THE INNOVATION MUTUAL FUND

A 6X6 Playbook for Embedding Innovation into your Organization

Provided by Aasonn

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The Innovation Mutual Fund 6x6 Playbook

Prologue

HR leaders face key challenges in the ever-changing business landscape. Deploying innovation strategies can make a meaningful difference in whether HR leaders can successfully address these challenges:

- How can HR strategically manage employees as vital business assets rather than as costs?
- How can HR help align strategies across all functions and become an enterprise business partner (click to read North Star perspective)?
- How can HR drive mutual accountability across employees and the employer?

As the human capital of the organization, employees represent the key differentiator in a company's ability to weather an increasingly volatile and unpredictable economy. Companies who treat employees as a cost to be managed rather than as an asset that requires continuous investment will fall behind their competitors.

A new role for HR is emerging. To best manage human capital, HR executives must align and integrate business, people, and reward strategies. This requires integrating work across business operations, finance, and HR functions (click to read North Star perspective).

Untapped opportunities exist for HR executives to expand their role and help solve key business challenges through innovation. "A vital part of our work as HR leaders is to continuously assess and align the priorities between the company and employees objectives," said Chris McSwain, Chief Strategy Officer of Aasonn. "Innovation offers a successful way to solve challenges of this magnitude."

The 6x6 Innovations Mutual Fund Playbook offers strategies to help HR leaders and business executives harness innovation to solve key internal and external challenges.(click here for Playbook full text including table of contents and Appendix)

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THE 6x6 INNOVATION MUTUAL FUND PLAYBOOK

1. Overview

The *6X6 Innovation Mutual Fund Playbook* provides an overview of the Innovation Mutual Fund process to company leaders and individual staff innovators. This process has been designed to inspire both individual employees and work teams to continually generate innovative products and processes, as well as to build a holistic company culture where innovation is embedded at all organizational levels. The aim of this Playbook is to inspire greatness across product lines and work teams, leading to a self-generating *innovation ethos* that spreads across and is sustained throughout the organization.

The Playbook is organized to, first, provide an understanding of innovation and the importance of embedding it into organizational culture. Next, we outline six steps and six keys an organization can take to develop such a culture using the Innovation Mutual Fund model, accompanied by exemplary organization case studies. Through these case study examples, we explore definitions of innovation, the value of maintaining an innovative culture, the costs of failed innovation, and the role of defining success to drive the innovation process. The Playbook closes with an overview of the Innovation Mutual Fund model, including descriptions of the launch, how to select and develop innovation ambassadors, how to build the needed infrastructure to support the system, how to define and measure innovative practice in the organization, and how to embed and sustain innovation as a driving value and operational strategy of the organization in the medium- and long-term.

The use of the term "mutual fund" is, by design, intended to build off of the familiar notion of a financial investment mutual fund; in this case, however, the investment is innovation. The process itself has been developed from significant research of best-in-class organizational cases, recognized for their ability to not only engender early innovative success, but also to sustain innovation as a driving ethos.

The mutual fund model is made up of six steps and six keys, designed to create continual feedback loops into the system-wide innovation process, to create champions of innovation who build and sustain the company culture of innovation by role modeling the process, and to keep individual staff motivated to continually participate in the process over the long-term. The six steps are as follows:

- ✓ Step 1: Launch the Program
- ✓ Step 2: Establish Ambassadors
- ✓ Step 3: Build Infrastructure
- ✓ Step 4: Define and Measure Innovation
- ✓ Step 5: Embed Innovation Process
- ✓ Step 6: Sustain Innovation Process

See Appendix A on page 26 for a graphic of a learning map, overviewing the entire innovation mutual fund process, core objectives, and associated learning modules.

Throughout this process, we will refer to examples and provide links to leading companies that have embedded innovation into their culture. To access full case studies of seven leading innovators, click on them here: AT&T, 3M, IBM, Bell Labs, HP, Apple, and Whirlpool.

Click here for a full reference list of resources used to develop the Innovation Mutual Fund Playbook.

2. Why Innovate?

2.1 What is Innovation?

Peter Drucker describes innovation as the effort to create purposeful, focused change in an enterprise's economic or social potential. From a business perspective, it is a means by which an organization either

Innovation: The embodiment, combination, or synthesis of knowledge in original, relevant, and valued new products, processes, or services.[1]

creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth.[1]

Companies may have their own unique definitions of innovation. At 3M, for example, a slogan reads, "Research is the transformation of money into knowledge. Innovation is the transformation of knowledge into money."[2] HP considers innovation to be a customer-focused, technology-based process. Its definition of innovation is "the business of creating and developing good ideas and turning them into a successful business reality." The company refers to innovation as a "joint process" between HP and the customer.[3]

2.2 Embedding a Culture of Innovation

2.2.1 Defining Culture and Embedment

As we see from examples such as AT&T, Apple, and Bell Labs, the implementation of innovation systems and practices builds strong organizational cultures that generate individual creativity and organization-wide innovation. When an organization adopts innovative practices to the level that all employees emulate them across all units and work groups, we can describe its innovation culture as "embedded." Embedment refers to the institutionalization of a core organizational competency. It is a process to ensure that a new way of thinking, new skill sets, or measures and business strategies become part of organizational culture in a lasting way.[4] Culture is consistent, observable patterns of behavior in organizations. By learning how to establish an Innovation Mutual Fund, you will develop strategies to embed a culture of innovation within your own organization.

2.2.2 How 3M Embedded Innovation

3M has promoted innovation by formalizing a culture and community of collaboration, where its 8,500 researchers develop informal relationships and can call upon each other for advice. The company spends six percent of its sales on research and development, an unusually high number for a manufacturing company, and a number of structures exist to encourage networking amongst researchers. Since 1951, for example, the company has held Annual Technical Forums, attended by thousands of research and development personnel who present papers and discus projects they are working on. Individual labs also host regular conferences and webcasts and elect representatives to

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[1] Drucker, P. (1985). Innovation and entrepreneurship: Practice and principles. New York: Harper & Row.
[2] 3M. (2012). A Culture of Innovation. Retrieved April 18, 2015, from http://solutions.3m.com/3MContentRetrievalAPI/BlobServlet?lmd=1349327166000&locale=en_WW&assetType=MMM_Image&assetId=1319209959040&blobAttribute=ImageFile
[3] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from http://www8.hp.com/us/en/campaigns/services/faq.html
[4] Tennant Snyder, N. & Duarte, D.L. (2003). *Strategic innovation: Embedding innovation as a core competency in your organization*. Retrieved April 27, 2015, from https://www.safaribooksonline.com/library/view/Strategic+Innovation:+Embedding+Innovation+as+a+Core+Competency+in+Your+Organization/9780787964054/ch002-sec001.html#fig2.1

policy bodies. Within the organization, divisions and internal businesses share more than 300 joint programs.[5]

3M also rewards its researchers heavily for innovation. Each year it gives awards to hundreds of employees for scientific achievement, offers holidays to the top twenty innovators, and provides a dual-career ladder. Researchers can move up in the company without the expectation that they will become managers – one that is common in the manufacturing sector. Researchers may focus solely on research and receive the same pay and benefits as management. They are also allotted nearly a day a week to focus on projects outside their main responsibilities – a policy known as the "Fifteen Percent Rule."[6]

2.2.3 Whirlpool's Embedment Process

As Whirlpool's VP of Business Process Management J.D. Rapp describes it, embedding innovation is an ongoing and challenging process:

> *During our first ten years of striving to embed innovation as a core competency, a major acquisition followed by the recession posed new challenges. Emerging competitors in recent years require us to behave differently. Our 13-year quest for an embedded innovation approach has answered these challenges with creative approaches that have allowed us to stay focused, relevant, and competitive. One would think that after the big-bang approach to embed innovation in the early 2000s we would be on auto-pilot by now, but each phase has required the same level of attention from the innovation architects (those creating blueprints and building innovation capability) to take innovation to new heights."[7]*

During this time, Whirlpool has developed a list of criteria to assess the embedment of their innovation process. Click here to view the checklist (Appendix D).

Click here to learn more about how other best-in-class innovators – AT&T, Bell Labs, and IBM – have embedded innovation into their organizations (Appendix A).

2.3 The Value of an Innovation Culture

An innovation culture that is fully embedded helps an organization's innovation engine to operate at its best. The seven cases outlined here demonstrate the value of their successful innovation systems to incorporate profitability and sustainability. Furthermore, research shows that innovative cultures can accomplish the following:

- ✓ Differentiate the company from competitors
- ✓ Generate new ideas for near and long term business growth

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[5] Arndt, M. (2006, May 9). 3M's seven pillars of innovation. *Bloomberg.* Retrieved April 17, 2015, from http://www.bloomberg.com/bw/stories/2006-05-09/3ms-seven-pillars-of-innovation
[6] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all
[7] Rapp, J.D. (2013, January 23). Inside Whirlpool's Innovation Machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

- ✓ Create innovation competency
- ✓ Build innovation capacity and improve the ability to innovate
- ✓ Harness ideas to improve the company and its services
- ✓ Enable and empower each employee
- ✓ Encourage individual creativity
- ✓ Encourage innovation from employees who would not normally innovate
- ✓ Produce higher performing employees
- ✓ Affirm the value of employee opinions
- ✓ Increase profitability
- ✓ Strengthen relationships between employee and employer
- ✓ Create deeper buy-in to organizational success
- ✓ Increase employee business knowledge
- ✓ Increase knowledge of the company and employee roles
- ✓ Strengthen relationships between employers and suppliers[8] (For more information, see the video series "Integrated Benefits Institute Winning Together" Part 1 (https://www.youtube.com/watch?v=iaECV2SH-xo) and Part 2 (https://www.youtube.com/watch?v=iQiWuQwCwnI) authored by Chris McSwain. See attachment for supporting documents.)

These qualities of a strong organizational culture ensure high levels of commitment from employees. Through significant and meaningful engagement in organizational innovation, staff build bonds with one other and experience accountability and buy-in for products and processes they directly support. This creates a virtuous circle in which innovators serve as role models to others, becoming anchors in building and, more importantly, in sustaining innovation.

2.4 Companies that Inspire: "Best-in-Class" Examples

This Playbook includes seven examples of organizations that have successfully made innovation a foundation of their organizational cultures: 3M, Bell Labs, AT&T, Apple, HP, Whirlpool, and IBM (see Appendix E for more information). These "best-in-class" cases can help provide an understanding of how innovation has become a core organizational value and a predominant component of corporate strategy.

