovation; however, there are many ways that companies can facilitate innovation-oriented cultures and business practices. TAP is a program that demonstrates measurable business value in facilitating innovation within IBM. There is an offering "flow" that occurs within TAP, with some key Innovator and Early Adopter interaction points. The "process" we describe in this section is not designed to create innovations; instead, it is a process for managing the community-driven TAP offering life cycle.

2.3.1 The TAP offering life cycle

The *TAP offering life-cycle* process commences when the program manager brings forward a prototype offering that the Innovators created. During the subsequent boarding phase, the various details that are necessary to qualify and to support the offering are presented. After the offering is hosted on TAP, then the Early Adopter community begins to pilot the offering, if it looks interesting, and provide feedback to the Innovator, if they choose to do so. During the assessment and evaluation phase, both quantitative and qualitative feedback is assessed, and a recommendation is made regarding the future of the offering. In the final graduation phase, the offering may progress to a production environment for either internal or external deployment, return to the drawing board for further development, or retire.

In Figure 2-4, we show the typical offering deployment timeline, where the shaded boxes indicate when some level of dedicated involvement is required by the participants according to each phase of the process.

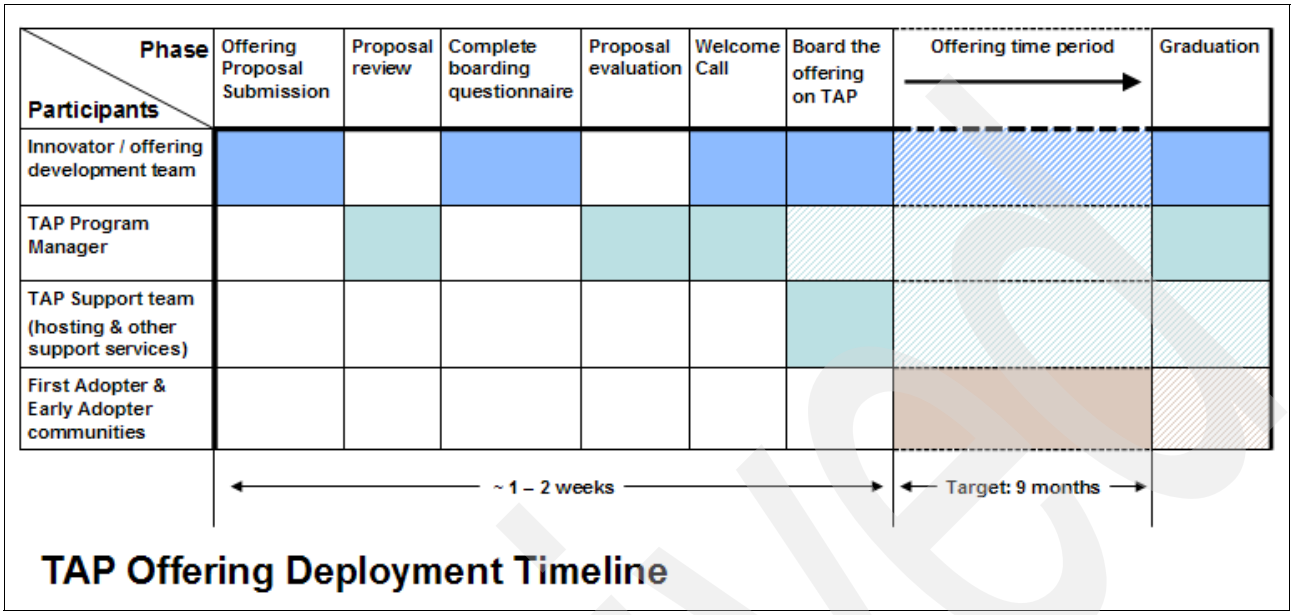


Figure 2-4 TAP offering deployment timeline

2.3.2 Innovation proposal

The TAP process starts when Innovators from any IBM division or group create something or join with others to create something. After they develop it into a technology prototype, they propose it to TAP as an offering that is ready for boarding. The proposal process requires completion and submission of a multi-part form. The form captures all of the initial offering information that will be included in the TAP portal after the boarding process is complete. The process of preparing and submitting an offering proposal occurs in multiple steps. The information that TAP needs to capture from the Innovator is shown in the sequence of figures, beginning with Figure 2-5 on page 38 and ending at Figure 2-11 on page 43.

Figure 2-5 shows the initial type of information that TAP needs to capture from the innovator.

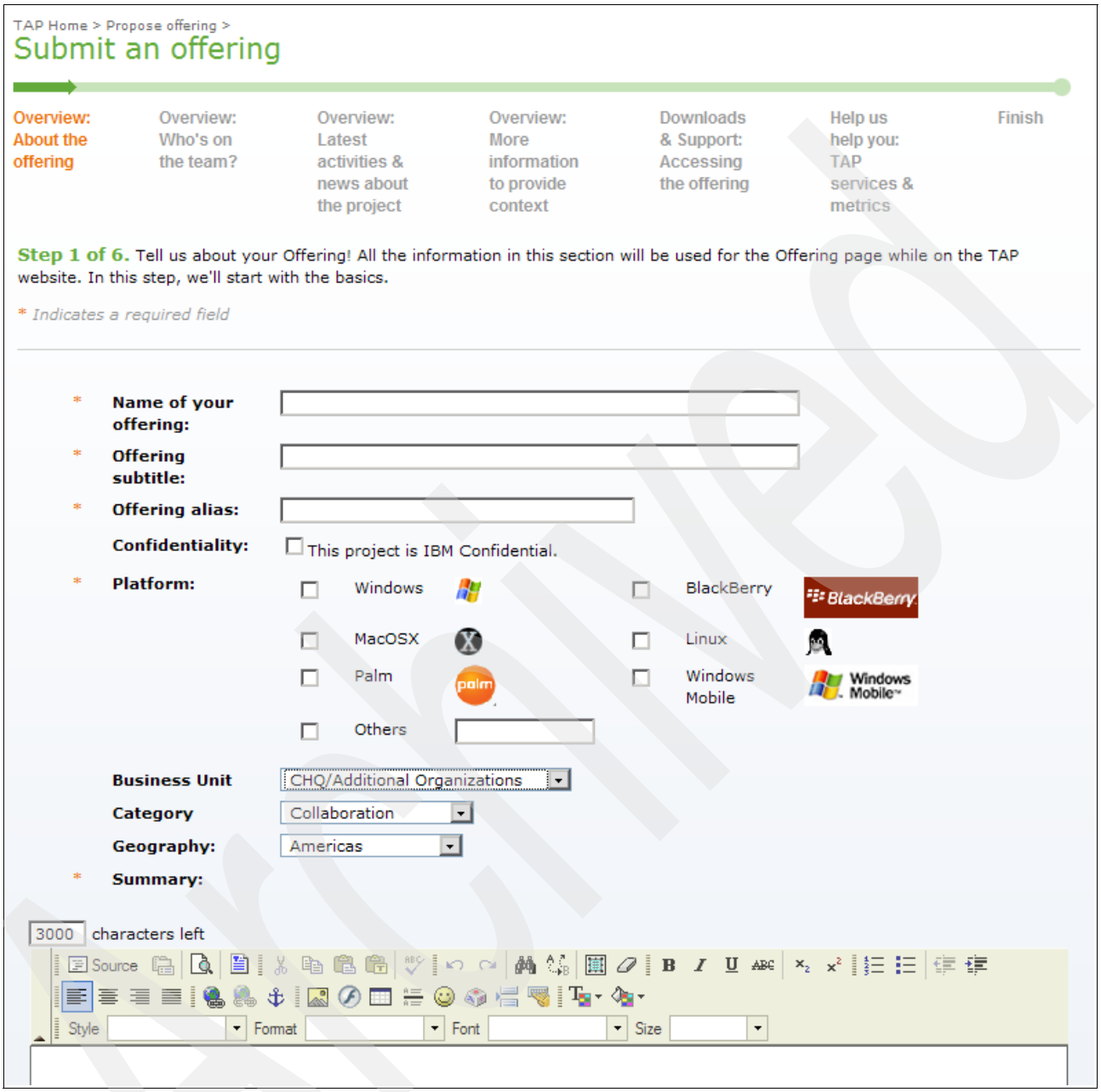


Figure 2-5 Submit an Offering: Overview

During the submission process the user is reminded that the TAP system is designed to be as self service as possible:

- The information that they provide in the forms is what shows up on the Offering page when it becomes available on the TAP Web site.
- They can continue to manage information about the Offering page after the Offering goes live on TAP.

After providing overview information, the user is presented with a form that is used to define who the members of the Offering team are, as shown in Figure 2-6.

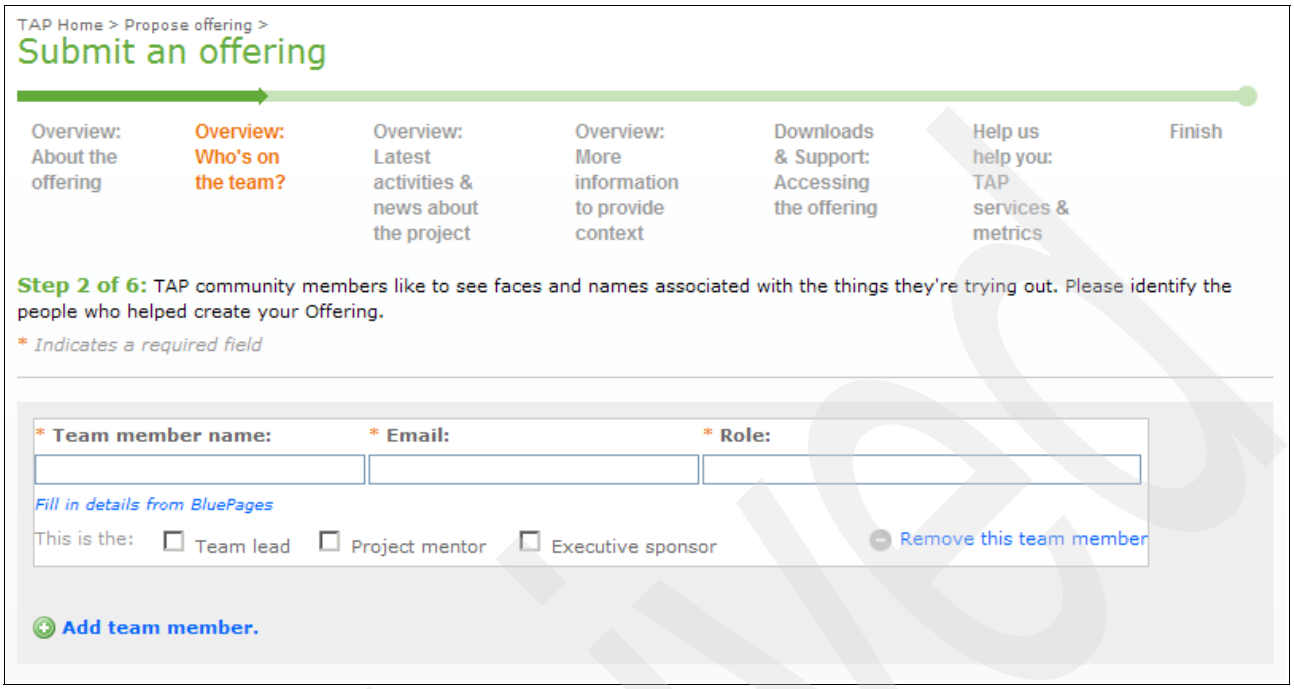


Figure 2-6 Submit an offering: team members

During the lifetime of a TAP offering, the user can share news updates with the community. The next form allows the user to submit an initial news item about their offering (Figure 2-7 on page 40).

In Figure 2-7, the user submits an initial news item about their offering.

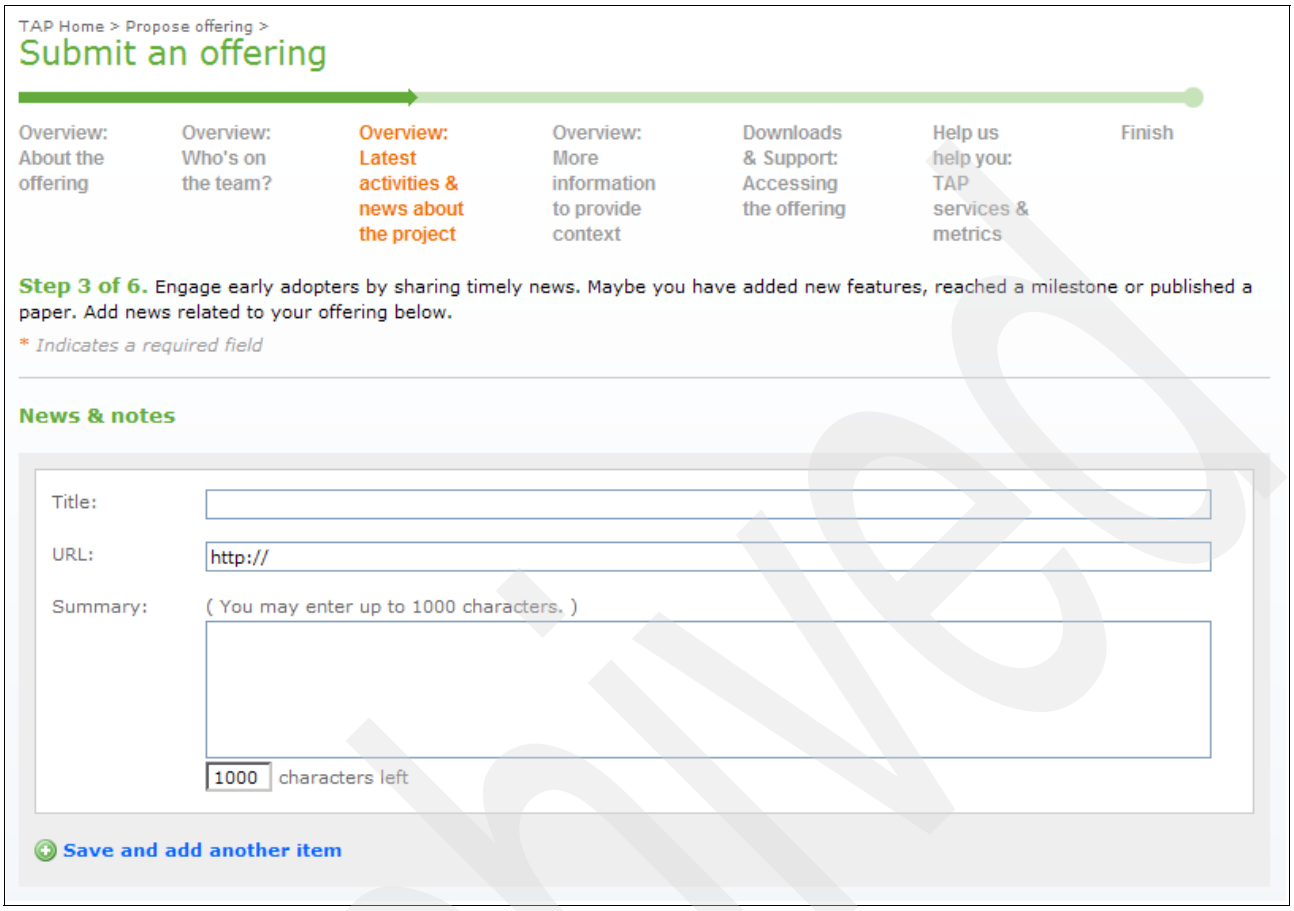


Figure 2-7 Submit an offering: news and activities

The user also needs to provide hyperlinks to additional information and reference materials. Figure 2-8 shows the next form in the process where the user can add the hyperlinks to the correct section of the Offering page.