Click here to read about these leading innovation processes, including how the companies have embedded innovation into their organizations, how they frame innovation, and how they measure it.

For more examples of innovative cultures, visit the *Harvard Business Review* cases of DARPA or Skunk Works.

2.5 Innovation Failed

 "How important is failure - yes, failure - to the health of a thriving, innovative business? So important that Ratan Tata, chairman of India's largest corporation, gives an annual award to the employee who comes up with the best idea that failed."

Naveen Jain,[1] Founder and former CEO of InfoSpace

Successful innovation cultures appreciate experimentation and permit failures as employees develop new ideas and "tinker" existing processes and products. Failure gone too far, however, can result in dramatic financial losses and even lead to a company going under. Usually, these failures are due to flawed innovation systems or ineffective cultures, as we see in the cases of Blackberry's demise, Kellogg's venture into India, and Lego's launch of Lego Universe.

2.5.1 The Decline of Blackberry

Perhaps the most famous recent case of innovation failure is the decline of BlackBerry producer Research in Motion (RIM). In 2012, the Canadian wireless and telecommunications company quickly lost its market dominance in the smart phone sector and nearly disappeared. Analysts say this was due largely in part to RIM's inability to embed an innovation process as the company grew from a start-up to a large corporation. Co-CEOs Mike Lazaridis and Jim Balsillie perhaps placed too much emphasis on their role in running the company and focused too little on empowering employees to do their jobs. Leadership also remained overconfident about competitors' capabilities. "How much presence does Apple have in business?" Lazaridis said in an interview with *The Guardian* newspaper when Apple revealed the iPhone in 2007. "It's vanishingly small." The company also remained out of touch with its customer base, assuming that smartphone use would never extend beyond use for business purposes into the personal realm.[9] Click here to read more about the decline of Blackberry.

2.5.2 Kellogg's Venture into India

Kellogg also failed to understand their consumers when making the move into India. The global company assumed that the country's 950 million potential consumers would eagerly purchase breakfast cereals, investing $65 million in launching Corn Flakes, Wheat Flakes, and its "innovation" Basmati Rice Flakes nationwide. "Our only rivals are traditional Indian foods like idlis and vadas," declared the managing director of Kellogg India. Kellogg's products, however, could not compete with those traditions. Consumers, used to eating home-cooked foods such as idli and vada, failed to warm to cold breakfast foods. Sixteen years later the company was earning only $70 million in annual revenues in India, as opposed to the $3 billion business it had originally anticipated.[10] Click here for more information on Kellogg's move into India.

2.5.3 Lego's Launch of Lego Universe

In contrast, Lego's development of the online game Lego Universe is a case of too much customer research. According to Stefaan Lindegaard, the company relied on consumer feedback to the detriment of the game. Lego executives have admitted they should have relied more on an intuitive approach and gone a little more "wild" by releasing the game before receiving user feedback, and then developing it further from there. "Yes, Lego lost a big chunk of money, but in the long run, you need to take chances

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[9] Castaldo, J. (2012, January 19). How management has failed at RIM. *Canadian Business.* Retrieved May 4, 2015, from http://www.canadianbusiness.com/technology-news/how-management-has-failed-at-rim/

[10] Bolton, R. (2012, May). Phantom markets: A lesson from Kellogg's mistaken venture. *Harvard Business Review.* Retrieved May 4, 2015, from http://www.innosight.com/innovation-resources/strategy-innovation/phantom-markets-a-lesson-from-kelloggs-mistaken-venture.cfm

to win," writes Lindegaard. "Perhaps Lego even learned that they should have taken even bigger chances."[11] Click here for more information on Lego Universe.

3. How does the Innovation Mutual Fund work?

3.1 The Innovation Mutual Fund Process

The Innovation Mutual Fund process is based on significant research of best-in-class organizations recognized for their ability to innovate successfully and to sustain innovation through a fully embedded culture. We have presented these best practices using a mutual fund concept, drawing a parallel between a financial investment tool and an innovation investment. The goal of the Mutual Fund is to create *mutuality* - to enable each employee to contribute to and fully appreciate their critical role in the organization, as well as *fund* - to provide resources to foster personal success in alignment with that of their employer.

There are two layers of 'investment' underlying the Innovation Mutual Fund concept. The first is real dollar seed money distributed by the employer to a company-wide mutual fund, which will be disbursed as prize money to the most innovative ideas that emerge from the process. The second funds refer to a bank of 'monopoly money' distributed to each qualified Ambassador (i.e. 10,000 Monopoly Dollars), serving as a mechanism for Ambassadors to vote on the best emerging innovation concepts, before passing the top voted ideas on to company leadership for final selection.

The Innovation Mutual Fund also provides an easy, step-by-step process (six steps and six keys) that takes your company from conception to full cultural embedment. Knowledgeable innovation consultants are available to support all stages of implementation of the Innovation Mutual Fund Playbook. As part of the program, participants also receive the following:

- ✓ A description of the power of innovation and how it benefits the employee and the company.
- ✓ A step-by-step approach to creating and sustaining an innovation platform.
- ✓ Links to research supporting every aspect of the playbook.
- ✓ A resource guide to contemporary articles and books on innovation.
- ✓ Resources on brain training.
- ✓ Teaching tools.

3.2 So, how does this benefit me and my company?

Multiple reasons exist to shape your company's innovation process around the mutual fund concept. Specifically, the Innovation Mutual Fund offers the following benefits:

- ✓ It is simple and easily executed.

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[11] Lindegaard, S. (2011, November 13). Lego's $50 million open innovation failure. Retrieved May 4, 2015, from http://www.15inno.com/2011/11/13/legouniversefailure/

- ✓ It can be replicated in all sizes of organizations.
- ✓ The model affords everyone a chance to participate.
- ✓ The model provides for initial education getting all employees up to speed on the purpose and definitions of innovation and also provides for ongoing education and personal improvement.
- ✓ Either individuals or teams can enact the model as qualified investors determine how they want to work on ideas.
- ✓ The model includes a continuous improvement cycle.
- ✓ Implementation is low cost and quickly executed.
- ✓ Recognition components support visibility of each participating employee and the program itself.
- ✓ The model is easily explained to others.

In addition, the mutual fund is transferable to all types and sizes of companies. The Playbook is easily understood and provides a method that can be replicated in a range of industries and organizational cultures.

3.3 Results

Research and practice have shown that successful, sustainable innovation practices, such as those outlined in this Playbook, have three similar building blocks:

1. The type of innovation the company and individuals aspire to is clearly defined.
2. Parameters of success are articulated and measured systematically.
3. Staff and leaders alike buy in to the rationale for building a sustained innovation process.

Evidence also shows that companies that successfully integrate components of the Innovation Mutual Fund develop three cornerstone synergies critical to long-term and sustainable innovative practice. These synergies are:

1. A process that enables employees to contribute to and fully appreciate their critical role in the organization.
2. A process that fosters individual employee success that aligns with that of their employer.
3. A process that is collaborative, engaging the entire organization in timely and inspiring activities at each stage.

4. Implementing The Innovation Mutual Fund: Six Steps and Six Keys to Success

Below we will take you through the six steps of the Mutual Fund process: the launch, becoming an Innovation Ambassador, building infrastructure, defining and measuring innovation, embedding innovation, and sustaining the effort.

4.1 Step One: How do I Successfully Launch My Innovation Mutual Fund?

Launching your innovation program with our Mutual Fund approach is simple. We use a web-based platform to manage the initiative and facilitate the work of your Ambassadors, as you will see in Steps 2 through 6. Our tools help to ensure a mindset shift early on in the process, as well as to supply continued resources to shape employee understandings of innovation and its value in driving their daily operations.

> "Tools are great. But giving people tools, without first changing their mindset is useless." [1]
>
> *Stephen Shapiro with InnoCentive, on the importance of establishing a culture of innovation from the outset*

This step involves announcing the creation of your employee's mutual fund:

- ✓ Invite every employee to participate in shaping their future and the future of the company.
- ✓ Point out that you are making an investment in each employee by rewarding their ideas, empowering them to become Innovation Ambassadors and ultimately creating a culture that supports innovation and the success of every employee and the company.
- ✓ Establish the real money fund to reward the best innovation ideas.
- ✓ Announce the "Monopoly Money" funds to be distributed to all Ambassadors to create a voting mechanism at the heart of the innovation development process.

4.2 Step Two: How do I become an Innovation Ambassador?

Earning Ambassador status is a straightforward step. The process of becoming an Ambassador, in itself, ensures that the ideas that come from innovation align with organizational priorities. The process includes the following:

- ✓ Each employee creates an innovation profile and completes a survey online.

- ✓ Employees with completed profiles are then eligible to take an innovation exam. Exam preparation would include employee study of selected innovation reading materials coupled with instruction on how to think about innovation. The curriculum would also provide examples of innovation in line with your company's strategic objectives. This step is what defines the type of innovation your company wants to advance.

- ✓ By tailoring the selection of reading materials provided to employees to qualify as an Ambassador, an employer will ensure that each employee focuses on the desired type of innovation.

- ✓ Employees passing the exam receive the designation of Innovation Ambassador.

- Innovation Ambassadors are entitled to 10,000.00 'Monopoly Dollars' to vote for their favorite ideas.

- Companies may consider setting aside 0.5% of profit from a successful marketed innovation to invest back into the Mutual Fund. Dispersing these profits to Ambassadors is a way to connect human and business capital.

✓ Each person that passes the exam will receive a symbol (icon) that denotes they are qualified Innovation Ambassadors. This symbol will appear on every hard mail and email so that everyone inside and outside the company can see that he or she is engaged in innovation.

✓ As employees continue to participate as Ambassadors, they will receive two types of ongoing recognition: longevity and idea generation recognition. Both of these designations will also have their own unique symbols that also appear on employee mail. In addition:

- Employees may submit ideas as an individual or as a group. The top five investment dollar recipients go to the final review for decision on execution.

- Each employee will be given five hours a month on company time, to explore innovation as defined in the curriculum.

- Note that some ideas may not be 'ripe' but are in fact good ideas. These should be set aside for future consideration.

- A filtering mechanisum is in place to support the development of ideas and provide direction to qualified Ambassadors during the development stages of their ideas (this can be a person selected within the company or outsourced).

✓ If an idea is in the top five selected that year the employee is eligible for a cash/innovation dollars prize that is drawn from the original mutual fund account balance. If the employee's idea is THE IDEA to be implemented, they are eligible for a larger financial award.

- If the employee's idea is chosen, they will spend five hours with a senior executive of their choice to discuss the thinking behind their innovation idea and how to implement it.

- If the employee's idea is ranked in the top fifteen, those employees will be recognized at an annual awards ceremony.

4.3 Step Three: How do I Build Infrastructure to Implementing Innovation?

Building infrastructure ensures that innovation is a seamless effort flowing across the organization. We explore in greater detail the six keys that align with infrastructure in the second part this document. Research shows that building a sustainable long-term innovation system requires the following:

- ✓ Key 1: Establish the right conceptual building blocks
- ✓ Key 2: Facilitate the effort with innovation catalysts
- ✓ Key 3: Provide appropriate training and tools
- ✓ Key 4: Involve others in identifying and developing innovations
- ✓ Key 5: Engage employees' hearts and minds
- ✓ Key 6: Celebrate every step and keep it compelling

The six key activities may be simple to envision, but their sequencing and implementation require a champion - a senior executive (the "innovation champion") within the company who will lead and support the process throughout the organization. In this role, this innovation champion can gain top-down support to advance innovation, as well as secure the tools and resources necessary to embed and sustain this important work. Other senior leaders within the company can also coach and mentor Ambassadors as they are formulating their ideas. Early ideas might benefit greatly from external championing and feedback.

In addition, different types and sizes of companies might run into different kinds of challenges as they move through the process. External innovation support is available as consultants can provide practical advice to support the actual implementation of the innovation playbook..

4.4 Step Four: What are the Benefits of Defining and Measuring Innovation?

Defining, framing, and measuring are pivotal activities to success to ensure your company's pursuit of innovation is tightly aligned with its business objectives. A number of approaches to innovation exist, and you will decide which one aligns best with your business interest (note: the curriculum will be tailored to drive the type innovation your company desires). Select among many framing elements below to mix and match the type of innovation you seek. Once selected, these framing elements guide the innovation thinking and later will serve as the criteria for judging innovation ideas. We will explore the process of defining and measuring innovation here. Remember, there is a big difference between improvements and innovation.

4.4.1 Defining Innovation at Apple

At Apple, Steve Jobs established a culture of innovation based on passion, vision, and intuition. To Jobs, innovation was an ideal aimed at enriching the lives of customers - extending past selling products to selling a dream. "We believe that innovation is about leaving the world better than we found it," says Lisa Jackson, Apple's Vice President of Environmental Initiatives.[12] Jobs also stated that his vision was to "put a dent in the Universe,"[13] and he expected his employees to share this vision. When he returned to lead Apple in 1997, he asked them directly, "What are you doing to make the Macintosh or Apple

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[3] Apple Inc. (2015, February 23). Apple to invest €1.7 Billion in new European Data Centres. Retrieved April 15, 2015, from https://www.apple.com/pr/library/2015/02/23Apple-to-Invest-1-7-Billion-in-New-European-Data-Centres.html

[13] Sutter, J.D. (2011, October 6). 5 memorable quotes from Steve Jobs. *CNN.* Retrieved April 21, 2015, from www.cnn.com/2011/10/05/tech/innovation/steve-jobs-quotes/

great?" Those without a good answer were fired immediately.[14] He also launched the "Think Different" advertising campaign that celebrated famous innovators. Jobs said the campaign targeted Apple employees as much as customers. "Our heroes are innovators," he told them. "We stand for innovation. If you want to work at Apple, we expect you to innovate." [15]

For Jobs, innovation was as much an art as a science. "It's the intersection of technology and liberal arts that makes our hearts sing," he once said. He saw a broad range of experiences as inspiring creativity. A calligraphy class he once took, for example, helped him to develop the Macintosh typeface and fonts. Apple retail stores were designed to resemble a Ritz-Carlton hotel. As well, he responded to critics in a way similar to an inspired artist. "Don't let the noise of others' opinions drown out your own inner voice," he said. "And most important, have the courage to follow your heart and intuition. They somehow already know what you truly want to become."[16]

4.4.2 What are Proven Approaches to Framing Innovation?

Every organization is different and what you consider as innovation should be tied to your business objectives. Consider these "buckets" for grouping innovation ideas to determine what your organization wants to achieve from innovation:

- Look ahead and generate ideas that have a future application.

- Focus on improving an existing product or service.

- Improve your customer experience.

- Achieve a quick return on investment.

- Consider ideas with long-term application.

- Create breakthrough ideas that will completely disrupt the market.

- Find new business opportunities.

Click here to learn more about how leading innovators IBM, HP, Whirlpool, AT&T, and Bell Labs frame innovation.

4.4.3 What are Proven Approaches to Measuring Innovation?

Your company's definition of innovation will depend on both your operational and environmental contexts, and it will need to align with the idea generation, evaluation, and execution stages of this process.

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[14] Scoble, R. How can Apple employees be so innovative? Retrieved April 15, from http://www.quora.com/How-can-Apple-employees-be-so-innovative

[15] Dyer, J. and Gregersen, H. The secret of innovative companies: It isn't R&D. *Innovation Management*. Retrieved April 15, 2015, from http://www.innovationmanagement.se/2013/04/18/the-secret-of-innovative-companies-it-isnt-rd/

[16] Gallo, C. (2014, May 22). The seven innovation secrets of Steve Jobs. *Forbes.* Retrieved April 15, 2015, from http://www.forbes.com/sites/carminegallo/2014/05/02/the-7-innovation-secrets-of-steve-jobs/

Initial innovations must be narrowed down to a sub-set of best ideas to devote further resources to their expansion. This requires a clear set of criteria upon which to evaluate the initial ideas. Such criteria should not be so stringent as to dissuade effort, but should also be focused enough to ensure ideas are in alignment with core business objectives. To accomplish this we might consider issuing an annual Innovation Challenge.

Evaluation of the implemented ideas requires a second set of criteria appropriate to this stage, one that is more refined than those of the initial idea generation stage (e.g. costs, executability). These elements further serve as the foundational criteria for ascertaining what defines success and should be developed within each organization.

Click here for comprehensive examples of how leading companies measure innovation performance.

4.4.4 Integrating Innovation into Performance Standards

Increasing evidence demonstrates the power of including innovation as a key performance measure across the organization, as well as integrating it into specific measures to gauge individual success. To enhance an emerging innovation culture after a first round deployment of the 6X6 framework, staff must understand their individual roles and responsibilities to ensure the company meets the innovation targets associated with the company mission. Thus, innovation must become a foundational and integrated element of the performance management system at all levels.[17]

4.4.5 How HP Measures Innovation

Hewlett-Packard, also known as HP, outlines three requirements for its innovation process. First, the transition must be based upon client business requirements. At HP Innovation Centers, this is achieved by working directly with the client to outline technology needs. Second, the technology adoption must be "evolutionary and not revolutionary." This helps ensure that it is easily adapted, as outlined in scenario- and environment-driven assessments. Finally, the transition must achieve a "timely business result," a benchmark in line with HP's goal of helping customers maximize their returns on technology investments.[18]

Click here to learn more about how other leading innovators measure their innovation processes.

4.5 Step Five: How do I Start and Continue a Dynamic Process for Embedding Innovation?

Embedment refers to the institutionalization of a core competency such as innovation. It is a process to ensure that a new way of thinking, new skill sets, measures, and business strategies become part of organizational culture in a lasting way.[19] For such efforts to be 'embedded' within an organizational

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[17] Burchall, D., Tovstiga, G., Morrison, A., & Gaule, A. Innovation performance measurement: Striking the right balance. Retrieved April 30, 2015, from
http://www.mbsportal.bl.uk/taster/subjareas/techinnov/corven/132599innovationperf11summary.pdf
[18] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from
http://www8.hp.com/us/en/campaigns/services/faq.html
[19] Tennant Snyder, N. & Duarte, D.L. (2003). *Strategic innovation: Embedding innovation as a core competency in your organization*. Retrieved April 27, 2015, from

culture, they must be emulated by all employees and across units and work groups. It is not easy, as the following quote highlights:

> "During our first ten years of striving to embed innovation as a core competency, a major acquisition followed by the recession posed new challenges. Emerging competitors in recent years require us to behave differently. Our 13-year quest for an embedded innovation approach has answered these challenges with creative approaches that have allowed us to stay focused, relevant and competitive. One would think that after the big-bang approach to embed innovation in the early 2000s we would be in auto-pilot by now, but each phase has required the same level of attention from the innovation architects (those creating blueprints and building innovation capability) to take innovation to new heights."

<div align="center">J.D. Rapp, VP, Business Process Management, Whirlpool Corporation[20]</div>

To ensure your innovation process is an integral part of your organization, it must be woven into the fabric of your corporate culture. The following provides tools to achieve such embedment.

4.5.1 Integrate Innovation into Your Company's Mission, Vision, Values, and Culture

The embedment of innovation into company culture also requires the integration of innovative spirit in the strategic planning process, particularly into the company's vision, mission, and values statement. Click the links below to access examples of company statements integrating innovative principles.

- ✓ **Vision:** Click here to learn more about vision development.
- ✓ **Mission**: Click here to learn more about mission examples.
- ✓ **Values**: Click here to learn more about values examples.
- ✓ **Culture**: Click here to learn more about culture development.

Other helpful hints to embed the innovation process include:

- ✓ On boarding is a process that includes setting expectations, providing appropriate tools, and making sure the innovation program is authentic, rather than "just the flavor of the day."
- ✓ Building your innovation brand through corporate communications, website, and social media activity provides multiple points of reinforcement.

4.5.2 Pose a Question or Innovation Challenge for All Employees to Start the Conversation

To begin the embedment process, many companies have generated an idea or posed a question for all employees to consider. Many companies have had solid success using the Blue Ocean Strategy framework[21] for this process.

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https://www.safaribooksonline.com/library/view/Strategic+Innovation:+Embedding+Innovation+as+a+Core+Competency+in+Your+Organization/9780787964054/ch002-sec001.html#fig2.1
[20] Rapp, J.D. (2013, January 23). Inside Whirlpool's innovation machine. *Management Innovation eXchange.* Retrieved May 5, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

4.5.3 Empower Mid-Level Catalysts and Provide them with Tools for Success

To ensure your innovation program is understood and actualized at every level within your organization, we propose you empower supervisors to become mid-level catalysts of the innovation process. Each supervisor is required to become a qualified Ambassador and foster the adoption of innovation by making innovation tools available to their team. This could include:

- ✓ Offering a description and definition of innovation.
- ✓ Providing a reading list with questions at the end that are evaluated and scored.
- ✓ Making the team aware of brain training tools.
- ✓ Training that involves:
  - Clarifying company goals.
  - Helping employees understand the purpose behind their job.
  - Identifying how employees' roles are connected to company success.