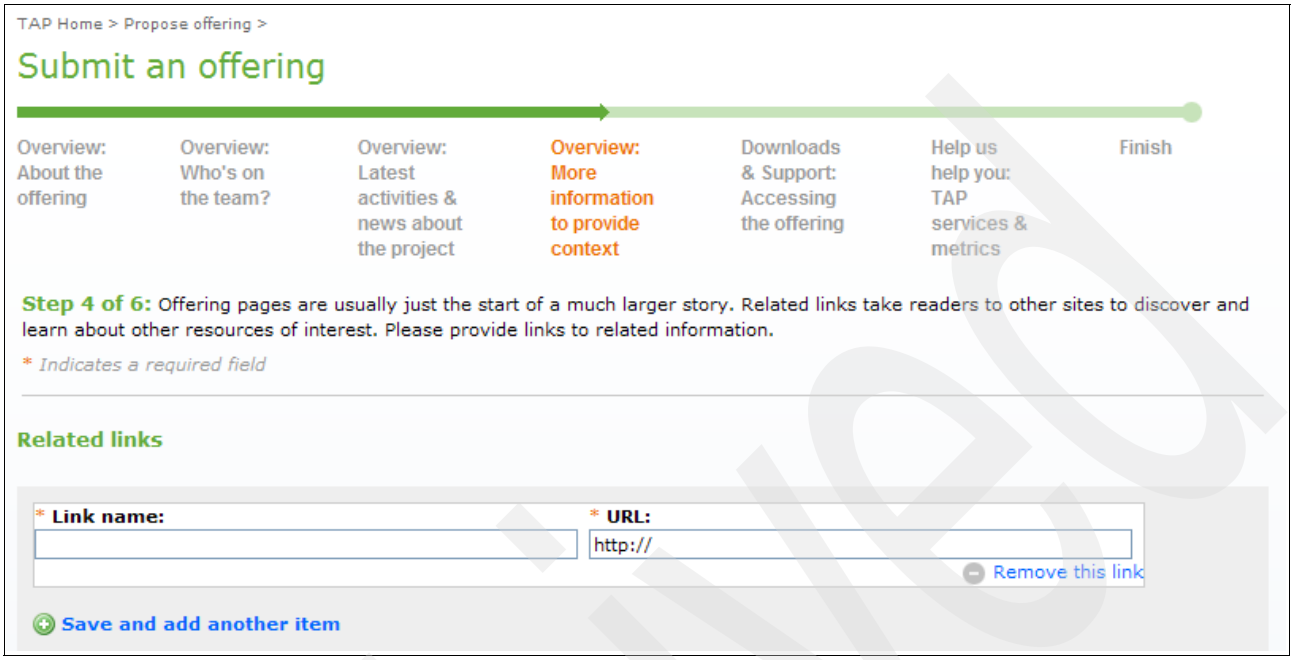


Figure 2-8 Submit an offering: links to more information

Early Adopters need to access the offering. The next form (Figure 2-9 on page 42) in the process captures the information that the Early Adopters need, including any offering specific files that the user wants to share with the community.

In Figure 2-9, the user provides access to the offerings.

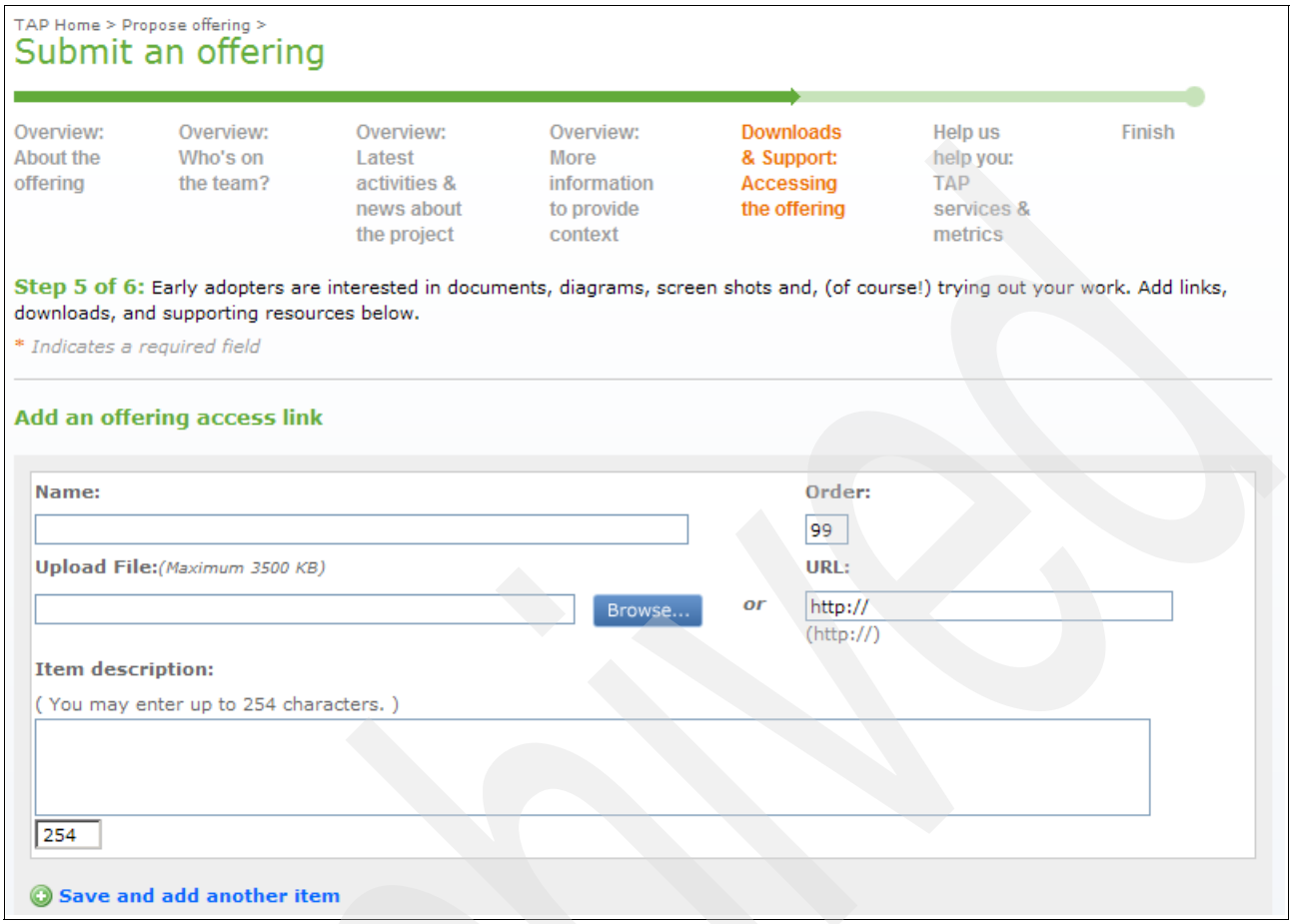


Figure 2-9 Submit an offering: access information

TAP also provides other support services. The next form (Figure 2-10 on page 43) in the process allows Innovators to request these services.

Innovators can use the form in Figure 2-10 to request the support services that TAP provides.

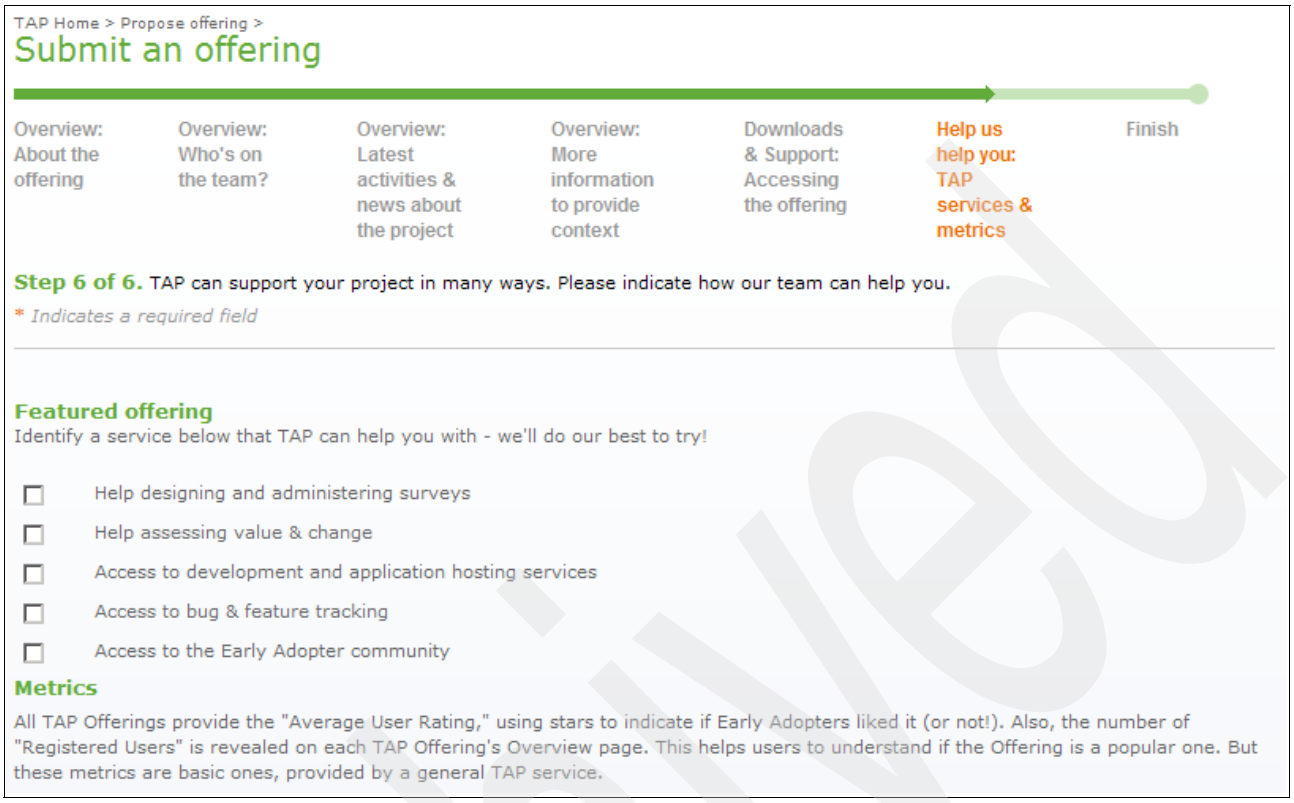


Figure 2-10 Submit an offering: TAP support services available

The users use Figure 2-11 to submit the offering.

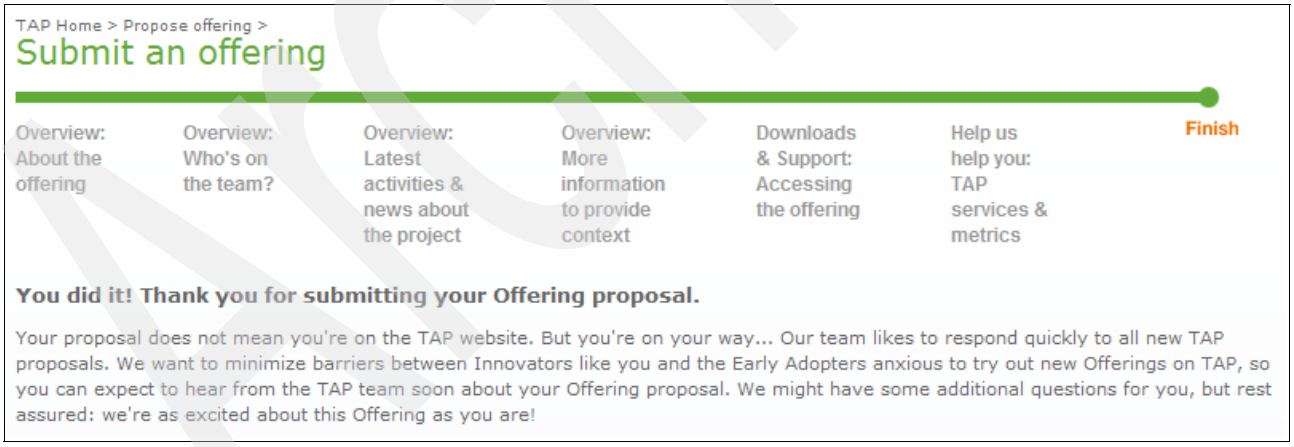


Figure 2-11 Submit an offering: completion and next steps

2.3.3 The boarding questionnaire

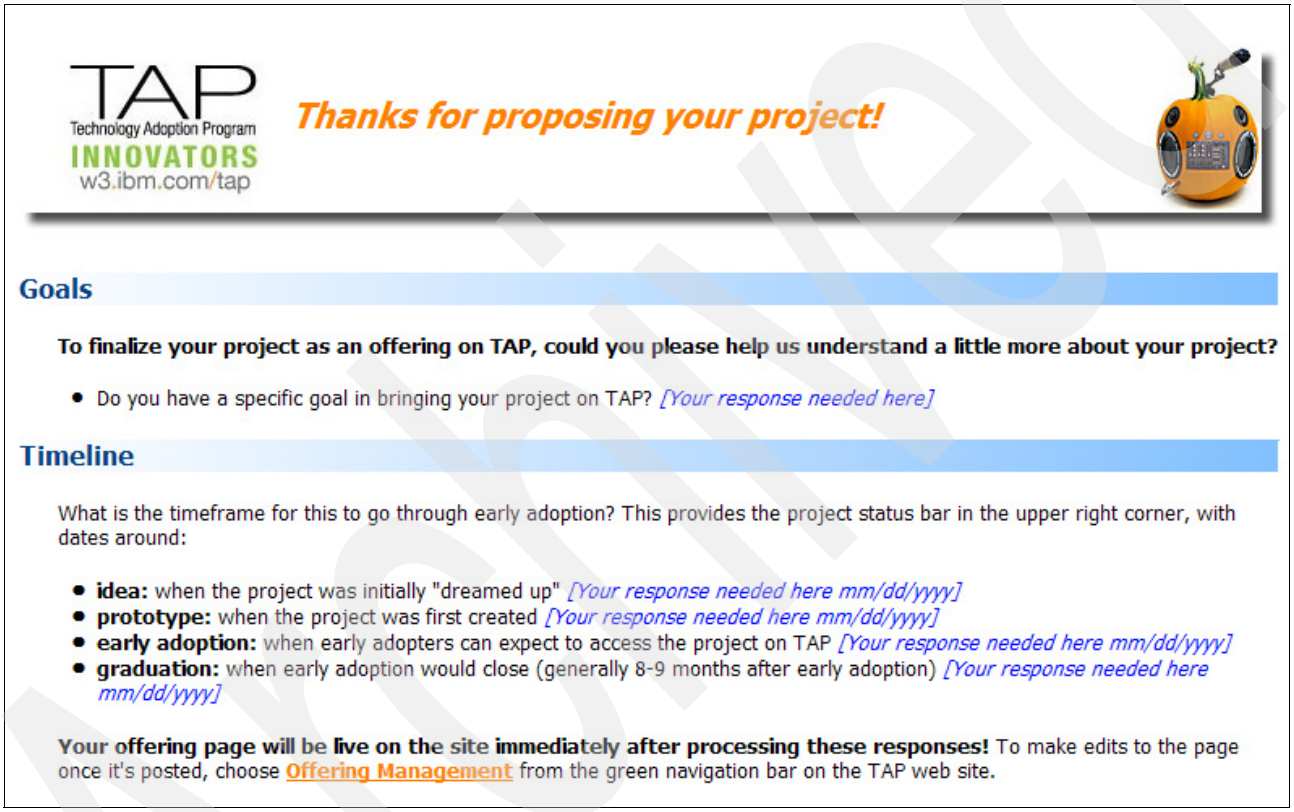
After completing all of the forms and submitting (Figure 2-11), the Innovator next receives a boarding questionnaire. In Figure 2-12 on page 44, Figure 2-13 on page 45, and Figure 2-14 on page 45 we show a template example of the boarding questionnaire that is sent to the Innovator after receipt of the offering proposal. After the proposal and the questionnaire are received, the program manager has enough information to make a decision whether or not

the proposed offering should be boarded as a TAP offering. The basic decision criteria that the program manager uses is as follows:

- Do they have something real to pilot that is ready for use and evaluated by the Early Adopter community?
- Does it make sense, at this point, to begin Early Adopter community involvement?