4.6 Step Six: Successfully Sustaining Innovation Using Six Proven Keys

Sustaining innovation within your organization's culture is critical to long-term success. The 6X6 framework has been designed to create feedback loops throughout the process to help ensure employees at all levels of the organization engage sustainably with the innovation system. The six keys outlined below are the foundation of the 6X6 framework's success.

- ✓ Key 1: Establish the right conceptual building blocks
- ✓ Key 2: Facilitate the effort with innovation catalysts
- ✓ Key 3: Provide appropriate training and tools
- ✓ Key 4: Involve others in identifying and developing innovations
- ✓ Key 5: Engage employees' hearts and minds
- ✓ Key 6: Celebrate every step and keep it compelling

4.6.1 Key 1: Establishing the Conceptual Building Blocks for Innovation

> "It's important not to overstate the benefits of ideas. Quite frankly, I know it's kind of a romantic notion that you're just going to have this one brilliant idea and then everything is going to be great. But the fact is that coming up with an idea is the least important part of creating something great. It has to be the right idea and have good taste, but the execution and delivery are what's key." [1]
>
> Sergey Brin, Founder of Google

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[21] Kim, W., & Mauborgne, R. (2015). Blue ocean strategy: How to create uncontested market space and make the competition irrelevant (Expanded ed.). Boston, Massachusetts: Harvard Business Review Press.

An innovation system refers to the essential building blocks that allow a company to create a reliable, strategically focused innovative function that will ensure that good ideas are encouraged, identified, shared, reviewed, prioritized, resourced, developed, rewarded, and celebrated. To achieve success, company and individual attention must remain on the innovation project after the initial excitement surrounding a new initiative naturally wanes.

Systematic deployment of the key components of the innovation system is crucial, the achievement of a long-term, sustainable innovation process that inspires across all levels and positions of the organization. The process must also be well resourced and championed by company leadership.

> "Executive commitment helped 3M quadruple the innovation output from 2005 to 2012."[1]
> George Buckley, former CEO of 3M, on leadership buy-in

Proper messaging delivered through the right channels will further enhance the influence of the innovation system's impact across the organization.

4.6.2 Key 2: Designating a Senior-Level Innovation Champion and Allocating Resources

In an embedded innovation system, every employee of the company is expected to be involved. However, an effective innovation system also requires attention and direction from senior management. This should be a strategic officer or top executive who wakes up every morning and goes to sleep every night, thinking about innovation.

Other critical success factors include:

- ✓ Supervisorial ability to help employees understand their job roles and how they connect to the company.
- ✓ Time and commitment from executive leadership.
- ✓ Resources deployed to the process.
- ✓ Communication surrounding the innovation process that is appropriately channeled so the right audience is hearing the right message.
- ✓ Appropriate infrastructure in place to ensure a sustainable process.

4.6.3 Key 3: Integrating Innovation into Training and Professional Development

To sustain the effort, each employee needs up front and ongoing training. Thus, it is helpful to develop a set of tools to support their professional development. These may include:

- ✓ Creating an innovation and professional development reading list (contemporary articles and research).
- ✓ Developing an innovation curriculum 101, 201, etc. (structured continuing education).

- ✓ Using innovation as a platform for educating and empowering each employee (internal communications).
- ✓ Providing brain exercise tools such as Lumosity, CogniFit Brain Fitness, Personal Zen, Brain Trainer Special, or elevate app, to employees.

4.6.4 Key 4: Involving Others

Consider involving others in the identification and development of innovation ideas. These may include:

- ✓ Cross functional teams inside the organization
- ✓ Suppliers
- ✓ Clients
- ✓ Partners
- ✓ Friends and family

For example, IBM is known for engaging others in its innovation process through its Innovation Jams. These Jams are a first step to the ideation process, bringing together employees, families, clients, and business partners in a number of online-managed forums over a short period of time. In 2006, 140,000 people posted 37,000 ideas, suggestions, and comments within a 76-hour period.

4.6.5 Key 5: Engaging Employees through their Hearts and Minds

Research has shown that building innovation-minded cultures has benefits far beyond enhancing a company's market share. Individual employees report enhanced connectivity to their organization, appreciation for the autonomy provided to work on innovative solutions, and feelings of personal empowerment that emerge from succeeding in such efforts. Employees also express positive feelings associated with working for a company that is an industry leader, has a proactive learning culture, provides opportunities for interesting and creative work, and makes individual employees feel valued.

> "Organizations that successfully promote ideas have found that the performance of their idea systems is directly related to important aspects of their cultures – such as trust, respect, morale, involvement and teamwork. They discovered that when employees see that their thinking is valued, attitudes change, and the corporate culture improves. This has a profound effect on performance and the quality of the lives of everyone in the organization." [1]
>
> Alan Robinson and Dean Schroeder, authors of The Idea-Driven Organization

The following suggestions help to formally incentivize individual participation in the innovation system. These can help to ensure that individual employee interest is sustained after the initial deployment and

that connectivity is maintained between the organizational mission and individual roles required to achieve that mission.

Connect Innovation to Tangible Rewards Including Incentive Pay, Periodic Rewards, Prizes or Other Recognition

- ✓ Give qualified employees five hours a month to develop their innovative idea within the curriculum established.
- ✓ In an effort to instill a culture of experimentation, any initiatives towards innovation, not just successful outcomes, should be recognized.

5.6.6 Key Six: Celebrating Every Step and Keeping the Process Compelling

Being part of an innovative work culture can greatly enhance an employee's appreciation for their job. Specifically, employees are proud to be working for an industry leader with a reputation as an innovative workplace. Employees report enjoying working on innovative product teams, providing them an opportunity to work with new colleagues and to step out of their normal work routine. They also express appreciation for employing creativity and problem solving skills they may not typically employ in their normal role. Several ways to enhance the organizational culture and further employee connection to the company's innovation efforts are is outlined below.

Annual Awards Ceremony, an "Innovation Day" Celebration

- ✓ Recognize those who innovate.
- ✓ Demo results of innovation, as well as the positive influence of the journey to get there – the pursuit of innovation.
- ✓ Have employees tell the story of how they have grown to inspire others, to detail how participation in the innovation mutual fund has made them a better person and employee.
- ✓ Showcase stories; for example, in a TED talk format.
- ✓ Disseminate the company's innovative practices and growing culture via social media tactics such as Twitter, Facebook, LinkedIn, story telling tools, and crowd sourcing tools such as IDEO and SAP Jam to generate new ideas.

5. Conclusion

Peter Drucker describes innovation as the effort to create purposeful, focused change in an enterprise's economic or social potential.[22] Underlying this vision are a range of complex issues that can impede the full fruition of the building of a strong, sustainable culture focused on continuous innovation at all levels of the organization. As Stephen Shapiro of InnoCentive highlights:

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[22] Drucker, P. (1985). Innovation and entrepreneurship: Practice and principles. New York: Harper & Row.

"Tools are great. But giving people tools, without first changing their mindset is useless... Do not train your employees on creativity techniques or bring in innovation software until you have addressed your underlying cultural issues (the mindset)."[23]

The 6X6 Playbook has been designed to provide both the overarching vision, as well as the resources to ensure that vision is met, sustained, and expanded. Its easy-to-follow format, web-based learning modules, and active support to facilitate the process at all stages have been designed to inspire individual employees and work teams to continually generate innovative products and processes, as well as build a holistic company culture where innovation is authentically embedded in all levels of the organizational experience.

It is our pleasure to submit this document for your review.

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[23] Innovarsity. Culture of innovation: Innovation quotes. Retrieved May 5, 2015, from http://www.innovarsity.com/coach/quotes_innovation_culture.html
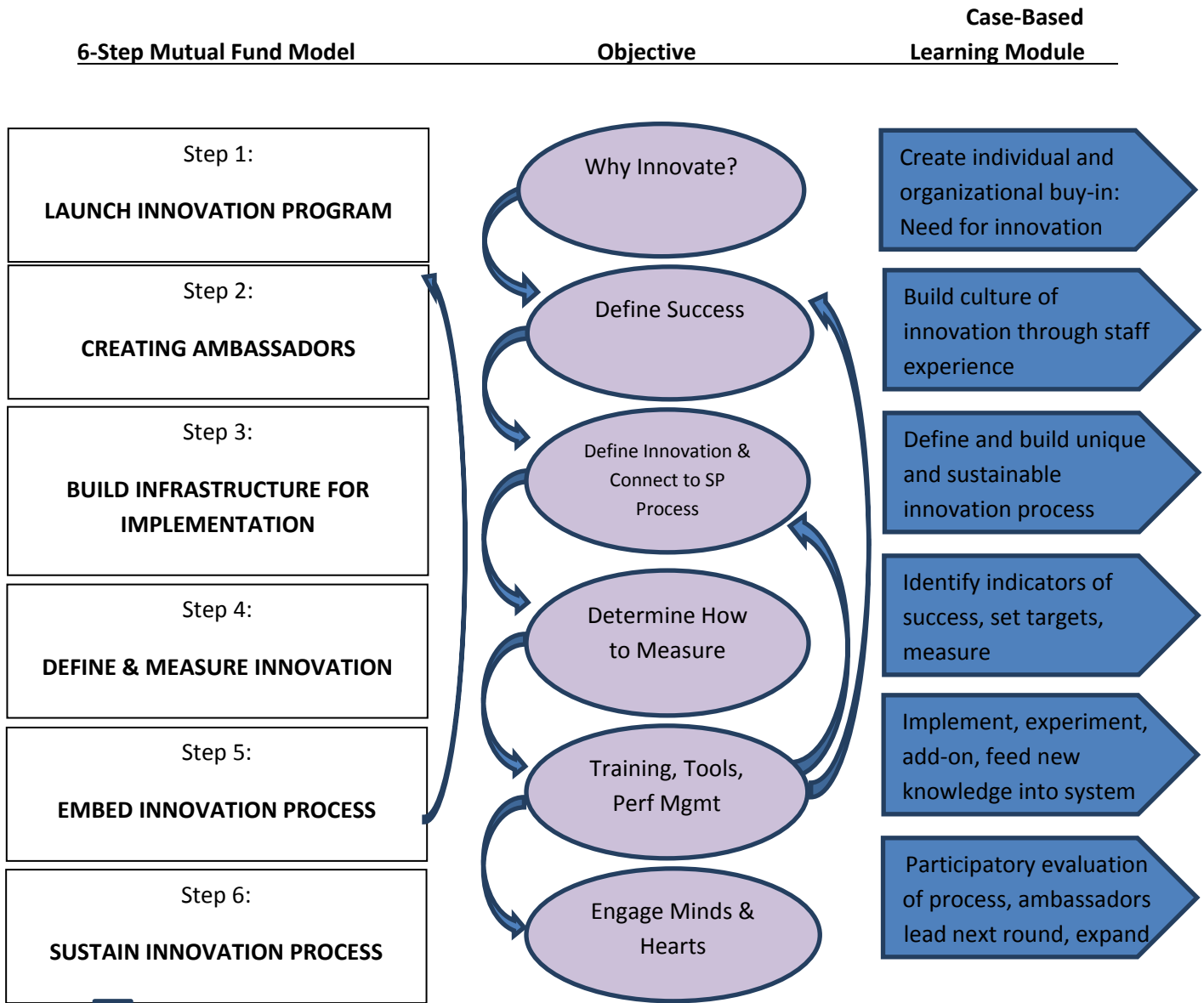
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6-Step Mutual Fund Model	**Objective**	**Case-Based Learning Module**

Step 1:
LAUNCH INNOVATION PROGRAM

Why Innovate?