If the proposal meets these requirements, then the program manager schedules a boarding welcome call to collect all of the information that is needed to begin hosting the offering on TAP.

Figure 2-12, Figure 2-13 on page 45, and Figure 2-14 on page 45, are examples of the boarding questionnaire template.


TAP
Technology Adoption Program
INNOVATORS
w3.ibm.com/tap

Thanks for proposing your project!

Goals

To finalize your project as an offering on TAP, could you please help us understand a little more about your project?

- Do you have a specific goal in bringing your project on TAP? *[Your response needed here]*

Timeline

What is the timeframe for this to go through early adoption? This provides the project status bar in the upper right corner, with dates around:

- **idea:** when the project was initially "dreamed up" *[Your response needed here mm/dd/yyyy]*
- **prototype:** when the project was first created *[Your response needed here mm/dd/yyyy]*
- **early adoption:** when early adopters can expect to access the project on TAP *[Your response needed here mm/dd/yyyy]*
- **graduation:** when early adoption would close (generally 8-9 months after early adoption) *[Your response needed here mm/dd/yyyy]*

Your offering page will be live on the site immediately after processing these responses! To make edits to the page once it's posted, choose Offering Management from the green navigation bar on the TAP web site.

Figure 2-12 Boarding questionnaire template

Hosting

I see you have requested infrastructure services as well.

- Are you aware that these servers are free of charge for 9 months only, which should suffice to understand the value being realized by early adopters. After 9 months the servers will be reclaimed for other TAP offerings. *[Your response needed here]*
- Are you also aware that support for this environment is provided Monday-Friday, from 9 AM to 5 PM US Pacific time? *[Your response needed here]*

Please go to the TAP Dynamic Infrastructure Lab (TDIL) web site to submit your hosting request. You will be required to input hardware and software requirements at that time. If you have technical questions about the TDIL hosting environment, please contact TAP Infrastructure/Somers/IBM. Please allow 2 business days for your authorization to the site to take effect.

Features and bug tracking

For bug tracking, TAP sets up a Bugzilla for an offering, and the offering team manages the bugs as they are reported. If you'd like to see an example of a TAP offering's bugzilla, you can choose one to view from here: w3.tap.ibm.com/bugzilla/enter_bug.cgi

Using the table below, please specify the categories you would like to use for bug reporting:

Category name	**Brief description of category**	**Initial owner*** (Internet e-mail address)
Request for new features	*[Your response needed here]*	*[Your response needed here]*
General bugs found	*[Your response needed here]*	*[Your response needed here]*
[Your response needed here]	*[Your response needed here]*	*[Your response needed here]*

* Please note that the initial owner for each category must initialize his/her Bugzilla account by logging in at w3.tap.ibm.com/bugzilla. Use your IBM intranet password (IIP)!

Figure 2-13 Boarding questionnaire template

Feedback and support

Feedback and support is done inside the community, not through a formal process or call center - this is the TAP model! As such, we use web-based forums, from which the discussion will also show up directly on your offering page. This makes it easy for early adopters to stay current on what people are talking about, and also helps to show how the offering team engages with the community for any help or response to discussions.

We'd like to set up a forum for your offering.

- What name would you like to use? Our forum names begin with forums.biz.technology-adoption-program and end with an offering specific suffix: *[Your response needed here]*
- Who from your team will be the moderator of this forum? Please include this person's Internet e-mail address. *[Your response needed here]*

Measuring value

Surveys provide insight into how people have used the offering, and what value it provided for them. We can coordinate survey work based on the timeline you have helped provide above.

- Do you have a team you're working with to create, administer and analyze a survey? Or can we help set up this effort? *[Your response needed here]*

Also, I'd like to set up a call to learn more about your offering, and how TAP can help your offering as it proceeds through the program lifecycle. We'll also talk about the TAP value framework, and how TAP can assist in measuring the value of your offering to IBM. These calls typically take 30 minutes or less.

- Who from your team should be invited? *[Your response needed here]*
- Are there any special scheduling concerns to consider (e.g. team members in various time zones)? *[Your response needed here]*

With this information, we can determine how to appropriately move forward! Thanks for providing more details!

Figure 2-14 Boarding questionnaire template

2.3.4 The boarding welcome call

Innovators meet with the program manager and present an overview of the proposal. This discussion may include a description of the proposal's objective, scope, anticipated target audience, value proposition, expected time when they are ready to launch, and other significant development time-line milestones that may affect the TAP hosting process. The program manager asks a series of questions with the goal of understanding how the TAP team can best support the Innovator in moving the offering forward. Topics covered in the discussion include:

- Competition

  Are there other TAP offerings or current enterprise applications that offer similar features? What differentiates the proposed offering from other options that IBMers already have?

- Funding

  Have any IBM organizations already invested in development of the offering so far? If so, what are their expectations for engaging with TAP?

- Executive support

  What visibility does the offering already have within other IBM organizations. Are there any special circumstances involving executive support that we need to be aware of?

- Inspiration and motivation

  Where did the spark for the offering idea come from? What is our current vision for the strategic value of this offering. What do you think the lasting value will be to IBM and IBM customers?

- Hosting

  Which hosting environment is your offering best suited for? The most common form of assistance required is with hosting. At IBM, the infrastructure support options offered to TAP Innovators are the TAP Dynamic Infrastructure Lab (TDIL) and Bluehost. The choice between which hosting environment to use depends on the specific technical requirements of each offering.

After the program manager sufficiently understands all aspects of the offering, then the details captured in the boarding process are used to create a new Offering page that is dedicated to the offering, within the TAP portal.

2.3.5 Early adoption and prototype deployment

During the early adoption phase, the TAP team can optionally assist with the promoting the new offering on both the TAP portal and through the other TAP marketing channels (initially to the First Adopter community). The Innovator determines the period of the initial pilot phase to ensure that they have adequate time to potentially modify their offering before it is launched to the larger Early Adopter community.

The promotion of the offering involves leveraging the various marketing channels: the TAP portal, newsletters, podcasts, instant messages, wikis, forums, and blogs, and we describe the marketing channels in detail in section 2.4.2, "Marketing program elements" on page 49. The new offering is promoted to the Early Adopter community, who access it through the TAP portal, and then test the new offering. During this phase, the Innovators continue to manage and update their offering on the TAP portal as appropriate, and the First Adopters evaluation is conducted.

2.3.6 Assessment and evaluation

The primary source of data for assessment is user feedback from Early Adopters. The assessment of the technology uses active and passive data collection. *Active data collection* includes participant surveys that include a mini-survey, a more lengthy offering evaluation survey, feedback, and defect tracking. Defect tracking can occur using the open source Bugzilla software defects management product. *Passive data collection* includes activity tracking and usage logging.

The key evaluation criteria are:

- Usage by target population, which is measured by the number of times the new product is downloaded and from weekly usage rates, if available.
- The total energy level, or “buzz”, associated with the offering, which is roughly equivalent to the amount of interest, discussion, participation, and “hype” that the offering generates. Measurements include Offering page traffic, collaboration levels in the forum that are dedicated to the offering, blogging activity associated with the offering, related podcasts, intranet articles, and the frequency of tagging in the IBM internal Enterprise Tagging Service.
- The level of satisfaction from end users, as indicated in written survey feedback.
- Potential innovation value, from both an internal and external opportunities perspective.

2.3.7 Graduation

Graduation is the movement of the offering from the assessment and evaluation phase to its next logical steps. Depending on their assessment results, some offerings move quickly into production because they are already funded and championed by a business unit. Some offering teams might look to the TAP team for continued support, and for assistance with making connections after the business value is proven. Offering teams may alternatively return to development for refinement and then back to TAP for a second round through the life cycle, and some may simply get retired. The offerings may simultaneously progress down one or more of these paths.

If the next step for the offering is to move it to a production environment, then there are a number of options available that the offering owner can pursue:

- As a new IBM product or an addition to an existing product: deployment through the product development organizations.
- IBM Global Business Services and IBM Technology Services: deployment through the asset commercialization process.
- AlphaWorks: deployment as a beta software offering to external early technology adoption communities.
- Applications Hosting Environment (AHE): the internal production systems’ hosting environment.

The offering owner can simultaneously pursue one of more of these options. Alternatively, the offering owner can peruse any other options available to them that meet their business requirements.

2.4 Marketing TAP

Marketing for TAP began with a soft launch in the third quarter of 2005 and progressed in a viral manner. By mid 2006, the TAP team grew with the addition of an individual who had design and marketing skills and also developed a formal marketing program. The key elements of this formal marketing program include the TAP Web site, the gizmo campaign, structured communications, and the annual report. The IBM experience revealed that although the *informal viral marketing* of TAP did initially work, a complementary formal marketing program helped to increase the uptake of the program within the organization.

Viral marketing: Viral marketing is the promotion of a service or product through word-of-mouth of the customers, especially using the Internet and e-mail.

Pull-oriented marketing: Although we discuss some push-oriented marketing efforts in this section, the primary success route for growth of the TAP community participation levels is pull oriented. By pull oriented we mean grass roots growth in community interest in the program that is driven by both the Innovator community that wants to share their inventions and the Early Adopter community that wants to try them out.

It is useful to draw some parallels between the TAP program and the popular sourceforge.net open source community collaboration platform, which is hosted by SourceForge, Inc. Sourceforge.net provides free hosting to open source software development projects.[1] TAP is similar in that it also provides free hosting services to Innovators that are prepared to share their projects with the community of IBM Early Adopters; however, TAP also extends on the sourceforge.net model by providing some traditional push-oriented marketing programs that are designed to help increase visibility and engagement levels across all areas of IBM. These formal marketing efforts acknowledge the fact that a lot of IBMers are not familiar with the dynamics of open source communities, are not by the nature of the work they do directly connected to the communities of Innovators and Early Adopters that drive TAP, and yet are still interested in participating. These extra marketing efforts help to reach out to groups that would otherwise not be inclined to seek involvement in community-oriented projects on their own.

Because TAP is a community-oriented offering, it follows that marketing success should be ultimately measured by how much growth occurs organically, in a viral fashion:

- Web 2.0 style communication channels are used whenever possible to share information about TAP.
- An intranet wiki is optionally created for each offering, using the IBM internal WikiCentral service.
- Forums are created to support each offering.
- Tagging allows adopters of early technology to view the Web sites that their like-minded colleagues frequent.
- Podcasts provide an audio communication service for those who might want to listen to the latest technology updates in that format.

[1] See http://sourceforge.net/docs/about for more information.

2.4.1 Initial soft launch

The initial viral soft launch of TAP in 2005 was a success. An e-mail was sent to 40 colleagues and as a result, news of TAP quickly spread. The reason for this approach was based on an assumption that the techno-savvy Early Adopter community might not respond as favorably to authoritarian top-down management instructions regarding what new products and services they could use. Their grass roots culture and collaborative work practices mean they respond much better to a bottom-up approach to new product launches.

2.4.2 Marketing program elements

The TAP Web site is the most critical element in the marketing program. Other important elements, which we describe in the following sections, are the gizmo campaign, scheduled communications, and the annual report.

Web site

The TAP Web portal, as pictured in Figure 1-7 on page 20 and Figure 2-15 on page 50 with sections highlighted for discussion, was designed to conspicuously differ from the standard IBM intranet. It is designed with a more colorful look and feel, using an orange and green color scheme to help differentiate it from the standard IBM blue color scheme. We used a simple, utilitarian style to support the self-service design goals. Really Simple Syndication (RSS) feeds give users another way to retrieve content and stay current on the latest happenings in TAP.

In Figure 2-15, we identify key parts of the TAP portal home page design. See Table 2-9 on page 51for a description of each part.

Figure 2-15 TAP portal home page

The TAP Web site centralizes access to tools that the community can use to communicate and collaborate, to download and install offering software, and to provide feedback to Innovators. At the top of the home page is the TAP *gizmo*, which is a pumpkin style image that we describe in detail in the following section. On the left side of the Web page, the latest and most popular offerings are listed (1) and includes pictures of offering Innovators, which gives them a physical identity to help other Early Adopters to connect with them. In the center

of the Web page, the latest news stories are listed in the spotlight section (2). On the top right of the Web site, visitors can explore all of the offerings that are available (3). You can also propose an offering or learn how to begin the proposal process (4). In the lower half of the page, there are sections that link to different TAP related media feeds, (5) and feature stories about actual Early Adopters and Innovators (6).

Table 2-9 lists the key elements that are prominently displayed on the TAP home page.

Table 2-9 TAP home page

Web site section and corresponding number in Figure 2-15 on page 50	Description
Latest offerings (1)	Shows offerings that are new or that were recently updated. Early Adopters and new users both gravitate to this menu.
Most popular (1)	Provides a view of all offerings, which are sorted by number of registered users.
TAP Spotlight (2)	Displays brief notes about general TAP news, activities, and offerings that are called out because of their specific value or focus area.
Explore all offerings (3)	Contains easy navigation paths for users to browse all offerings.
Propose an offering (4)	Provides links that enable TAP Innovators to initiate their own offering proposals.
TAP Media (5)	Contains links to various types of information channels about TAP events and related stories.
Who's on TAP? (6)	Provides links to profile stories about TAP Innovators, Early Adopters, and IBMers connected to TAP.