Create individual and organizational buy-in: Need for innovation

Step 2:
CREATING AMBASSADORS

Define Success

Build culture of innovation through staff experience

Step 3:
BUILD INFRASTRUCTURE FOR IMPLEMENTATION

Define Innovation & Connect to SP Process

Define and build unique and sustainable innovation process

Step 4:
DEFINE & MEASURE INNOVATION

Determine How to Measure

Identify indicators of success, set targets, measure

Step 5:
EMBED INNOVATION PROCESS

Training, Tools, Perf Mgmt

Implement, experiment, add-on, feed new knowledge into system

Step 6:
SUSTAIN INNOVATION PROCESS

Engage Minds & Hearts

Participatory evaluation of process, ambassadors lead next round, expand

6 KEYS TO SUSTAINABLE LONG-TERM INNOVATION

Key 1: **Right conceptual building blocks in place**
Key 2: **Innovation catalyst facilitating the effort**
Key 3: **Training and tools provided**
Key 4: **Involve others in ID and development of innovations**
Key 5: **Engage employee minds and hearts**
Key 6: **Celebrate every step and keep it compelling**

APPENDIX B: SEVEN CASES TO INSPIRE INNOVATION

The following six case snapshots introduce the reader to six innovative corporate cultures, where innovation has become an embedded construct, driving individual, group, and organizational activities. Through exposure to these cultures, using the footnoted links for further investigation, it is envisioned that innovation ambassadors could explore these six corporate cultures to better understand how innovation has become a core organizational value and predominant component of corporate strategy, at all levels of the organization.

This piece offers an introduction of each company, summarizing their core products and achievements, and provides examples of: the innovation process, how companies have embedded innovation in their organization, how they frame innovation to inspire application, as well as criteria used to assess innovation.

SIX COMPANIES TO INSPIRE

3M
3M defines itself as a "global innovation company that never stops inventing." With sales of more than $31.8 billion in 2014, the corporation is a leader in numerous markets, including health care, highway safety, office products, abrasives, and adhesives. 3M produces thousands of products, from Post-it Notes to cleaning supplies, and has more than 43,000 patents issued and pending. The company maintains 46 technology platforms and operates more than 63 full-scale businesses in dozens of industries in more than 70 countries. More than 8,500 researchers work in 85 labs around the world. In 1995, the US Government presented 3M with the country's highest award for innovation, the National Medal of Technology.[24]

Apple Inc.
From the iPhone to the iPad to the recently launched Apple Watch, Apple Inc. is an organization known for history-changing innovation. Since Steven Jobs, Steve Wozniak, and Ronald Gerald Wayne founded the organization in 1976, working out of Jobs' parents' garage, the California-based company has established itself as a designer, manufacturer, and marketer of personal computers, mobile communication and media devices, and portable digital music players; as well as a vendor of software, services, networking solutions, and third-party digital content.[25] Apple is known for creating new markets with revolutionary products, developed mostly under the leadership of CEO and Chairman Steve Jobs, whom CNBC named as the number one innovative and transformative leader over the past

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[24] 3M. Company Information. Retrieved April 18, 2015, from http://solutions.3m.com/wps/portal/3M/en_US/3M-Company/Information/
[25] Apple Inc. *Reuters*. Retrieved April 15, 2015, from http://www.reuters.com/finance/stocks/companyProfile?symbol=AAPL.O

25 years.[26] In fact, during Jobs' absence from 1985 to 1997, the company nearly went bankrupt.[2] Since his return to the company and his death in 2011, however, Apple has continued to innovate, up to the recent launch of the Apple Watch. In 2014, the company maintained 92,600 employees and reported net annual revenues of $18.2 billion.[1]

Bell Labs
Formerly AT&T Bell Labs, Bell Laboratories is the research arm of Alcatel-Lucent with headquarters in Murray Hill, New Jersey. The organization has existed since 1925, when AT&T and Western Electric, the manufacturer for Bell Systems, consolidated their engineering departments, bringing together 4,000 engineers and scientists. When AT&T spun off most of Bell Laboratories and its manufacturing business into Lucent technologies in 1996, a small portion of Bell Labs developers went to the newly formed AT&T Laboratories. Most moved to business units of Lucent, however, and Bell Labs was left to focus solely on research. In 2007, with the merger of Alcatel and Lucent, Bell Labs was combined with Alcatel's Research and Innovations divisions under the umbrella of Alcatel-Lucent.[27] Today, Bell Labs is a leading research institution in information technology and communications; known as "The Idea Factory" or "The Crown Jewel," it has eight Nobel Prizes to prove it. Its researchers are highly published in scientific and technical, peer-reviewed journals, maintain a number of senior appointments with professional societies, and are active in more than 150 industry standards associations and working groups.[28]

Hewlett-Packard (HP)
Hewlett-Packard, also known as 'HP,' is a provider of technologies, software, and product solutions and services. Founded in 1939, with headquarters in Palo Alto, California, the company maintains more than 300,000 employees and annual sales of more than $122 billion. While HP is best known for its personal computers and printers, business segments include Personal Systems, Printing, Enterprise Group, Enterprise Services, Software, HP Financial Services, and Corporate Investments. Customers include small-and-medium-sized businesses, as well as government, health, and education providers.[29]

IBM
IBM is a multinational technology and innovation company, with headquarters in Armonk, New York. The company offers technology and consulting services, middleware for collaboration, predictive analytics, software development and systems management, and advanced servers and supercomputers. IBM invests more than $6 billion a year in research and development. Employee-wise, it is the largest technology firm in the world, with more than 400,000 staff in 170 countries.[30] From 1993-2012, IBM inventors received nearly 67,000 U.S. patents. In 2012 alone, they received a record 6,478 patents, exceeding the combined totals of Accenture, Amazon, Apple, EMC, HP, Intel, Oracle/SUN and

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[26]Gallo, C. (2014, May 22). The seven innovation secrets of Steve Jobs. *Forbes.* Retrieved April 15, 2015, from http://www.forbes.com/sites/carminegallo/2014/05/02/the-7-innovation-secrets-of-steve-jobs/

[27] Bell Labs. History of Bell Labs. Retrieved April 18, 2015, from https://www.bell-labs.com/about/history-bell-labs/

[28] Bell Labs. Innovation at Work. Retrieved April 18, 2015, from https://www.bell-labs.com/our-research/industrial-research/

[29] Forbes. (2014, May). Hewlett-Packard. Retrieved April 15, 2015, from http://www.forbes.com/companies/hewlett-packard/

[30] IBM. *Linkedin.* Retrieved April 28, 2015, from https://www.linkedin.com/company/ibm

Symantec.[31] IBM has received 9 US National Medals of Technology, 5 US National Medals of Science, and 6 Turing Awards. The company also has 10 Inductees in the US Inventors Hall of Fame and is home to 5 Nobel Laureates. Its inventions include the PC, the SABRE travel reservation system, the UPC code, and the Jeopardy computing system.[32]

Whirlpool Corporation

Whirlpool Corporation is a manufacturer and marketer of household appliances, with annual sales of approximately $19 billion. The company maintains 69,000 employees with headquarters in Benton Harbor, Michigan, and operates in more than 135 countries and 59 manufacturing and research centers around the world. [33] Whirlpool designs, engineers, markets, and sells solutions to help consumers improve productivity and efficiency in the home.[34] Marketed brands include Whirlpool, Maytag, KitchenAid, Jenn-Air, Amana, Brastemp, Consul, and Bauknecht.[35]

WHAT DO LEADING INNOVATION PROCESSES LOOK LIKE?

3M

3M offers its researchers incentives to develop their ideas using a model that is similar to venture capital. Inventors can request "seed capital" from their managers to pursue a project, and if the request is denied they are encouraged to ask for funding from other business units. If the venture is funded, the inventor can recruit his or her own team from a network of employees. These recruits receive access to the leader's track record before agreeing to join. If the product fails, all participants are guaranteed their original jobs. As well, the company funds new ideas through the Genesis Grant, which supported the development of the well-known Post-it note.[36]

AT&T

AT&T employees participate directly in corporate innovation through a crowd-sourcing platform known as The Innovation Pipeline, or TIP. Currently, more than 130,000 employees are active members. Since the program's establishment in 2009, over 28,000 ideas have been submitted and the company has

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[31]IBM Research. (2012). 20 years of research and patents. Retrieved April 28, 2015, from http://www.research.ibm.com/articles/patents.shtml

[32] IBM. *Linkedin.* Retrieved April 28, 2015, from https://www.linkedin.com/company/ibm

[33] Whirlpool Corporation. (2014). Fact Sheet. Retrieved April 15, 2015, from http://files.shareholder.com/downloads/ABEA-5DXEK8/46639948x0x419795/7F83D6B1-89AB-4306-9A6D-92929EA854C3/FactSheet.pdf

[34]Rapp, J.D. (2013, January 23). Inside Whirlpool's innovation machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

[35] Whirlpool Corporation. (2014). Fact Sheet. Retrieved April 15, 2015, from http://files.shareholder.com/downloads/ABEA-5DXEK8/46639948x0x419795/7F83D6B1-89AB-4306-9A6D-92929EA854C3/FactSheet.pdf

[36] 3M. (2012). A Culture of Innovation. Retrieved April 18, 2015, from http://solutions.3m.com/3MContentRetrievalAPI/BlobServlet?lmd=1349327166000&locale=en_WW&assetType=MMM_Image&assetId=1319209959040&blobAttribute=ImageFile

allocated more than $44 million to fund pipeline ideas. In total, the company has commercialized 75 TIP ideas.