The top navigation on the home page menu bar, which is located at the top of the page in Figure 2-15 on page 50, allows users to access five supporting Web pages: *Offerings*, *Propose offering*, *What is TAP*, *Innovation enablers,* and *Events*. The following list defines the five supporting Web pages:

- The *Offerings* page provides a list of all the current offerings and a search tool to help users quickly access their desired offering.
- The *Propose offering* Web page provides an online form where requestors can progress their TAP offering request.
- The *What is TAP* page provides a description of the TAP community and the TAP processes. The right side of this page contains links to the annual report, an internal site search tool, and a compelling list of reasons why users might want to participate in the program.
- The *Innovation enablers* page provides a list of the innovation resources that host storage and other tools and services that already exist to help Innovators. It also provides a list of innovation initiatives that currently, in addition to TAP, help champion innovation efforts in IBM, including Biztech and Thinkplace, which we described in 1.3.3, "Positioning of TAP within the IBM innovation ecosystem" on page 12.
- The *Events* page provides a calender where any upcoming events of potential interest to the TAP user community are posted.
- When Innovators authenticate, they will additionally view an *Offering management* page, in the top-menu bar, which provides them with direct access to update all TAP portal content that supports their offering.

The TAP gizmo

In 2006, the TAP designer designed the TAP gizmo, or TAP graphical icon, to enhance the marketing and communications program. Figure 2-16 shows the first symbol, which was a tri-gauged equalized watermelon.

Figure 2-16 The TAP tri-gauged equalized watermelon

After the first year, the gizmo image was updated to a “dual woofer amplified pumpkin” which is shown in the program promotional poster in Figure 2-17 on page 53. This change aimed to refresh the image in the spirit of TAP being a dynamic program. We chose a pumpkin because it was considered a likeable, ubiquitous vegetable, and its integrated technological enhancements are symbolic of the community-based innovation spirit that TAP wants to support, for example, Who knew you could make a pumpkin do this? Kind of like making an elephant dance. The idea of sound radiating from the gizmo relates to the intent of the TAP portal as a site that spreads news of the latest emerging technologies that are available for trial to the Early Adopter community.

Figure 2-17 is the TAP dual woofer amplified pumpkin.

Figure 2-17 The TAP dual woofer amplified pumpkin

Structured communications

Scheduled communications are sent to the TAP community, such as monthly newsletters, which are informal, colorful, and friendly e-mails that promote the latest TAP offerings and excite readers with news of competitions with attractive prizes.

Figure 2-18 is a sample of a monthly newsletter.

TAP
Technology Adoption Program

What's new with TAP?
We'll tell you...

Are you TAPped in?

Did you know about **TAP's First Adopters**? They're the group of people who want new things, and they want them FIRST. This group of people lend a hand each week, looking at a new technology and sharing their experience for 6 months. That's right - they're the ones who tell you what's buggy, what's hip, and what you can't live without. Sound like something you want to be a part of? Don't wait! This class of First Adopters closes October 5th, so act now to join in!

TAP's very own Chris Wyble is leading a global BizTech team to look at **innovation reputation**. That's right - they're tackling the issue of how can IBMers be rewarded for their hard work and creative contributions in programs like ThinkPlace and TAP! What is the reward structure? What is the tracking mechanism? What is the actual reward? The team went through these questions and more - add your thoughts too, check out Chris' Blog: Blogstravaganza, to share your comments and ask other questions!

C. Wyble

Don't forget, there are two other ways you can keep up with TAP! You can stay current on all TAP activities through your w3 On Demand Workplace when you **profile yourself for TAP.** Just select the Technology Adoption Program under "Interests -> Business Topics." If you're looking to hear us rather than read us, subscribe to the TAP Media Series: All Things TAP and listen to **our weekly podcasts** telling you about what offerings are new on TAP!

And remember, you can also check out the w3 version of this Newsbrief!

The latest...and greatest? You decide!

The new First Adopter class has launched... and they have been busy! By giving them the first run at these technologies new to TAP, you can get an initial feel for what they think about them. Give these offerings a try and see if you agree!

Rational4Notes- UML Modeler**: Lotus developers get ready! With this tool, you'll be making database diagrams for fun!** First Adopter John Skeats says, "*As an "informal" Notes developer, I would love to have a tool that provides this function at my finger tips.*" This plug-in allows you to model your applications and requires no previous Rational experience!

SOD Matrix Creation Tool**: Who doesn't love a tool that automates a tedious task? Never create an SOD matrix manually again!** Jon Adams, one of TAP's First Adopters tried it out and said "Great tool that should be used by IBM... will enhance productivity!" No download is needed and you use it right in Lotus Notes!

highlightr alpha

Highlightr**: Don't only mark what you thought was important..tag, comment, share, mash and more!** Make sure to register and sign in to really participate. Use the API capabilities and create your own mashups! Give this technology a try while it is still an alpha and tell us what you think!

No more pay to play! Looking for a fast, easy, free way to record and play audio or video presentations anytime, anywhere? Check out the Self-Service Jukebox. You do it yourself, right on your laptop. No extra tools, no extra costs.

Still looking for more?

Some other offerings have been available, and are now looking YOUR formal feedback! **If you have used them before, take their survey!** If you haven't, check out their offering page then give your feedback about your experience! We love to hear what you think...

PassItOn: Pass on what you know - This offering makes just-in-time learning and teaching a collaborative social event!
Exhibere: The fastest, simplest way to share powerpoint presentations online, hosted on your own computer with no charges!
Rational Performance Tester: Want to improve the performance and scalability of your multi-user applications? Put your system to the test with this tool!

Figure 2-18 TAP newsletter

Podcasts

Podcasts are periodically recorded and posted on the TAP Web site. Their chatty, informal style interweaves the latest emerging technology updates with details of what the TAP team are up to. The podcast enhances the informal grass roots cultural appeal of TAP and makes it clear to all how approachable the TAP team is.

Instant message broadcasts

Sametime broadcasts are periodically sent to all TAP users to leverage different communication media that reaches out to the user community and keeps them interested in the latest emerging technologies that TAP has to offer.

Annual report

At the end of 2006, the report produced about TAP is unusual for many reasons. It does not contain the standard financial reporting that is found in company annual reports; instead, It provides a summary overview of TAP and highlights the areas where TAP experienced growth in 2006. The style is colorful, organic, and chatty, and in this way accurately represents the spirit of the TAP community.

Figure 2-19 is an example of a TAP annual report.

Figure 2-19 Annual Report

3

Understanding community

TAP could not work if IBM did not have an active community of emerging technology enthusiasts who can effectively collaborate using the Web 2.0 tools, within the IBM intranet, that are available to them. This community sustains TAP because it both innovates and tests the new technologies launched on the TAP portal for all interested individuals.

In this chapter, we describe the importance of community as a cornerstone in TAP strategy. We describe some community launch and management best practices, and then we conclude with a section that emphasizes how important it is to understand and support diversity in the workforce as part of the overall Web 2.0 community strategy.

3.1 Community: a cornerstone of TAP strategy

Simply stated, without community involvement TAP, as it is designed, would fail. *Community participation* is the critical element that the program must have for success. To illustrate the defining importance of this, consider the following operating principles for TAP:

- TAP *allows any IBMer to identify as an Early Adopter*, by virtue of their own interest in the offerings available on TAP.
- It is the stated policy of the TAP management team that they do not make any effort to prejudge the ultimate value of an offering being considering for boarding on TAP. If it meets a set of basic criteria (see “The boarding questionnaire” on page 43) then the offering can be hosted on TAP. *They let the dynamics of the Early Adopter community determine the ultimate value of the offerings.*
- The TAP management team declared that *the needs of the community will also guide how TAP itself is managed and how it evolves over time.*

Supporting adherence to these operating principles is not something that is necessarily easy to do. Especially when you consider the last principle listed. It is in the nature of IT organizations in large traditional companies to attain power and control so that they can preserve their influence and importance. In order to support these principles, TAP management must put a great deal of emphasis in the program on minimizing the organizational inertia and bureaucracy that inevitably develops when small programs become large.

And this is where we come to the vital importance of community. The TAP team can design hosting systems and program management processes to effectively minimize scaling costs as the program grows. But to minimize development of organizational inertia and bureaucracy, so that the nature of the program itself can easily change to meet the needs of the community, what you really have to do is affect a transfer of those powers to the community: the organizational inertia becomes community inertia, and bureaucracy becomes community-based governance. When this type of ‘transfer of power” takes place, then TAP’s adherence to those operating principles becomes inherent. Also, the role of the supporting IT organization takes the form of benevolent facilitation.

3.2 Community dynamics

Communities are groups of individuals with a shared identity or a common special focus area of interest. Communities interact with one another in a number of different ways: in a Web 2.0 environment, face to face, and at a local village. Before the age of the Internet and Web 2.0, communities were largely geographically centric. Face-to-face contact was the primary prerequisite for establishing individual relationships and growing communities. The Internet and Web 2.0 trends have changed a new dimension to how we understand community dynamics, as geographic barriers are broken down and distributed online communities form and collaborate.

Information on a huge range of subjects is now much more readily accessible to all. The currency of information is enhanced, as online publishing facilitates the rapid refresh of information.

Communities at IBM existed well before Web 2.0 trends kicked in when they mainly used mediums, such as news groups and forums. These tools of 10-20 years ago limited the way these communities interacted. Their centrally administered systems meant that they were not as user driven and self-governing as the Web 2.0 communities are today. They provided a flatter form of online community interaction, in which emergence of new and higher level forms of interaction and structure were not as readily facilitated.

In the following sections, we discuss online communities in more detail, including:

- The technologies that facilitate communities.
- The importance of diversity in communities and social computing.
- Some guidelines for supporting community launch and management.

3.2.1 Community value

Because communities are vital to the success of innovation at IBM and innovation programs like TAP, it is critical that IBM clearly demonstrates to its communities that it values them. As we discussed in 1.2.1, “Community value” on page 7, IBM demonstrates to its communities that it values them by investing in the tools the communities require to thrive. The most important tools that these communities require today to flourish are instant messaging, Web portals, wikis, forums, blogs, community communications, and membership processes. IBM makes all of these tools available its employees to use.

The key business benefits, as we discussed in detail in 1.2.2, “Business value” on page 8, include increased speed to market for new product offerings, innovation acceleration within the company, improved talent attraction, and improved retention rates. In 1.2.2, “Business value” on page 8, we also discussed the extent to which a commercial value can be assigned to these business benefits.

3.2.2 Cultural and organizational change

In valuing communities, cultural change is triggered as greater horizontal collaboration results in organizations become flatter, which in turn translates to more efficient and effective organizational structures.

The cultural change that is occurring in IBM is a newfound acknowledgement of the importance of the grass roots communities of emerging technology enthusiasts. TAP shows the community of early adoption-oriented IBMers that they can support and promote any innovative technologies that the community rallies around. TAP made it clear to all IBMers

that it is good for them to download and try new tools on their standard workstations. For the Innovators themselves, TAP gives them permission to innovate, and TAP gives them the platform to do it.

At IBM, TAP brought the community into the IT decision making process. A process which was previously the domain of the CIO office. The increased horizontal collaboration reduced the requirement for layers of management and resources to ensure collaboration between business units, because it started happening without their direction anyway. The CIO office now has the benefit of receiving feedback from over 100,000 willing emerging-technology testers. The process ensures that any potential issues with the new offerings are identified faster, which ultimately leads to greater speed-to-market for organic innovations.

3.3 Best practices for building and sustaining communities

We adapted much of the information in this section from research and documentation efforts in an IBM internal wiki titled “How to Launch Communities.”

Figure 3-1 shows the main page for this wiki, which outlines some best practices for building and sustaining communities.

Figure 3-1 Community Cookbook

According to the cookbook, the key ingredients for starting a community are the:

- Community domain

  The creator first decides on the topic, technology, or domain of the community, that will create the shared identity of it.

- Targeted community

  The creator ideally already has some level of participation from the targeted community. The creator also has an idea of the individuals that can serve and benefit from the community.

- Community team

  The team of people who work with the community to ensure its success. A little leadership goes a long way in ensuring that the team structure, roles, and rules of the community are clear.

3.3.1 The community team members

The key team members that support a community are described as follows:

- Executive sponsors

  Their time commitment is typically low, being less than one hour per month. Their commitment is important to show that the executive team buys into, values, and supports the community, which legitimizes their activities.

- A moderator

  The time commitment required from the moderator is typically 30-60% during the first month and 10-15% for each month afterwards. As part of their role, they decide how to handle inappropriate behavior of rogue members, answer questions, and drive community membership. They coordinate the involvement of the greater community, in particular the subject matter experts, in answering questions from the community that are going unnoticed or that they cannot answer themselves.

- Subject matter experts (SMEs)

  The typical time commitment for SMEs is one-to-two hours per week and an additional four hours per month. These individuals need to be recognized experts within their fields, who through their involvement further legitimize the community and help to steer discussion threads in thoughtful directions. Ideally, more than one SME is engaged for each subject to ensure that if one is unavailable, due to urgent workload or leave, the other can assist to ensure that questions from the greater community are not left unanswered for extended periods.

- Authors

  The required time commitment of authors is usually four hours per month. Because the community needs to be seeded with initial content to get it going, the authors are key in providing this content.

- Administrators

  The time commitment required from an administrator is typically 30-60% during the first month and 10-15% for each month afterwards. They own the day-to-day operation of the community, answer questions, and keep the support services operational. Depending on the size of the community and associated workload, they may also perform the moderator role.

- Members

  Members are considered to be both the registered members of the community and the members of the core team who support the community.

3.3.2 Base technologies

The essential technologies required for establishing a community include the infrastructure required to support a community portal, ideally with forums and wikis, and the communication software that is required to support communications, newsletters, and messaging to its members.

Depending on whether the community is an internal or external one, remote access and authentication technologies are required to ensure that the appropriate integrity of all participants is maintained.

Some of these base technologies might already exists, which allows rapid growth of the community, while other components may take longer to establish. The following is a list of software tools that are used to help create and maintain communities at IBM:

Activities A Lotus Connections tool helps organize information and people for executing assignments.

Blog A frequently updated, personal Web site that features diary-type commentary and links to articles or other Web sites.

Planets or Blogplexes
Blogs or feed aggregators have shown to be extremely effective in building communities. They build a single page with all recent posts from community members' blogs so that members can go to a single place to read them all. This way the potential of one blog is multiplied by the potential of other blogs in the same planet.

Bluegroups This authorization tool is used to define a group of internal IBM users that then are used for efficient access control management.

CommunityMap A place where to define and find communities within IBM.

Dogear A tool that saves, organizes, and shares bookmarks as centrally stored "tags".

Discussion Forum A discussion area where any member can post a message. It is not owned by a single person and often threaded into multiple conversations.

Lotus Connections Social software that has five components that work together: Profiles, Communities, Blogs, Dogear (tagging), and Activities.

Predefined Community Survey
This contains a template that users can copy to provide a quick and easy way to collect ratings and feedback about a Community.

Quick Poll A widget that imbeds polls into Web pages and can be used to collect user feedback.

Sametime Broadcast Suite
Used to broadcast a message, poll, or request to an entire community.

Websurveyor A tool used to create and publish surveys.

Wiki Allows a group of users to edit shared online content.

3.3.3 Building and maintaining your community

In this section, we discuss how to build and maintain your community.

Building your community

The community requires base infrastructure to support its operations, first and foremost. After this is identified or established, related content and collateral on the subject that is anticipated, initially unites the community and is required to get things moving. Ideally, this information is relevant to their day-to-day activities, and can be in the form of white papers, technical articles, tutorials, presentations, getting started information, overview articles, and pointers to existing material, such as IBM Redbooks publications, Web casts, and other educational material.