The first phase of the pipeline is known as Social Innovation. Users have 24/7 online access to submit, vote, and collaborate on ideas, and each idea experiences an average "Tip Season" of three months. A successful idea will then move on to the Prototype phase where founders build proposals and develop business cases to pitch to management. AT&T executives act as venture capitalists with company money to fund ideas of their choice. Ideas that receive funding then move on to the Production phase, during which employees known as TIP Champions help founders move their product through the appropriate business units for launch. Finally, a successful idea may reach Commercialization, where it is implemented by an AT&T division, spun off into an external company, or sold to a third party.[37]

Hewlett-Packard (HP)
HP provides services through HP Innovation Centers in Geneva and Dubai, as well as facilitation centers around the world where it works directly with customers to address their business needs. Here, the company walks clients through a structured process, defining a transition path to business success. The process is described as "pragmatic," establishing a timeline in line with customer business realities and objectives. During this interaction, HP often makes use of "rapid concept prototypes" to enable a scenario-driven assessment of client experiences with different technologies. The scenarios are established to determine which technology solutions will have the maximum impact and how they should be used. HP also aims to create scenarios similar to end-user environments, such as the home or office, to visualize how technologies will be implemented in practice.[38]

IBM
At IBM, innovation takes place in four phases: (1) ideation; (2) mobilize interest and collaborate; (3) incubate, prototype, and validate; and (4) implement and take to market. This occurs within an ecosystem consisting of at least six major programs:
- **ThinkPlace** is a collaborative ideation program, providing a portal for employees to post ideas and receive feedback. Innovation Catalysts from within the organization help ensure valuable ideas progress through the company and receive appropriate awards.
- **Innovation Jams** are a first step to the ideation process, bringing together employees, families, clients, and business partners in a number of online managed forums over a short period of time. In 2006, 140,000 people posted 37,000 ideas, suggestions, and comments within a 76-hour period.
- **Webahead** is an infrastructure-hosting provider for innovative technology deployments. As an advanced technology group, it supports accelerated prototyping of emerging technologies.
- **Biztech** is a program focused on IBM employees who have been with the organization less than five years, in part to help increase retention rates. Project sponsors initiate a project idea aimed

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[37] AT&T. (2014). The Innovation Pipeline. Retrieved April 16, 2015, from
http://www.att.com/Common/about_us/pdf/innovation_pipeline_092013.pdf
[38] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from
http://www8.hp.com/us/en/campaigns/services/innovation-centers.html

at cost savings, project improvements, or the launch of new technology. A virtual team supported by technical leaders work to deliver results in a nine to twelve-month time frame.

- **Extreme Blue™** is an internship program for software development and MBA students. Teams of students develop a technology and business plan for a new product or service in response to a market challenge. This program has seen a number of successes, including 270 patent disclosures, six contributions to the open source community, multiple solutions for clients, and new IBM products.
- **Technology Adaption Program** is a community-driven innovation management program conducted through the IBM intranet. Innovators and early adopters from throughout the company participate in the portal by offering new technologies for other employees to access, use, and provide feedback on.[39]

Whirlpool

Whirlpool's innovation process can be described as both bottom-up and top-down. On a micro level, the organization encourages new ideas from "anyone, anywhere," tracking and developing ideas with online forums and conducting ideation sessions. Ideas then follow a structured process that involves business case formation using a migration path, competition for development applying rigorous criteria, testing, and experimentation of the ideas using tollgates and market research, and finally large-scale commercialization. For each phase, the company expects a survival rate for ideas of 10 to 1 from bottom-up. Out of ten ideas, for example, one idea will likely move on to business case formation, and out of ten development competitions, one development will make it to the market. As well, a top-down approach aggregates data on innovation activity throughout the organization. Using a set of tools and metrics, company leadership is able to make macro decisions and set strategic goals.[40]

HOW HAVE THESE COMPANIES EMBEDDED INNOVATION INTO THEIR ORGANIZATIONS?

3M

3M has promoted innovation by developing a system that supports its 8,500 researchers and encourages their collaboration. The company spends six percent of its sales on research and development, an unusually high number for a manufacturing company. As well, the organization has formalized a culture and community of collaboration, with the goal of promoting informal relationships where researchers can call each other for advice. A number of structures exist to encourage networking amongst researchers. For example, the company has held Annual Technical Forums since 1951, attended by thousands of research and development personnel who present papers and discus projects they are working on. Individual labs also host regular conferences and webcasts and elect

[39] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

[40] Rapp, J.D. (2013, January 23). Inside Whirlpool's Innovation Machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

representatives to policy bodies. Within the organization, divisions and internal businesses share more than 300 joint programs.[41]

3M also rewards its researchers heavily for innovation. Each year it gives awards to hundreds of employees for scientific achievement, and offers holidays to the top twenty. The company also provides a dual-career ladder; researchers can move up in the company without the expectation they will become managers – one that is common in the manufacturing sector. Researchers may focus solely on research and receive the same pay and benefits as management. They are also offered nearly a day a week to focus on projects outside their main responsibilities – a policy known as the "Fifteen Percent Rule."[42]

AT&T
AT&T has a long history of institutionalizing innovation processes. AT&T Labs, which conducts research on advanced technologies in collaboration with experts and academia, is an offshoot of Bell Labs founded in 1925.[43] Here, development teams design the global network and develop new processes, systems, and service platforms for the market.[44] The company also maintains the AT&T Foundry, a collaborative community supported by a network of strategic technology companies,[45] such as Ericsson, Alcatel-Lucent, Amdocs, Cisco, Intel, and Microsoft. Foundry locations in Texas, Israel, Georgia, California, as well as a Virtual Innovation Center, are considered ecosystems for venture capitalists and external developers. Small companies can meet with AT&T developers, increasing the company's access to talent. The Foundries aim for accelerated progress, claiming "three times faster innovation," as projects move through five phases: Idea, Funding, Development, Testing, and Launch. [46] In 2009, AT&T added The Innovation Pipeline to its formula, encouraging all of its employees to submit innovative ideas online and offering successful founders venture capital to develop their projects to a commercial scale.

Bell Labs
While Bell Labs legally remains part of a larger corporation, it has for most of its history operated as an independent institution dedicated to innovation through industrial research. Its tradition dates back to Mervin Kelly, who from 1925 to 1959 moved up through the organization from researcher to Chairman of the Board. Kelly's vision was to create an "institute of creative technology," a critical mass of innovators under one roof. He designed the lab buildings to promote mingling amongst researchers and

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[41] Arndt, M. (2006, May 9). 3M's seven pillars of innovation. *Bloomberg.* Retrieved April 17, 2015, from http://www.bloomberg.com/bw/stories/2006-05-09/3ms-seven-pillars-of-innovation

[42] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all

[43] AT&T. AT&T Labs. Retrieved April 16, 2015, from http://about.att.com/innovation/labs

[44] AT&T. Fact Sheet. Retrieved April 16, 2015, from http://www.corp.att.com/attlabs/about/factsheet.html

[45] AT&T. (2014). AT&T Foundry. Retrieved April 16, 2015, from https://developer.att.com/developer/forward.jsp?passedItemId=5300164

[46] AT&T. (2013). AT&T Foundry at a Glance. Retrieved April 17, 2015, from http://www.att.com/Common/about_us/pdf/infographic_foundry_overview.pdf

encouraged them to work with their doors open.[47] Because the cafeteria provided an opportunity for researchers from different disciplines to interact, it became known as the most productive location on site.[48]

AT&T's historical status as a monopoly also contributed to Bell Labs' focus on innovation. Heavy government regulation meant that the organization was mandated to offer benefits to the nation, including innovation. The company had a high income levels available for research and development, and it could afford to attract and develop a culture of independent researchers. Scientists and engineers could work on choice projects without the pressure of profits or patents.[49]

IBM

In 2005, IBM set out to break down organizational silos and develop a bottom-up community of innovation with the launch of the Technology Adaption Program (TAP). Based on the understanding that the bulk of innovation (approximately 42%) comes from employees within a company and not specifically from research and development, TAP offers a crowdsourcing platform to accelerate technology adoption within IBM. Innovators share new technologies, receiving feedback and ideas from other IBM employees. Employees with the IBM International Technical Support Organization describe the impact of programs such as TAP on a company's innovation climate:

> *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.*

More than 350,000 IBM employees currently participate in TAP. Since its organic beginnings, TAP has shifted its focus from expanding its number of technology offerings and users to progressing and maturing pilots past early adoption. It is also marketing the TAP system to clients to use for their own innovation processes. [50]

HOW DO THESE COMPANIES FRAME INNOVATION?

3M

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[47] Gertner, J. (2012, February 5). True innovation. *The New York Times*. Retrieved April 18, 2015, from http://www.nytimes.com/2012/02/26/opinion/sunday/innovation-and-the-bell-labs-miracle.html?_r=0

[48] The Linux Information Project. (2005, May 26). Bell Labs: A brief introduction. Retrieved April 18, 2015, from http://www.linfo.org/bell_labs.html

[49] The Linux Information Project. (2005, May 26). Bell Labs: A brief introduction. Retrieved April 18, 2015, from http://www.linfo.org/bell_labs.html

[50] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

3M is a science and technology, research-based company. Company slogans include ideas such as "research is the transformation of money into knowledge - innovation is the transformation of knowledge into money," and "technology drives growth."[51] The 3M innovation model involves crossbreeding multiple technology platforms with multiple markets. "We assume that technologies and technological capabilities have no boundaries or barriers," says Frederick J. Palensky, who recently retired as 3M's Chief Technology Officer. "Any product or manufacturing technology is available to any business in any industry in any geography around the world."[52] All intellectual property rights are owned by 3M rather than individual business units,[53] which encourages collaboration over competition. Employees are encouraged to move from business to business, country to country, and industry to industry. The company has also implemented a "15 Percent Rule," encouraging technical employees to spend a portion of their time on programs, interactions, learning, and teaching in areas outside of their main responsibilities, based on a belief in cross-sector creativity.[54]

Apple

At Apple, Steve Jobs established a culture of innovation based on passion, vision, and intuition. To Jobs, innovation was an ideal aimed at enriching the lives of customers, extending past selling products to selling a dream. "We believe that innovation is about leaving the world better than we found it," says Lisa Jackson, Apple's Vice President of Environmental Initiatives.[55] Jobs stated that his vision was to "put a dent in the Universe,"[56] and he expected his employees to share this vision. When he returned to lead Apple in 1997, he asked them directly, "What are you doing to make the Macintosh or Apple great?" Those without a good answer were fired immediately.[57] He also launched the "Think Different" advertising campaign that celebrated famous innovators. Jobs said the campaign targeted Apple employees as much as customers. "Our heroes are innovators," he told them. "We stand for innovation. If you want to work at Apple, we expect you to innovate." [58]

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[51] 3M. (2012). A Culture of Innovation. Retrieved April 18, 2015, from http://solutions.3m.com/3MContentRetrievalAPI/BlobServlet?lmd=1349327166000&locale=en_WW&assetType=MMM_Image&assetId=1319209959040&blobAttribute=ImageFile

[52] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all

[53] Govindarajan, V. and Srinivas, S. (2013, August 6). The innovation mindset in action: 3M. *Harvard Business Review*. Retrieved April 17, 2015, from https://hbr.org/2013/08/the-innovation-mindset-in-acti-3/

[54] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all

[3] Apple Inc. (2015, February 23). Apple to invest €1.7 Billion in new European Data Centres. Retrieved April 15, 2015, from https://www.apple.com/pr/library/2015/02/23Apple-to-Invest-1-7-Billion-in-New-European-Data-Centres.html

[56] Sutter, J.D. (2011, October 6). 5 memorable quotes from Steve Jobs. *CNN.* Retrieved April 21, 2015, from www.cnn.com/2011/10/05/tech/innovation/steve-jobs-quotes/

[57] Scoble, R. How can Apple employees be so innovative? Retrieved April 15, from http://www.quora.com/How-can-Apple-employees-be-so-innovative

[58] Dyer, J. and Gregersen, H. The secret of innovative companies: It isn't R&D. *Innovation Management*. Retrieved April 15, 2015, from http://www.innovationmanagement.se/2013/04/18/the-secret-of-innovative-companies-it-isnt-rd/

For Jobs, innovation was as much an art as a science. "It's the intersection of technology and liberal arts that makes our hearts sing," he once said. He saw a broad range of experiences as inspiring creativity. A calligraphy class he once took, for example, helped him to develop the Macintosh typeface and fonts. Apple retail stores were designed to resemble a Ritz-Carlton hotel. He responded to critics in a way similar to an inspired artist. "Don't let the noise of others' opinions drown out your own inner voice," he said. "And most important, have the courage to follow your heart and intuition. They somehow already know what you truly want to become."[59]

AT&T
AT&T has included innovation as part of its corporate mission:

"Today, our mission is to connect people with their world, everywhere they live and work, and do it better than anyone else. We're fulfilling this vision by creating new solutions for consumers and businesses and by driving innovation in the communications and entertainment industry."[60]

Innovation also takes a place as one of AT&T's core values: "Deliver the future first." This is broken down into further innovation-related sub-values: "Innovate continuously and enable others to do the same;" "Take intelligent risks and learn from what works;" "Pursue what hasn't been done;" and "Power innovation to help solve societal challenges." [61]

Hewlett-Packard (HP)
HP considers innovation to be a customer-focused, technology-based process. Its definition of innovation is "the business of creating and developing good ideas and turning them into a successful business reality." The company refers to innovation as a "joint process" between HP and the customer. The overarching strategy is to ensure that customers maximize returns on their information technology investments. This requires helping customers understand the solutions and services HP offers.[62]

IBM
IBM has developed innovation as a core of its business strategy. Of the four pillars centered around a "focus on enterprises that value innovation," the first pillar is to "Lead the innovation conversation." Sub-pillars of the innovation strategy include, "Lead in high impact business innovations; Collaborate with clients, partners, and academia; and Employ advanced innovation tools, processes and policies." In addition, one of the company's three core values is achieving "Innovation that matters – for our company and for the world." IBM employees:

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[59] Gallo, C. (2014, May 22). The seven innovation secrets of Steve Jobs. *Forbes.* Retrieved April 15, 2015, from http://www.forbes.com/sites/carminegallo/2014/05/02/the-7-innovation-secrets-of-steve-jobs/

[60] Farfan, B. Company mission statements. *About Money.* Retrieved April 22, 2015, from http://retailindustry.about.com/od/retailbestpractices/ig/Company-Mission-Statements/AT-T-Mission-Statement-and-Values.htm

[61] AT&T. AT&T Company. Retrieved April 16, 2015, from http://www.att.com/gen/investor-relations?pid=5711

[62] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from http://www8.hp.com/us/en/campaigns/services/faq.html

- Are forward thinkers; we believe that the application of intelligence, reason and science can improve business, society and the human condition.
- Love grand challenges, as well as everyday improvements. Whatever the problem or the context, every IBMer seeks ways to tackle it creatively — to be an innovator.
- Strive to be first — in technology, in business, in responsible policy.
- Take informed risks and champion new (sometimes unpopular) ideas.[63]

HOW DO ORGANIZATIONS MEASURE INNOVATION?

3M

3M measures its innovation according to the return on its investments in research and development. Its primary metric is the New Product Vitality Index (NPVI), or new products introduced in the past five years divided by total sales.[64] The company also operates according to the "Thirty Percent Rule," meaning thirty percent of each division's revenues must come from products introduced in the last four years. The company tracks this percentage rigorously and uses it to determine employee bonuses.[4] Other measurements the company uses include the length of time it takes to bring a product to market, technologies with the most growth opportunities, and number of patents.[65]

Bell Labs

At Bell Labs, innovation takes place for innovation's sake, with an organizational mission - "inventing the future."[66] Researchers are not required to raise funds and receive the autonomy and freedom to create. In fact, Bell Labs is often referred to as the "ivory tower" of industrial research;[4] similar to working at a leading university, without the task of dealing with students.[67] Similar to an academic environment, Bell Labs promotes a model of harmony and tension: cooperation and conflict between different disciplines, between researchers and developers, and between individuals and groups.[68]

Hewlett-Packard (HP)

HP outlines three requirements for its innovation process. First, the transition must be based upon client business requirements. At HP Innovation Centers this is achieved by working directly with the client to outline technology needs. Secondly, the technology adoption must be "evolutionary and not revolutionary." This helps ensure that it is easily adapted, as outlined in scenario- and environment-

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[63] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

[64] Govindarajan, V. and Srinivas, S. (2013, August 6). The innovation mindset in action: 3M. *Harvard Business Review*. Retrieved April 17, 2015, from https://hbr.org/2013/08/the-innovation-mindset-in-acti-3/

[65] Arndt, M. (2006, May 9). 3M's seven pillars of innovation. *Bloomberg.* Retrieved April 17, 2015, from http://www.bloomberg.com/bw/stories/2006-05-09/3ms-seven-pillars-of-innovation

[66] Bell Labs. About Bell Labs. Retrieved April 18, 2015, from https://www.bell-labs.com/prize/about-us

[67] The Linux Information Project. (2005, May 26). Bell Labs: A brief introduction. Retrieved April 18, 2015, from http://www.linfo.org/bell_labs.html

[68] Gertner, J. (2012, February 5). True innovation. *The New York Times*. Retrieved April 18, 2015, from http://www.nytimes.com/2012/02/26/opinion/sunday/innovation-and-the-bell-labs-miracle.html?_r=0

driven assessments. Finally, the transition must achieve a "timely business result," a benchmark in line with HP's goal of helping customers maximize their returns on technology investments.[69]

IBM

IBM assesses TAP innovation primarily through feedback from program users. Active data collection includes short and long survey versions for evaluation, feedback, and defect tracking. Open source software is also used to track defects. Passive data collection includes tracking user activity and logging. Key evaluation criteria are:

- Usage by target population: the number of times a new product is downloaded, as well as weekly usage rates
- Total energy level association with the technology: Also known as "buzz" or "hype." This is the amount of interest, discussion, and participation the offer receives, measured by page traffic, forum collaboration levels, associated blogging activity, related podcasts and intranet articles, and the frequency of tagging in the IBM Internal Enterprise Tagging Service
- End user satisfaction: indicated in written survey feedback.
- Potential innovation value: from the perspective of internal and external opportunities[70]

Whirlpool

Whirlpool evaluates innovation using a clear set of criteria. The first requirement is that the innovation is a "unique and compelling solution valued by our customers and aligned to our brands." The product or service should be original to the market or to Whirlpool and must impact the end user. The company would not count its own cost reductions, for example, as innovation. Secondly, the innovation must "create sustainable, competitive advantage." Competitors should be unable to copy the product or service for at least two years. Whirlpool must have a unique advantage, such as a patent, distribution channels, or brand strength. Finally, the innovation must "create differentiated shareholder value." This requires a feasible business case with the expectation of meaningful returns. Whirlpool also expects that its innovative products and services will come at a higher price.[71]

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[69] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from
http://www8.hp.com/us/en/campaigns/services/faq.html
[70] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf
[71] Rapp, J.D. (2013, January 23). Inside Whirlpool's Innovation Machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

APPENDIX C: KEY DEFINITIONS

INNOVATION

The embodiment, combination, or synthesis of knowledge in original, relevant, and valued new products, processes, or services.[72] Peter Drucker describes it as the effort to create purposeful, focused change in an enterprise's economic or social potential. From a business perspective, it is a means by which an organization either creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth. [73]

EMBEDMENT

The institutionalization of a core competency such as innovation. It is a process to ensure that a new way of thinking and new skill sets or measures and business strategies become part of organizational culture in a lasting way.[74] For such efforts to be 'embedded' within an organizational culture, they must be emulated by all employees and across units and work groups.