Next, the community moderator and administrator develops a communications plan. This, as a minimum, initially involves an overview article and announcement letters that are signed by the executive sponsor of the community and other key stakeholders, as appropriate. The announcement article is, ideally, posted on previously established communication portals that the anticipated target audience frequents.

Introducing new emerging technology tools can help drum up interest and participation in community launches. Regular product enhancements and user tips give members a reason to frequent the main community information Web sites.

Maintaining your community

It is important to keep the interest of the community alive to sustain ongoing participation. What moderators need to do in support of this is to ensure that the information that is posted on the community news portals is changed, ideally at least once a week, especially in the early life of the community. Moderators need to solicit contributions from SMEs and other potential authors who offer their insights, opinions, and latest newsworthy updates for distribution to the community. If the community editor is able to provide incentives, in the form of points, rewards, or special recognition for high contributors, this also ensures ongoing, active participation.

Intrinsic and extrinsic motivators drive individuals to participate in communities. Examples of intrinsic motivators include passion, interest, enjoyment, personal growth, skill enhancement, and satisfaction. Examples of extrinsic motivators include gaining customers, anticipated reciprocity, increased reputation, and a sense of efficacy. Alternatively, factors that might unmotivate individuals from participating include lack of manager support or lack of peer involvement, difficult tools and processes, lack of time, perceived inequity, and lack of recognition for significant contributions to the community. Hence, it is important for community leaders to focus on developing a work climate and culture that maximizes the potential motivating factors.

As we discussed in section 1.1.4, “The alignment between TAP and the IBM values” on page 5, trust is the central social capital that is created by having communities. Most trust building comes from regular interaction between members. Community leaders can help build trust between members through:

- Effective communications, which is proactively informing people and responding in a timely manner.
- Maintaining integrity, which means keeping and delivering on all promises.
- Showing appreciation, which means to give positive feedback, public recognition, and participation points as appropriate.
- Showing support is ensuring that all decisions are fair and transparent.

- Showing humility when appropriate.
- Ratings and rankings is a way to impose a base level of confidence through ratings and rankings.

Community etiquette

Some conduct guidelines are required to ensure that the community interacts in a constructive manner. The basic set of conduct guidelines address the following areas:

- Understand and follow the IBM Employee Business Conduct Guidelines.
- Respect copyright, fair use, and financial disclosure laws.
- Protect all confidential and proprietary information.
- Write in the first person and identify yourself. Speak for yourself and not for the company.
- Protect your credibility by correcting your mistakes.

The basic rules of behavior, as adapted from Wikipedia[1]:

- Treat others as you want them treat you—even if they are new. We all were once.
- Be polite.
- Keep in mind that raw text can be ambiguous and can seem more rude at times than if the words were said in a face-to-face conversation. Words can mean different things in different cultures and irony and humor do differ from culture to culture.
- Work towards agreement.
- Argue facts, not personalities.
- Do not ignore questions.
- If another disagrees with your edit, provide good reasons why you think the edit is appropriate.
- Concede a point when you have no response to it, or admit when you disagree.
- Be civil.
- Be prepared to apologize.
- Forgive and forget.
- Recognize your own biases, and keep them in check.
- Give praise when due.
- Remove or summarize resolved disputes that you initiated.
- Help mediate disagreements between others.
- Avoid deletions when possible, except in the case of clear vandalism.
- Remind yourself that these are people you are dealing with. They are individuals with feelings and probably have other people in the world who love them. Try to treat others with dignity.

3.3.4 How and why to use metrics

After communities are established for a while, moderators and executive sponsors generally welcome quantitative feedback regarding their success or otherwise. Metrics are useful for showing activity and growth, identifying popular areas or trouble spots, understanding the

[1] Wikipedia contributors, “Wikipedia:Etiquette”, Wikipedia, The Free Encyclopedia, http://en.wikipedia.org/w/index.php?title=Wikipedia:Etiquette&oldid=156991930 (accessed October 7, 2007).

user experience, and for providing feedback to management. At IBM, the following methods are used to measure the success of communities:

Web site metrics Measurements are taken on a Web site level, for example, the number of hits per period, how long visitors stay, and the number of visitors who are registering.

Wiki metrics Metrics reported on wiki pages every month, for example, hits, visitors, and number of downloads.

Wiki ratings A numeric feedback that represents an attribute, for example, a star rating of a Web page's usefulness.

Quick Polls A Web page imbedded poll that is used to collect user feedback. Quick Polls measure the pulse of a community.

Surveys A set of questions or selection items to collect user feedback. A survey is more in-depth than a quick poll.

Predefined Community Survey A predefined set of items that you can rate your community on, which you can easily copy and add to your community wiki.

3.4 Spectrums of diversity

Everyone encounters diversity, and it is our diversity that defines us. There are a range of ways in which diversity is described and analyzed within the IBM community. TAP is a program in which all IBM employees can participate. Therefore, for a program such as TAP to be most successful, we must consider how the different spectrums of diversity within IBM are best served.

Diversity in a company, with the size and reach of IBM, is considered across many different spectrums: ethnic, religious, sexual, physical abilities, geographic, personality type, and intergenerational.

There is organizational diversity between IBM business units. The rough break down of the different IBM business units in the following list illustrates this:

- Technical and consulting services
- Hardware and systems design and engineering
- Software design and engineering
- Sales and distribution
- Research
- Corporate, communications, finance, legal, human resources, and the CIO organization

There is also industrial diversity because IBM provides services to clients across a broad range of business sectors, including financial, industrial, telecommunications, and government.

In the rest of this section, we first discuss geographic diversity. Then, we mainly focus on the topic of *intergenerational diversity* because the community dynamics that drive the success of programs like TAP can be related to variations in motivating factors and work habits between different generations.

3.4.1 Geography

IBM is a global company with offices and operations in most countries world wide. The global operations are broken into three distinct regional areas: the Americas and Canada, Europe and Africa, and the Asia Pacific. In the Asia Pacific area alone, 11 different languages are spoken, which results in a culturally diverse workforce. One of the business challenges for IBM is finding common tools to facilitate interaction between a geographically diverse workforce to ensure that they feel connected with one another and that they can effectively collaborate as required.

3.4.2 Intergenerational diversity

Intergenerational diversity is a term that describes a work environment where several generations work alongside one another. This diversity often comes when *generation Y* finds itself working alongside *generation X* and the *baby boomers* in the workforce. We describe the characteristics of these demographic groups in the following sections.

The business challenge for companies is how to leverage the potential benefits of mixing the generation Y, generation X, and baby boomer generations together, while avoiding excessive conflict between these generations in the work environment. Typically, there is some clash between generation Y staff and the baby boomers, and the challenge for management is to ensure that they collaborate as effectively as possible by recognizing the different strengths that they each bring to the work environment.

TAP offers a diversity neutral program over which the generations can unite for the common purpose of piloting emerging technologies and providing valuable feedback to its creators. Feedback from all generations and user profiles is important to the creators of new products who hope to identify strategic market segments for their products. The business value comes from both the constructive feedback that the Early Adopter community provides to the offering Innovators and the positive morale that is generated by all generations working collaboratively alongside one another.

Digital natives - Generation Y

The *digital natives*, also known as the generation Y, are the age group who grew up with technology. This is in contrast to their parents, largely baby boomers, who came into contact with digital technologies later in their lives. Generation Y workers typically have a different attitude towards employment that is characterized by limited company loyalty and the need for constant stimulation. Most would consider the opportunity to readily use emerging technologies an attractive differentiator when considering employment options. Generation Y was the first generation to use or witness the development of following technologies from an early age:

- The Internet, and especially the World Wide Web, as an easy-to-use medium for collaboration and commerce by non-technical users (about 1994 onwards).
- Personal computers with modern operating systems and mouse-based point-and-click GUIs, requiring fewer keyboard skills. (late 1980s and onwards).
- Sophisticated computer graphics in many video games, animated movies, television shows (late 1980s to mid 1990s), and the related non keyboard-oriented interfaces.
- Digital high speed data services into homes (mid 1990s and onwards).
- Cellular phones (late 1980s and onwards).
- Instant messaging and online presence (late 1990s and onwards).
- Personal Digital Audio Players (1997 and onwards).

- TiVo and other such DVR devices (1999 and onwards).
- Digital cameras (1990s) and image upload and sharing services (early 2000s).
- Robotic and digital pets (1990s-Tamagotchi, Furby/2000s-Robosapien (V2,V3), Aibo, Poo-chi, i-Dog, Pixel Chix, Neopets, Webkinz, and I-Cybie).
- Camera phones (early 2000s).
- Text messaging (early 2000s in the United States).
- Social Networking Software (late 1990s and onward).
- 3D virtual worlds, such as Second Life, Entropia Universe, and There (early-mid 2000s).
- Web 2.0 trends (mid 2000s)
- Satellite radio (2002 and onwards).
- Online gaming (1996 and onwards)
- Mainstream usage of Touch Screens (early 2000s).
- Increased surveillance by their baby boomer parents as they used technologies, such as GPS tracking, Internet-enabled home camera systems, Internet monitoring, and cell phone monitoring. (This led to a backlash as many members of Generation Y view these technological advances as infringing on their personal rights) (2000s).
- Domestic robots, such as Roomba, Scooba, and RoboMower (2000s).

Thus, generation Y uses technology at greater rates and in different ways than those from other generations. In their book, *Connecting to the Net.Generation: What Higher Education Professionals Need to Know About Today's College Students*, Reynol Junco and Jeanna Mastrodicasa found that in a survey of 7,705 college students:[2]

- 97% own a computer
- 94% own a cell phone
- 76% use Instant Messaging (IM)
- 15% of IM users are logged on 24 hours a day/7 days a week
- 34% use Web sites as their primary source of news
- 28% write a blog and 44% read blogs
- 49% download music using peer-to-peer file sharing
- 75% of students have a Facebook account
- 60% own some type of expensive portable music or video device, such as an iPod

This high take up rate of emerging technology by the digital native Generation Y community is why they are natural enthusiasts for a program like TAP.

Generation X

Generation X typically includes anyone born from 1961 to 1981, although the exact date range does vary from country to country. In contrast to Generation Y, this group has not grown up with technology and are described as digital immigrants, having come into contact with it later in their lives.

Baby boomers

Baby boomers are generally considered those born between 1946 and 1964, but the exact categorization does vary from country to country. The term comes from the unusual spike in birth rates following World War II. This group, like the generation X group, are considered digital immigrants because they did not grown up with Internet technology.

[2] Wikipedia contributors, "Generation Y," Wikipedia, The Free Encyclopedia, http://en.wikipedia.org/w/index.php?title=Special:Cite&page=Generation_Y&id=162292872 (accessed October 5, 2007).

4

TAP design and implementation

In this chapter, we provide a more technical developer and systems administrator-oriented overview that describes how both the TAP portal and TAP offering hosting service is designed and implemented.

4.1 Design overview

The main TAP technology components include:

- One custom Web application server software stack
- Two application hosting systems

The hosted offerings that the Innovators provide are a critical technology component (and ultimately the reason why TAP exists), but they are not designed, implemented, and managed by the TAP team.

Figure 4-1 shows each of the core TAP technology components, along with their relationship to hosted TAP offerings.

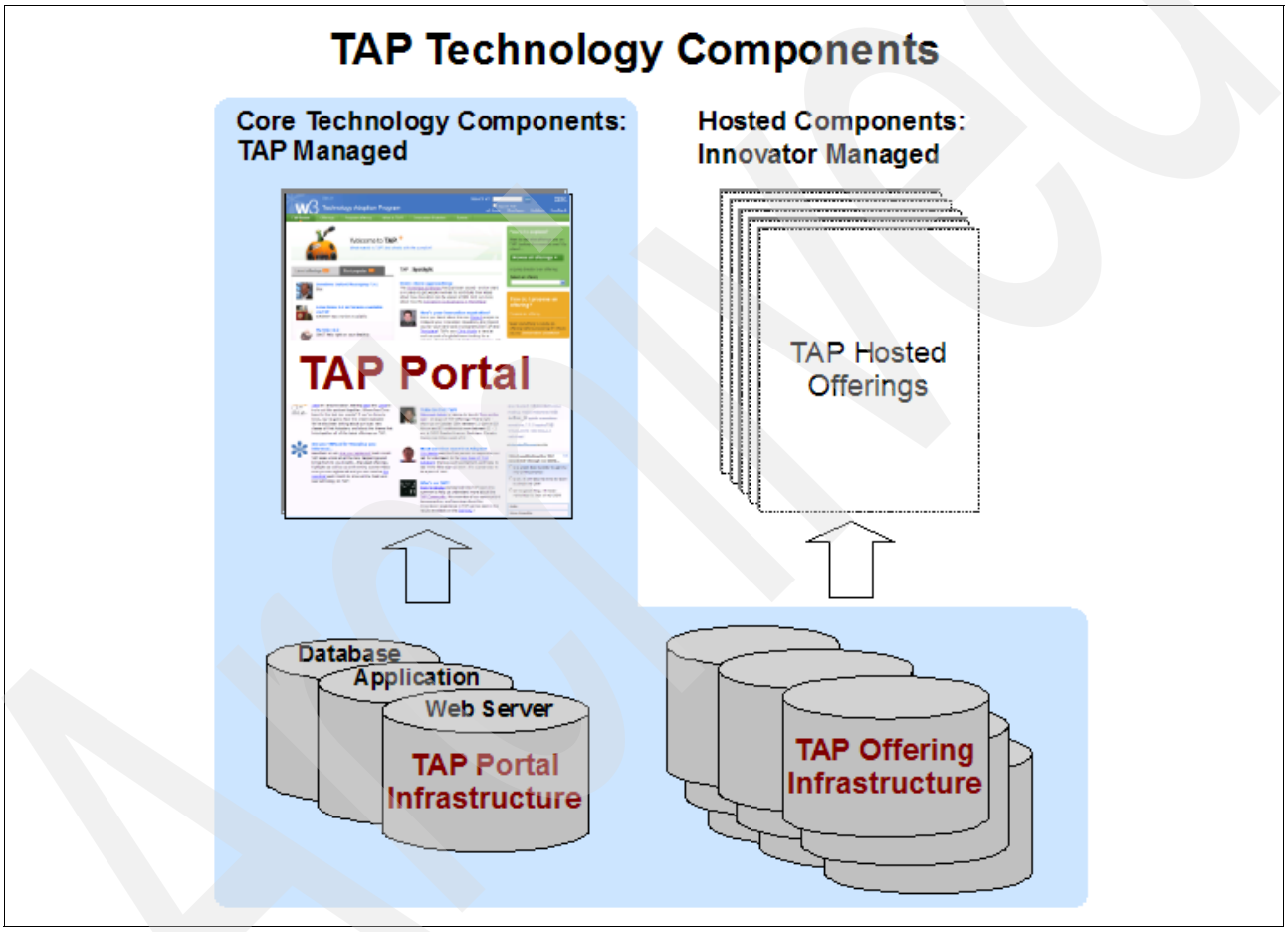


Figure 4-1 TAP technology components

The following sections describe how each of the core technology components in TAP are designed and implemented.

4.2 TAP portal design and implementation

The TAP portal is a J2EE™-based Web application and is based on a standard tiered architecture. In the following sections, we discuss present blueprint level details for how the TAP portal was designed. There are many core design details that are out of the scope for

this discussion, for instance: the data model, database schema, application source code, style sheets, client-side Javascript source (dojo/AJAX), and the XML schemas. In this section, we present more details on:

- Specific functionality
- The software architecture
- The information architecture of the TAP portal

Figure 4-2 illustrates the TAP Portal, which is based on a standard tiered Web application architecture.

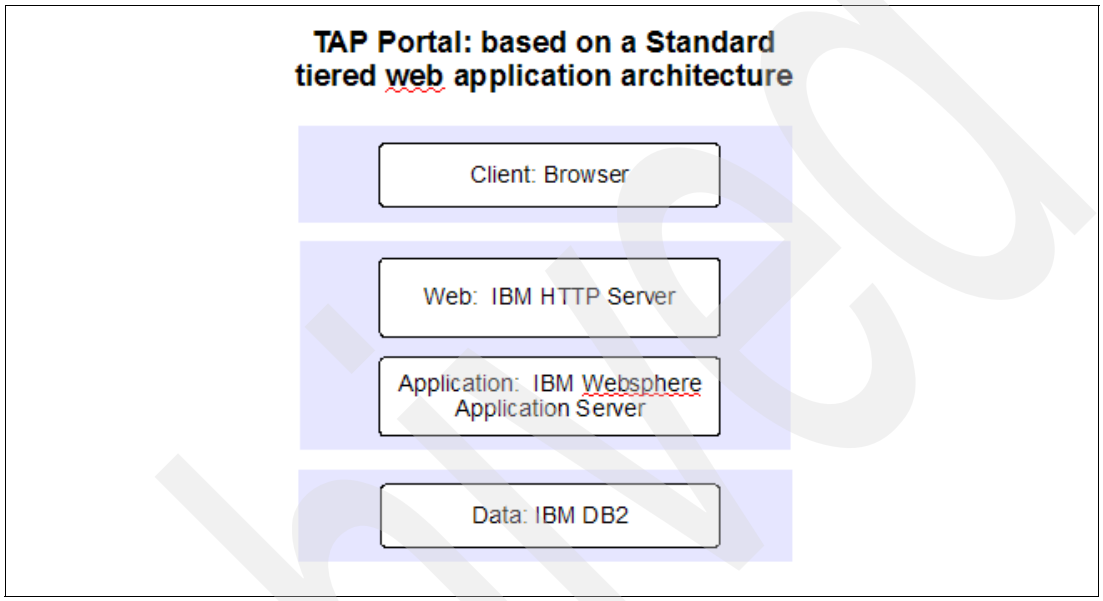


Figure 4-2 TAP portal: standard tiered Web application architecture

4.2.1 Composite application environment

The TAP portal is a composite application that includes custom application logic, data models, and user interface design components. It also integrates data and functions provided by external Web services, which are available within the IBM intranet, into the portal UI. The aspect of including other Web-based services into the TAP portal is important. There are many other Web 2.0-oriented Web services and stand alone applications that are available within the IBM intranet. Because TAP is a community-oriented application, it makes sense to integrate community-oriented Web services into the TAP UI. In Figure 4-3 on page 72 and Figure 4-4 on page 73 we highlight these integration points in the TAP portal UI.

In Figure 4-3, we show where the login link is for authentication against the enterprise directory (1) and the tag cloud (2) and the Webahead “pulse” polling widgets (3), which are integrated into the lower, right of the page.

Figure 4-3 Web services integration

In Figure 4-4, we show the Forum tabbed page that appears for an offering within TAP called “Dogear”. In (1), the portal UI is integrating a Web-based presentation of threaded newsgroup activity. TAP offerings are optionally allowed to have a newsgroup created on the internal IBM Forums server. In the case of this offering, the team leaders opted to not have a separate news group created for their Early Adopter community. So instead, the offering page here includes the general TAP newsgroup activity for the last 10 days. Also, in (2), we show where the Enterprise Tagging Service widget is integrated into this page template. The tagging widget appears in all offering pages in the TAP portal UI.

Figure 4-4 Newsgroup UI and tagging Web service integration

Figure 4-5 illustrates the system context of the TAP portal relative to the critical and optional intranet Web services on which it depends. The Enterprise Tagging Service, discussion forums, and enterprise polling service do not provide critical functionality that is necessary for meeting the functional goals of offering management. However, they are integrated directly into the design of the portal layout. The bug tracking and wiki services are shown for completeness, even though they are not included in the site design. TAP project leaders are given the option of having separate dedicated services made available from these intranet resources too, in support of their offering.

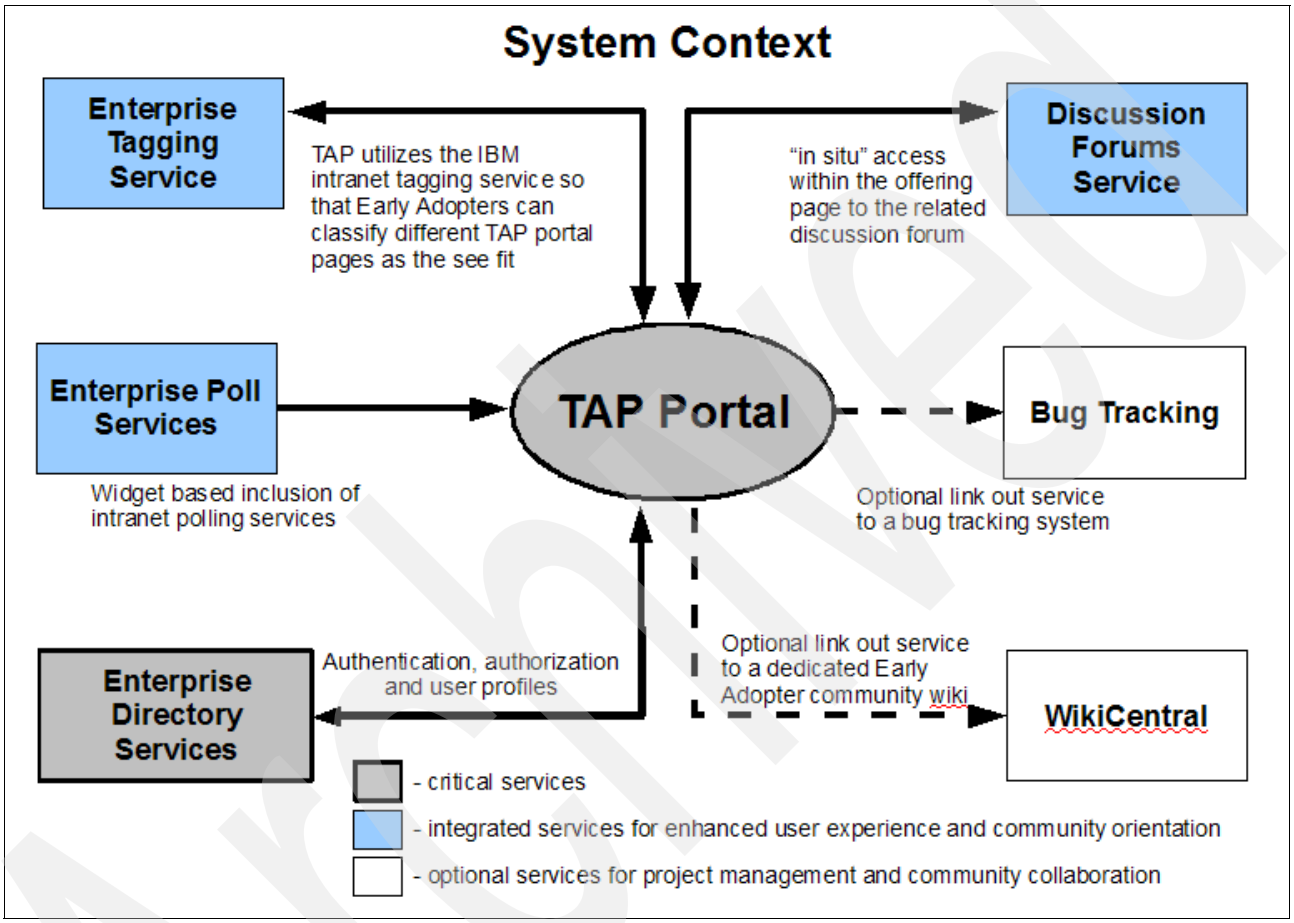


Figure 4-5 System context diagram

4.2.2 Portal application software components

As we mentioned at the beginning of section 4.2, “TAP portal design and implementation” on page 70, the TAP portal is a J2EE-based Web application that is based on a standard tiered architecture.

The J2EE runtime environment is IBM WebSphere® Application Server. The TAP application is contained within a single Enterprise Application Resource (EAR) file. The EAR file contains all the JSPs, Java™ classes, graphics, and integrated Web service APIs.

Figure 4-6 shows the components of the portal software architecture, in detail.

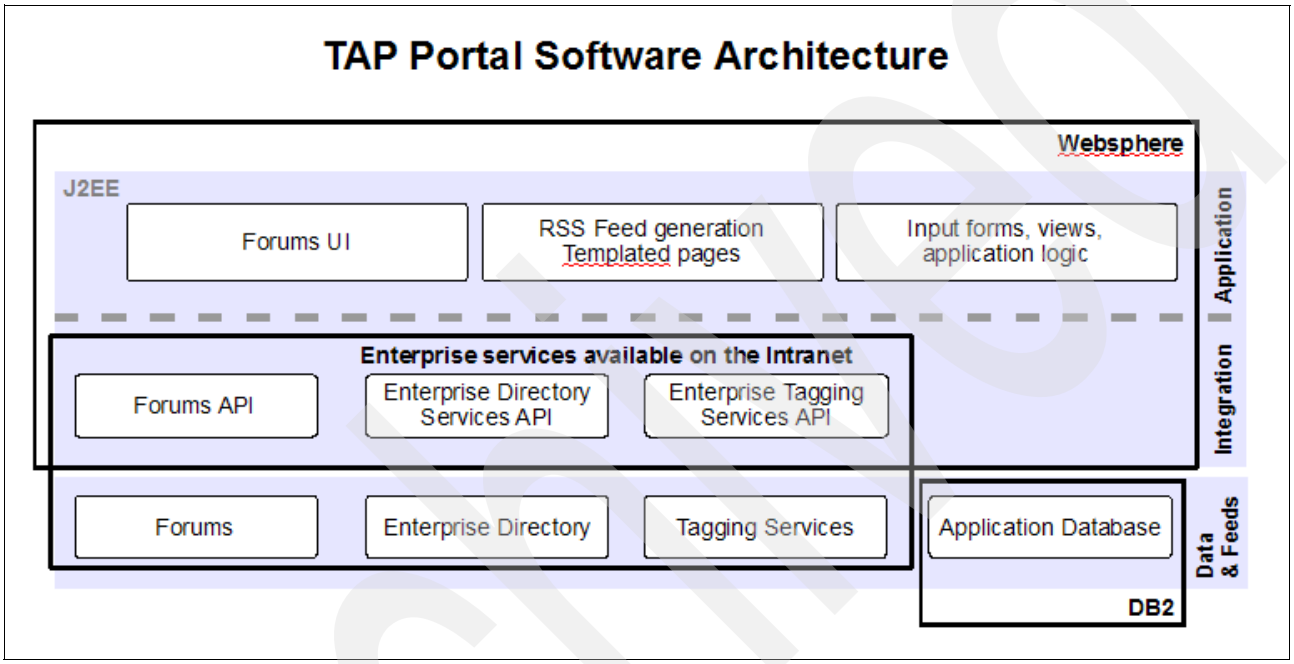


Figure 4-6 Software architecture

4.2.3 Information architecture

The functional requirements and design of the information architecture in the TAP portal are defined primarily by supporting the needs of three different user roles:

- The program manager/system administrator
- The Innovator community (offering providers)
- The First Adopter/Early Adopter communities (consumers and collaborators)

Figure 4-7 illustrates the relationships between the roles and functions in TAP.

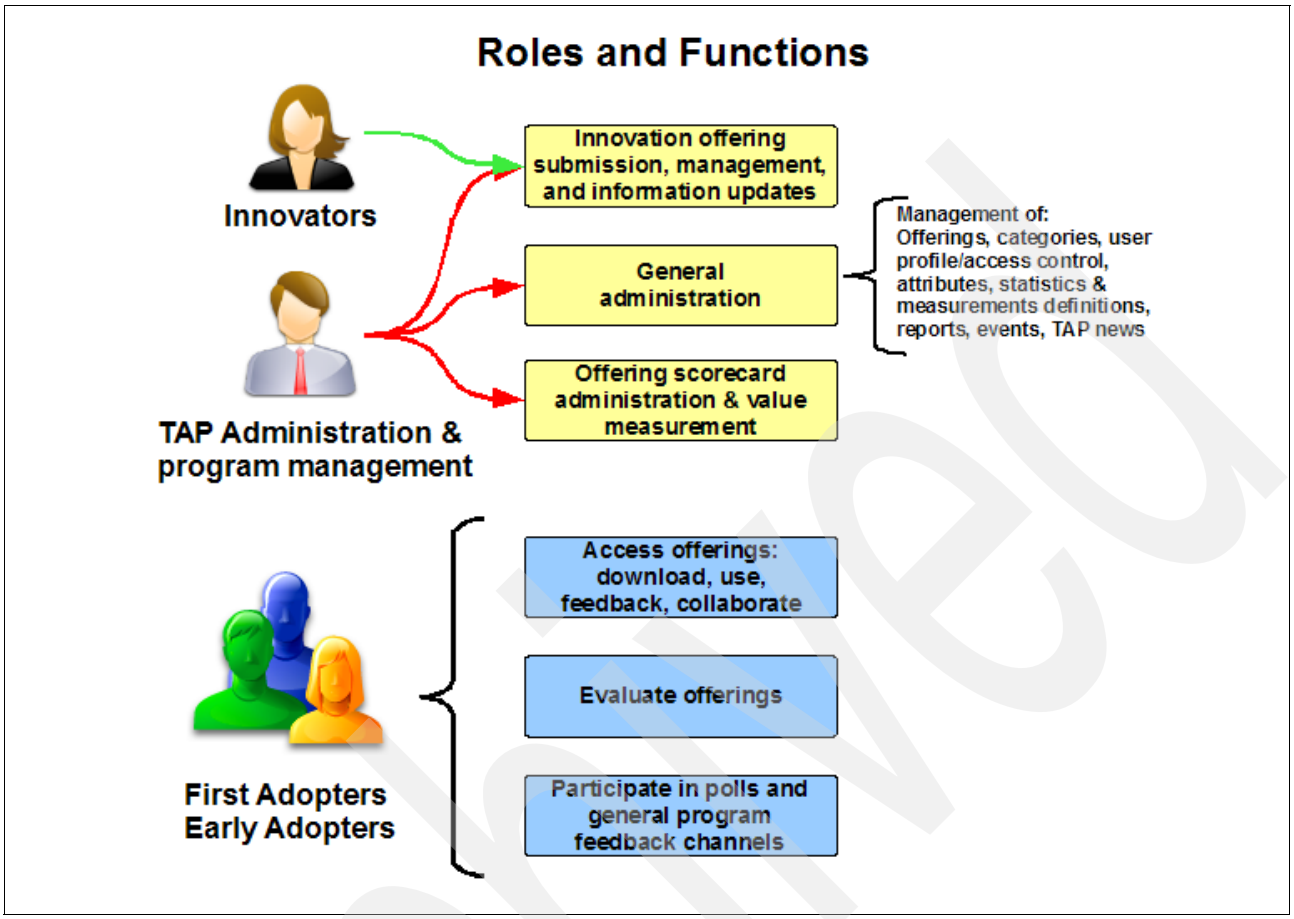


Figure 4-7 Roles and functions

In Figure 4-8, we present a view of the information architecture for the site. We focus on the function paths that support the activities of the Innovator and Early Adopter communities.

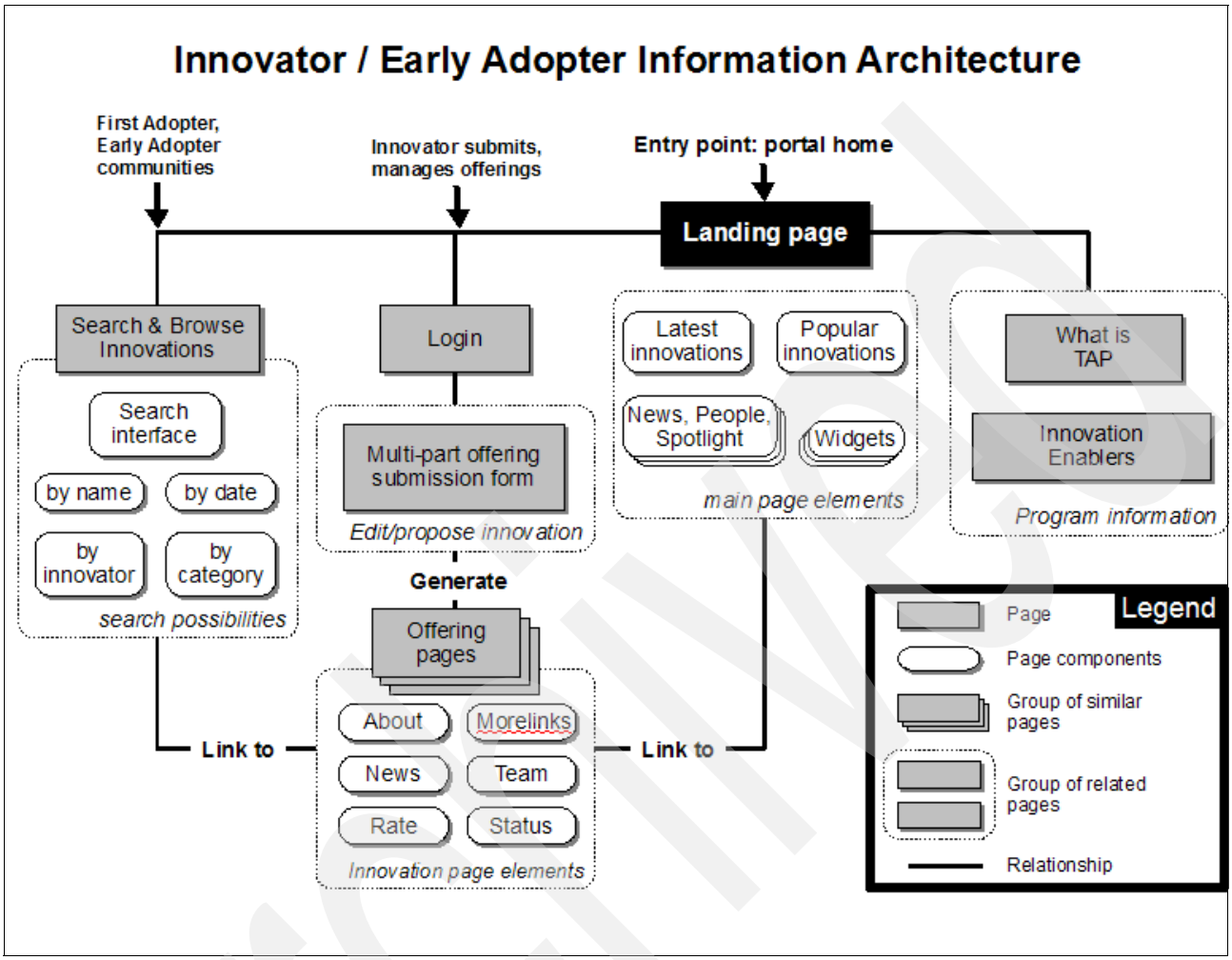


Figure 4-8 Information architecture

There are additional functional paths in the information architecture that support the system administrator role. As shown in Figure 4-7 on page 76, the system administrator role touches the TAP system in many more places than the Innovators or Early Adopters do because of the necessity to provide fine-grained tooling in the portal for managing administrative level tasks.

After administration level login access is granted, the portal provides a “TAP Administration” menu option.

Figure 4-9 shows the break out of tasks that are presented to the system administrator role.

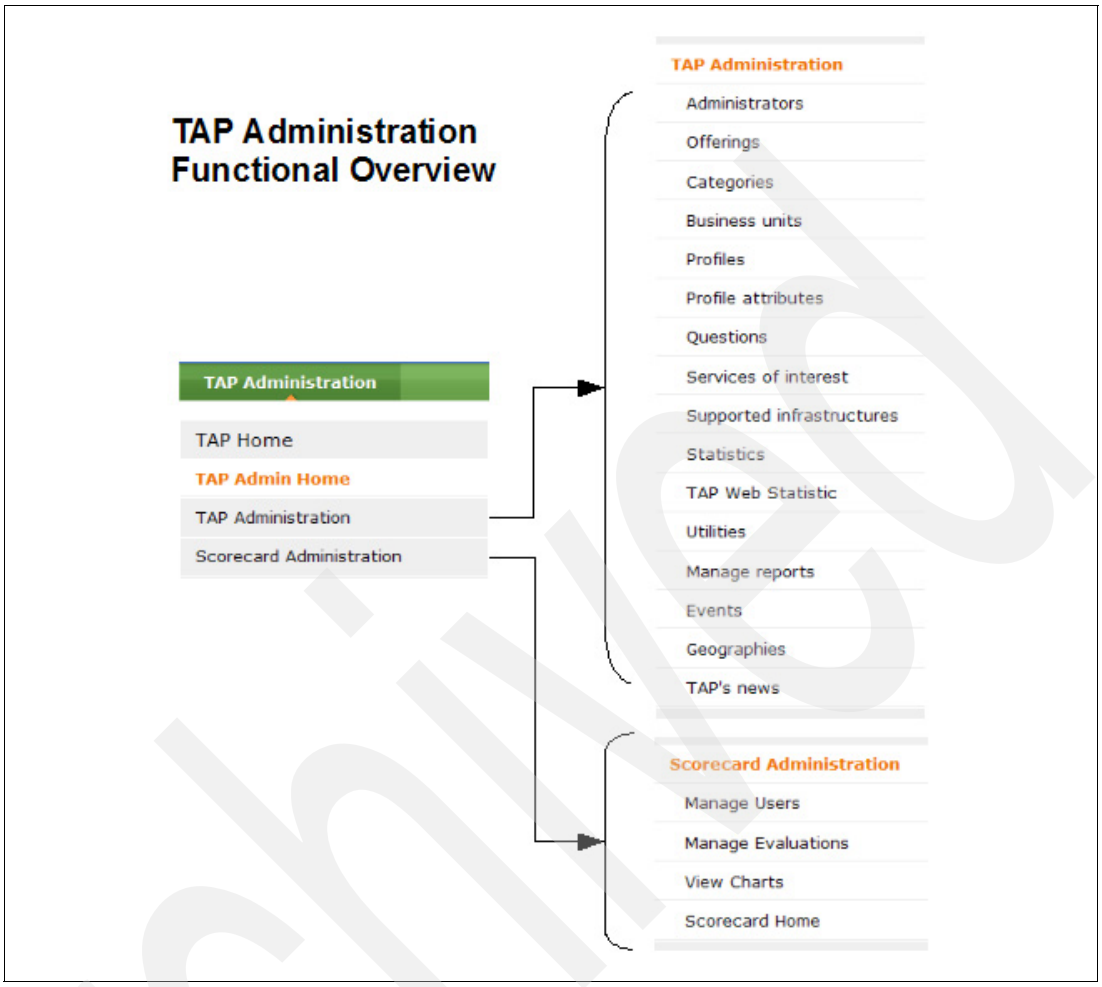


Figure 4-9 TAP administration functions

4.2.4 TAP portal operational infrastructure

In Figure 4-2 on page 71, we showed that the design of the TAP Web application is consistent with standard tiered Web application architecture practices. Within the IBM intranet, the actual operational infrastructure is implemented using parallel systems to provide load balancing and clustering for high availability for each of the application layers. The operational infrastructure hosting the IBM TAP portal Web application is shown in Figure 4-10 on page 79.

Figure 4-10 shows the operational infrastructure that hosts the IBM TAP portal Web application.

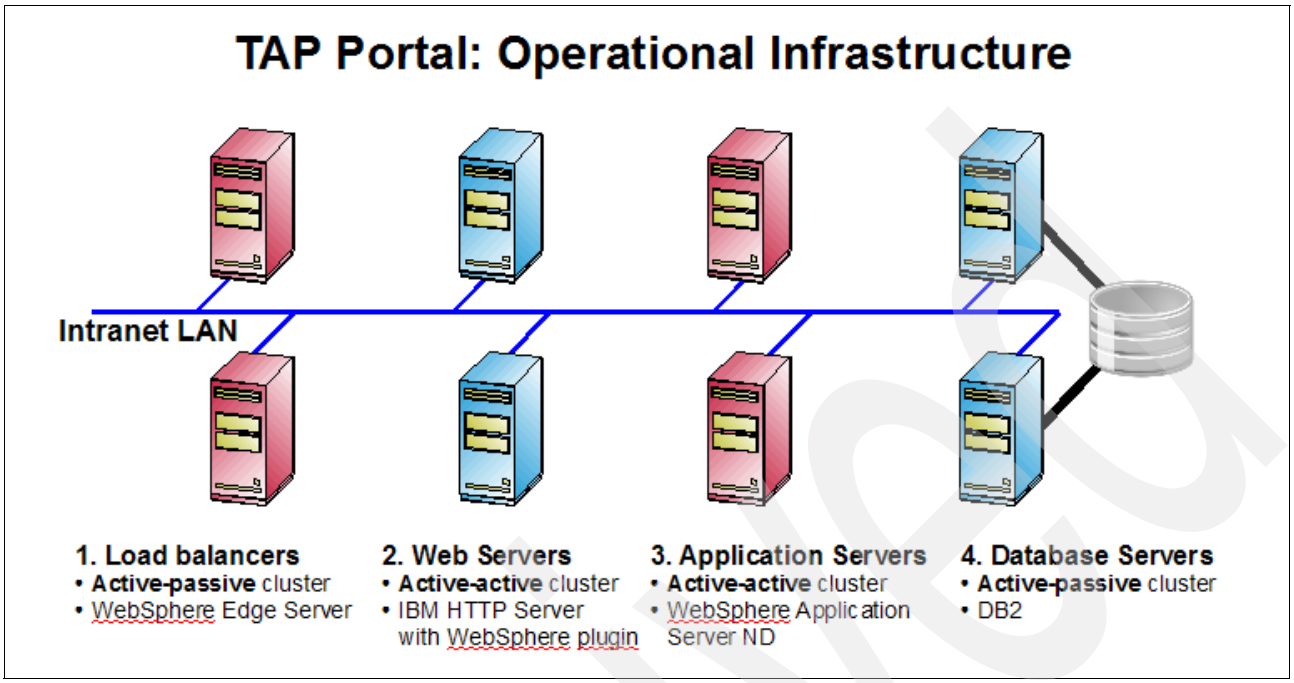


Figure 4-10 IBM TAP Operational Infrastructure

The following list contains notes on the operational infrastructure shown in Figure 4-10:

- The load balancer is optional. Actual need for a load balancer depends on the volume of requests that the system must be able to handle at peak load. A load balancer is probably not necessary unless there are plans to scale to support large communities with extremely active users. In the TAP implementation, this feature is provided by WebSphere Application Server Network Deployment Edge Components (formerly known as WebSphere Edge Server).
- The operational infrastructure is based on a Linux - Apache - WebSphere - DB2® model. As a standard J2EE-tiered application, the functional requirements of TAP can map well to any of the variations on this model, such as:
  - LAMP: Linux - Apache - MySQL - PHP/Perl/Python
  - WAMP: Microsoft® Windows® based variations

4.3 TAP hosted offerings infrastructure

As shown in the lower-right area of Figure 4-1 on page 70, the hosted offerings infrastructure is the system component in TAP that is responsible for hosting all of the different offerings that are boarded into the program.

4.3.1 Design considerations for a TAP hosted offerings infrastructure

The TAP operational model for hosting offerings needs to support frequent system provisioning and ongoing support events. The model also needs to be as cost effective and

as flexible as possible. As a community-driven, on demand-oriented environment that needs to meet a wide range of possible application hosting requirements, TAP creates a unique scenario, and is a catalyst that forces flexibility in how application services are provided. Some of the considerations unique to TAP because of this are:

- Variations in software stacks and application architectures must be embraced and supported instead of being forced to conform to a limited set of approved and supported components, as specified in existing enterprise IT support policies.
- Access controls to host systems for non-operations/IT personnel: The Innovators and technologists that provide offerings for hosting on TAP need super-user and administrator access to systems that are traditionally tightly controlled by IT operations. (for example, granting TAP Innovators with local host root access on systems in the IBM intranet-based Innovation Hosting (IHE) Environment.)
- Partitioning of risk: Providing for fault isolation at the individual offering/stack level is important so that hosting system stability for all offerings is not affected by how an individual offering is managed.
- How do you design and operate a systems provisioning infrastructure that is flexible enough to meet the requirements of the different types of innovations you expect to be able to run in it:
  - There are limits to the amount of flexibility you can provide. You need to consider the scenarios and prioritize: variations on generic LAMP, J2EE, or other software stacks.
  - What flexibilities do you allow Innovators so that they can further modify those basic stacks to meet their specific application needs, without undue administrative overhead on the hosting service staff or risk to fault isolation on the systems?
  - How due you optimize the system provisioning process? Flexibility, automation, cost minimization, and most efficient system resource utilization are key considerations. The “non-cost scaling” considerations that we mentioned in section 1.4.2, “Ongoing organic growth” on page 18, apply to how the offering host systems are designed and managed as well.

4.3.2 Hosting system options in TAP

In this section, we describe the operational infrastructure for the TAP system provisioning in the different innovation hosting environments.

When possible, the design of the host systems is geared toward maximum usage of system virtualization capabilities. The standard set of offering host options for Innovators is:

BlueHost Provides shared hosting of applications on LAMP-based systems that are running on IBM System p™ LPARs.

TDIL The TAP Dynamic Infrastructure Laboratory provides hardware-assisted virtualization (LPAR based) of host systems that are running either Linux or IBM AIX on IBM System p and dedicated Microsoft Windows-based host systems running on IBM System x™.

IHE The Innovation Hosting Environment provides IBM WebSphere and IBM DB2-based J2EE application services in a shared run-time environment.

4.3.3 BlueHost - a shared Web application hosting environment

Some innovations on TAP need no more than a simple home page and links to downloadable applications (if any). In these cases, a simple Web application instance is all that is needed.

In BlueHost, an Apache HTTP server feature called *Virtual Host* is used.[1] Virtual hosting in the Apache Web server gives it the ability to serve many different Web sites with different URLs from the same HTTP application server instance. The upper limit of virtualized sites that a single Apache server can serve is determined by the server's physical resources.

The IBM environment for this shared hosting offering is a logical partition that runs SUSE Linux 10 with 4 GB RAM and four physical CPUs on a p595 System p machine. The environment currently hosts more than 600 active virtual Web applications. Figure 4-11 illustrates BlueHost.

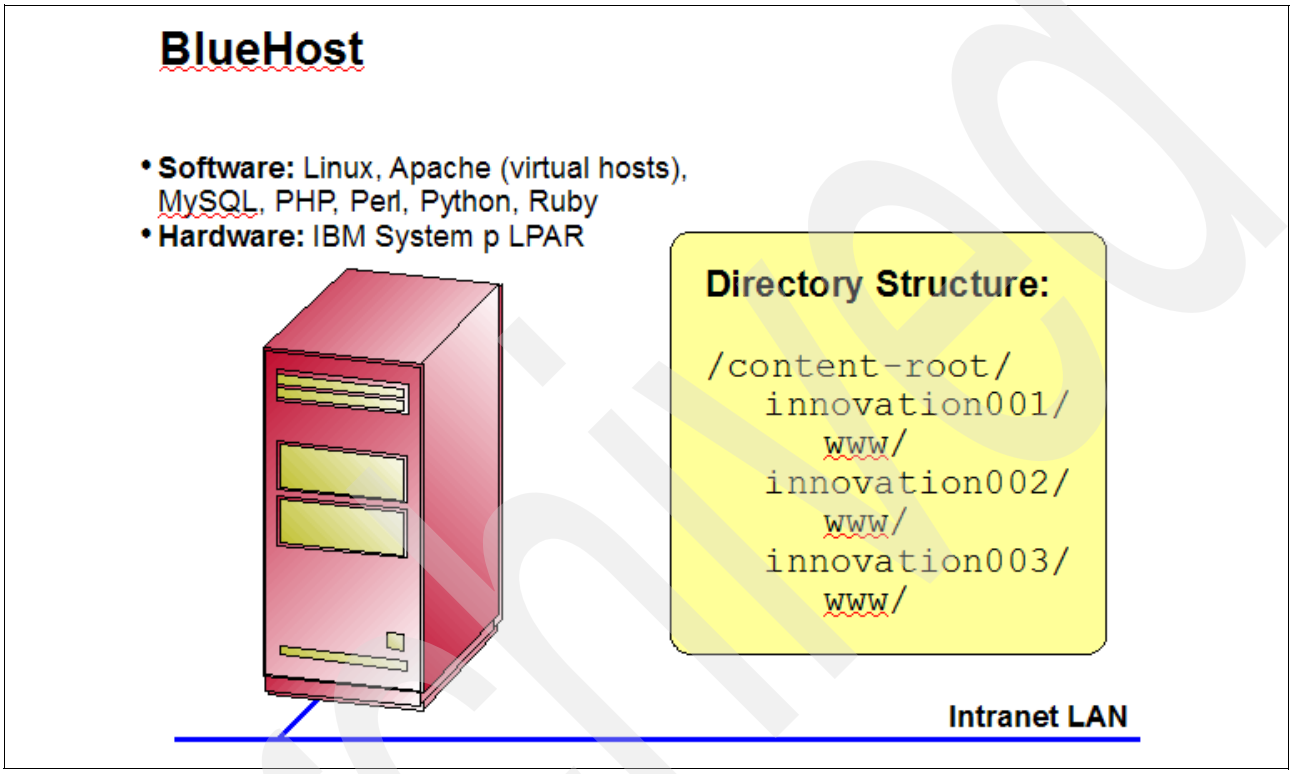


Figure 4-11 BlueHost

A BlueHost environment is created based on information that is received in a request form. The key information in the request form includes: the Innovators intranet ID, the project name, a brief project description, and a project short name. After the environment is created, the TAP Innovator receives a message that contains information about how to access it:

- Domain name of the newly created site. We use the project short name here, so that the resulting name is something like “myproject.vhost.intranet.com”.
- Web address of the online administration tool and instructions on how to use their intranet ID and password to log on.
- Information and access about the default MySQL database that was created for this project. Again, we use the project short name here.
- Web address for frequently asked questions and answers.

Through the administration tool, the Innovator can set up Web content in the application instance, which includes uploading files and creating directories.

[1] http://httpd.apache.org/docs/trunk/vhosts/

All of the tasks that are required to create the Web application instance on the shared server are automatically executed by VirtualMin[2], which is a Webmin module for managing multiple virtual hosts through a single interface. VirtualMin creates a Linux user, directories for its database and Web content, and configures Apache to start serving a new virtual host.

4.3.4 The TAP Dynamic Innovation Laboratory (TDIL) hosting environment

Although some offering requirements can be satisfied with a minimal functioning Web application instance on a shared server, others might need dedicated host servers that afford much more flexibility.

As in the BlueHost option, an Innovator submits a request form that specifies requirements for the offering host system. The basic set of TDIL hosting options include:

- Linux on System x (Intel® or AMD™)
- Linux on System p (a logical partition on a physical server)
- Windows on System x
- IBM AIX on System p (a logical partition on a physical server)

TDIL-based hosting provides the Innovator with the following:

- Dedicated servers or System p logical partitions.
- The Innovator can request a server with pre-installed WebSphere Application Server or DB2.
- The Innovator has system administrator privileges to their server to install whatever is needed for the innovation to work properly.
- On request, the server can have space allocated in a shared storage over a SAN.
- On request, the server can be part of a Tivoli Storage Manager cell for distributed backup across the TDIL SAN.

[2] http://webmin.com/virtualmin.html

Figure 4-12 shows the TDIL hosting architecture.

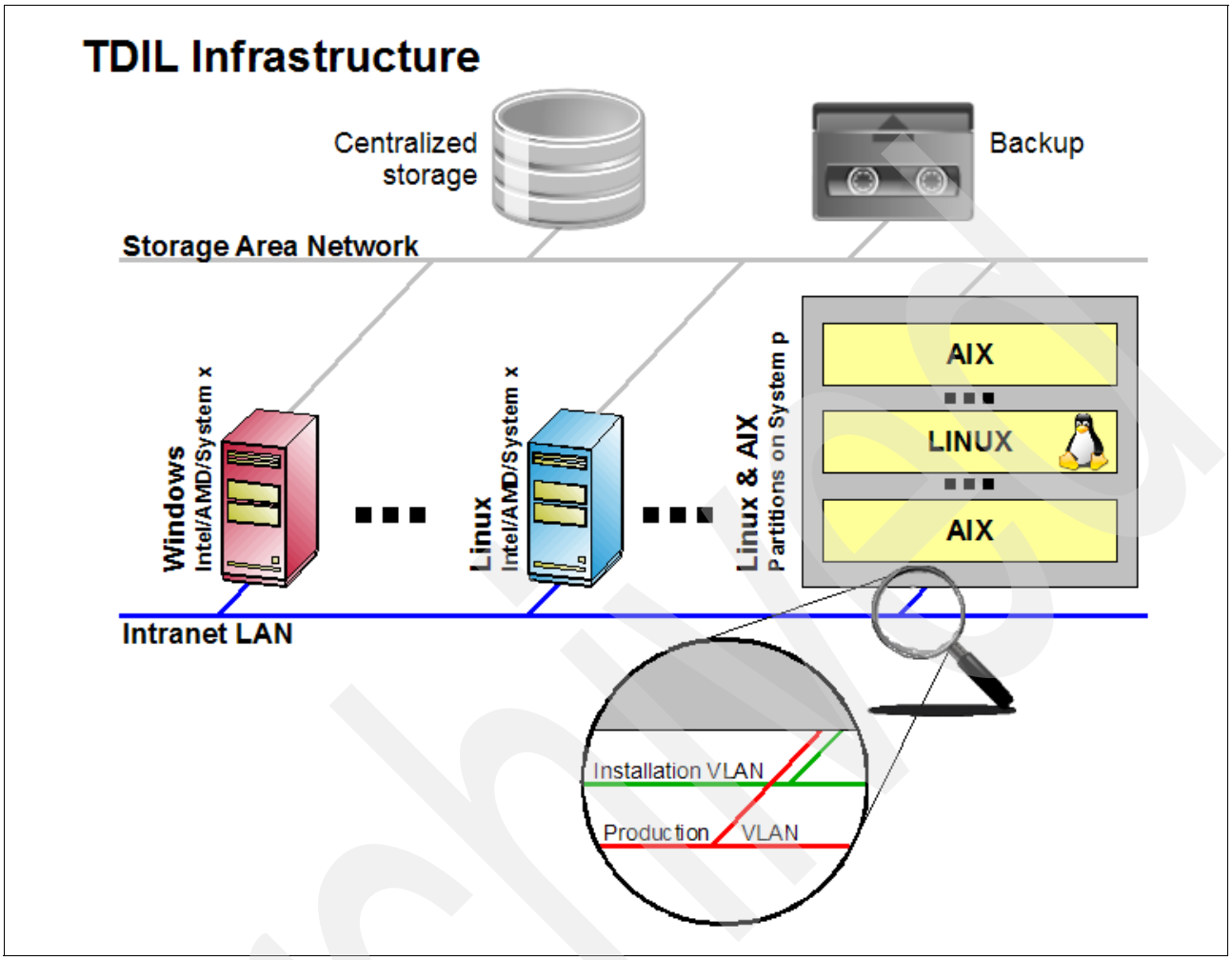


Figure 4-12 TDIL infrastructure

4.3.5 Comparing the TAP hosting environments

Although within IBM TAP is not classified as a production enterprise application environment, the success of the TAP program still depends a lot on providing a reliable and available application hosting service. The IBM CIO Innovation organization made investments in making sure that the different hosting environments that they provide are provisioned and managed to meet the expected demands. The unique requirements for access and flexibility in the hosting environments mean that they cannot be managed in the same way that tradition production systems are managed.

Figure 4-13 illustrates the differences from a support, RAS, and developer access point-of-view, with typical production system requirements shown as a baseline to help understand how innovation hosting environment management strategies differ. The pie chart indicators show approximations of the level of support *relative* to what you would expect for a traditional enterprise case production environment (the bottom row).

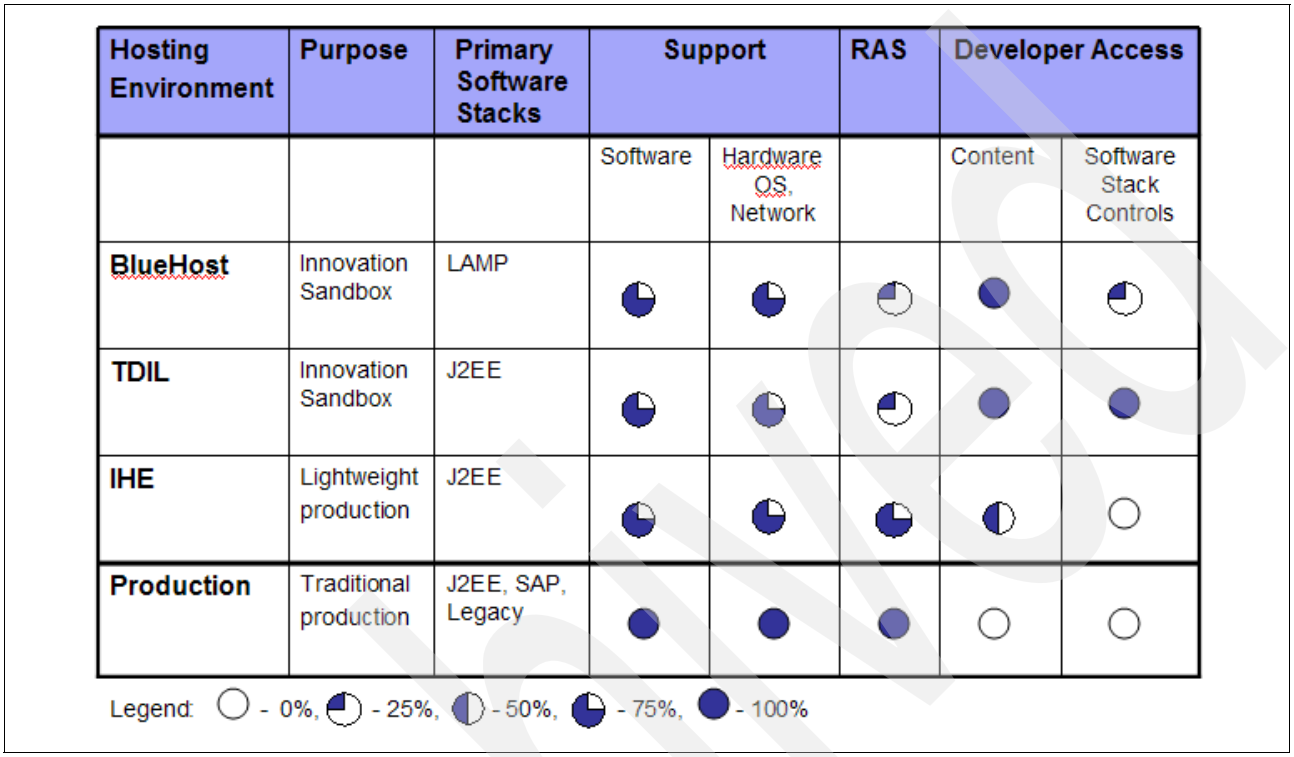


Figure 4-13 Innovation hosting environments

Index

Supporting Innovators and Early Adopters

A Technology Adoption Program Cookbook

Redpaper™

A strategy and implementation guide based on the successful IBM Technology Adoption Program

Methods for supporting the development of strategic innovation ecosystems

Techniques on how to engage, support, and manage communities of Early Adopters

This IBM Redpaper provides a strategic overview of the IBM® Chief Information Officer's *Technology Adoption Program* (TAP) within the IBM Corporation. We also provide a detailed description of the process management framework that supports the program.

This paper is for organizations that are considering the deployment of a similar program. We highlight the key internal organizational factors that contribute to the success of TAP, as well as the extent to which the program leverages the new collaborative community environment and technologies that are associated with the trends toward Web 2.0.

Leveraging Web 2.0 style community dynamics is key to the success of TAP so far. The TAP strategy focuses on supporting community dynamics *within* IBM. In this Redpaper, we highlight the importance of understanding what this means within an Enterprise 2.0[1] context.

[1] "Enterprise 2.0" is that term that was first coined in 2006 by Andrew McAfee of Harvard Business School. See *Enterprise 2.0: The Dawn of Emergent Collaboration*, Andrew McAfee, spring 2006 MIT Sloan Management Review. Available for download at: http://sloanreview.mit.edu/smr/issue/2007/spring/16/

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