STRATEGY

Pattern of purposes, policies, programs, projects, actions, decisions, or resource allocations that defines what an organization is, what it does, and why it does it. It is an extension of an organizational mission, forming a purpose-driven bridge between the organization and its environment. Strategies typically are developed to deal with strategic issues; that is they outline the organization's response to the fundamental challenges it faces.[75] Weiner defines strategy as "how a company navigates its competitive landscape to achieve its objectives."[76]

A strategy encompasses the following:
- The pattern or mix of products and services that differentiates you from competitors
- A hypothesis about what will work

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[72] Harvard Business School Press. (2003, June 18). *Harvard Business essentials: Innovator's toolkit.* Retrieved April 27, 2015, from https://hbr.org/product/types-of-innovation-several-types-on-many-fronts/7195BC-PDF-ENG

[73] Drucker, P.F. (2002, August). The discipline of innovation. *Harvard Business Review.* Retrieved April 27, 2015, from https://hbr.org/2002/08/the-discipline-of-innovation

[74] Tennant Snyder, N. & Duarte, D.L. (2003). *Strategic innovation: Embedding innovation as a core competency in your organization.* Retrieved April 27, 2015, from https://www.safaribooksonline.com/library/view/Strategic+Innovation:+Embedding+Innovation+as+a+Core+Competency+in+Your+Organization/9780787964054/ch002-sec001.html#fig2.1

[75] Bryson, J.M. (2011). *Strategic planning for public and nonprofit organizations: Guide to strengthening and sustaining organizational achievement* (4th ed.). Retrieved April 27, 2015, from http://books.google.ca/books?id=jWwpVIsx5SoC&dq=strategic+planning+definitions&lr=&source=gbs_navlinks_s

[76] Weiner, J. (2012). From vision to values: The importance of defining your core. *Linkedin.* Retrieved April 27, 2015, from https://www.linkedin.com/pulse/20121029044359-22330283-to-manage-hyper-growth-get-your-launch-trajectory-right

- A set of cause-and-effect relationships that can be explicit
- The answer to "How will you achieve your mission?"

Example of Strategy Statements:

- **Martha Stewart Living (MSLO) (see Martha Stewart Living's mission in following examples):**
  - How will MSLO achieve its mission and differentiate itself?
    - Publishing and Media / Television / Radio / Internet
    - Merchandising
    - New brands
- **IBM:** "One year ago, we described our strategy to lead a rapidly reordering information technology industry. We said that a new era was driving the reinvention of all enterprises—including our own. And we committed to accelerate that transformation."

OBJECTIVES

Measurable goals aligned with a mission and strategy.[77] Drucker defined ideal objectives as SMART: Smart, Measurable, Attainable, Realistic, and Time bound.[78]

VISION

A statement of what an organization wants to look like in the future.[79] It creates a shared sense of purpose and provides common inspiration. LinkedIn CEO Jeff Weiner describes the vision as "the dream; a team's true north."[80]

A strong vision statement contains the following:

- States future aspirations
- Focuses attention on what is important
- Provides context for evaluating both opportunities and threats

Eight Characteristics of a Good Vision Statement:

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[77] Weiner, J. (2012). From vision to values: The importance of defining your core. *Linkedin.* Retrieved April 27, 2015, from https://www.linkedin.com/pulse/20121029044359-22330283-to-manage-hyper-growth-get-your-launch-trajectory-right

[78] Management by objectives. *Communication Theory.* Retrieved April 27, 2015, from http://communicationtheory.org/management-by-objectives-drucker/

[79] Kenny, G. (2014, September 3). Your company's purpose is not its vision, vision, or values. *Harvard Business Review.* Retrieved April 27, 2015, from https://hbr.org/2014/09/your-companys-purpose-is-not-its-vision-mission-or-values

[80] Weiner, J. (2012). From vision to values: The importance of defining your core. *Linkedin.* Retrieved April 27, 2015, from https://www.linkedin.com/pulse/20121029044359-22330283-to-manage-hyper-growth-get-your-launch-trajectory-right

1. Brief
2. Verifiable
3. Bound by a Timeline
4. Current
5. Focused
6. Understandable
7. Inspiring
8. A stretch

Example of Vision Statements:

- **Ericsson:** "To be the prime driver in an all-communicating world." [81]

- **LinkedIn:** "Create economic opportunity for every member of the global workforce."

MISSION

The mission is a declaration of organizational purpose. [82] It is the overarching objective of an organization, outlining what it is and what it isn't. In short, a mission defines why an organization exists. Missions are generally measurable and achievable. They should also be uniquely identifiable with the organization. [83]

A good mission statement answers the following:

- Why does the organization exist?
- What is the scope of the organization's activities?
- Who are the customers served?
- What are the products or services offered?

A mission statement contains information pertinent to:

- Basic product/service to be offered
- Primary market/customer groups
- Unique benefits and advantages of product/services
- Technology to be used

[81] Kenny, G. (2014, September 3). Your company's purpose is not its vision, vision, or values. *Harvard Business Review.* Retrieved April 27, 2015, from https://hbr.org/2014/09/your-companys-purpose-is-not-its-vision-mission-or-values

[82] Bryson, J.M. (2011). *Strategic planning for public and nonprofit organizations: Guide to strengthening and sustaining organizational achievement* (4th ed.). Retrieved April 27, 2015, from http://books.google.ca/books?id=jWwpVIsx5SoC&dq=strategic+planning+definitions&lr=&source=gbs_navlinks_s

[83] Bryson, J.M. (2011). *Strategic planning for public and nonprofit organizations: Guide to strengthening and sustaining organizational achievement* (4th Ed.). Retrieved April 27, 2015, from http://books.google.ca/books?id=jWwpVIsx5SoC&dq=strategic+planning+definitions&lr=&source=gbs_navlinks_s

- Concern for survival through growth and profitability

A mission statement might also contain the following types of information:

- Information on the organization's values and beliefs
- Managerial philosophy
- Public image sought by the organization
- Self-concepts of business adopted by employees or shareholders

Examples of Mission Statements:

- **Joe Boxer:** "JOE BOXER is dedicated to bringing new and creative ideas to the market place, both in our product offerings as well as our marketing events…Because everyone wants to have fun every day, JB will continue to offer something for everyone with fun always in mind."

- **Pepsi Bottling Group**: "We sell soda."

- **Ben & Jerry's Ice Cream:** "To make, distribute and sell the finest quality all natural ice cream and euphoric concoctions with a continued commitment to incorporating wholesome, natural ingredients and promoting business practices that respect the Earth and the Environment."

- **Martha Stewart Living:** "Martha Stewart Living Omnimedia, Inc. (MSLO) is the leading integrated content company devoted to enriching the changing lives of today's women and their families."

ORGANIZATIONAL CULTURE

Culture is consistent, observable patterns of behavior in organizations. It is a process of "sense-making," which is defined as "a collaborative process of creating shared awareness and understanding out of different individuals' perspectives and varied interests." [84] In essence, culture is an organization's personality; who it is and who it aspires to be. [85]

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[84] Watkins, M. (2013, May 13). What is organizational culture? *Harvard Business Review.* Retrieved April 27, 2015, from https://hbr.org/2013/05/what-is-organizational-culture

[85] Weiner, J. (2012). From vision to values: The importance of defining your core. *Linkedin.* Retrieved April 27, 2015, from https://www.linkedin.com/pulse/20121029044359-22330283-to-manage-hyper-growth-get-your-launch-trajectory-right

VALUES

The principles that guide the organization's day-to-day decisions.[86] Values are the core of an organization's culture, outlining behaviors and mindsets necessary to achieve its vision. [87] A company's mission and vision must reflect the core values of the business to be successful.

Example of Corporate Value Statement

Walt Disney Values
- No cynicism
- Nurturing and promulgation of "wholesome American values"
- Creativity, dreams, and imagination
- Fanatical attention to consistency and detail
- Preservation and control of the Disney magic[88]

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[86] Weiner, J. (2012). From vision to values: The importance of defining your core. *Linkedin.* Retrieved April 27, 2015, from https://www.linkedin.com/pulse/20121029044359-22330283-to-manage-hyper-growth-get-your-launch-trajectory-right

[87] Weiner, J. (2012). From vision to values: The importance of defining your core. *Linkedin.* Retrieved April 27, 2015, from https://www.linkedin.com/pulse/20121029044359-22330283-to-manage-hyper-growth-get-your-launch-trajectory-right

[88] Kenny, G. (2014, September 3). Your company's purpose is not its vision, vision, or values. *Harvard Business Review.* Retrieved April 27, 2015, from https://hbr.org/2014/09/your-companys-purpose-is-not-its-vision-mission-or-values

APPENDIX D: CHECKLIST TO ASSESS THE DEGREE OF EMBEDMENT OF INNOVATION

(Original source: *Unleashing innovation: How Whirlpool transformed an industry)*

In seeking to embed innovation as a core competence, Whirlpool Corporation introduced a wide range of activities that "assimilate, incorporate, internalize and imbue the entire fabric or lifeblood of an organization with the mindset and skills of innovation."

The measurement system was designed to enable a comprehensive assessment of progress in embedment and to support mid-course adjustment.

1. Business result measures:
   a. Revenue from projects due directly to the innovation effort
   b. Revenue from projects shaped by the innovation
   c. Revenue from projects not using innovation tools or methods
   d. Capital expended on innovation projects versus that planned.
2. Embedment measures (journey goals and measures, mainly qualitative):
   a. Time spent on innovation projects by region
   b. Understanding of innovation at all levels in the organization
   c. Proportion of staff involved in innovation activities
   d. Staff perceptions and reactions to experiences of innovation
   e. Impact of strategic communication about innovation both internally and externally.
3. Individual measures:
   a. Numbers of staff able to describe how innovation has changed their job
   b. Job descriptions including innovation
   c. Identification and removal of barriers to innovation in any work group
   d. Records of the use of innovation tools
   e. Proportion of appraisals with innovation goals.

There were problems with these measures, particularly concerning the definition of innovation. However, standard definitions are being introduced to enable comparisons of performance across the corporation.

A questionnaire with scaled responses to items and space for comments as well as random sampling methods are used to test progress on a quarterly basis.

Measures are applied at the executive committee level, to the innovation boards, and to individuals.[89]

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[89] Tennant Snyder, N. & Duarte, D. 2008*. Unleashing innovation: How Whirlpool transformed an industry.* San Francisco, CA: Jossey Bass.

Case 1: 3M

About 3M

3M defines itself as a "global innovation company that never stops inventing." With sales of more than $31.8 billion in 2014, the corporation is a leader in numerous markets, including health care, highway safety, office products, abrasives, and adhesives. 3M produces thousands of products, from Post-it Notes to cleaning supplies, and has more than 43,000 patents issued and pending. The company maintains 46 technology platforms and operates more than 63 full-scale businesses in dozens of industries in more than 70 countries. More than 8,500 researchers work for 3M in 85 labs around the world. In 1995, the US Government presented 3M with the country's highest award for innovation, the National Medal of Technology.[90]

3M's Innovation Process

3M offers its researchers incentives to develop their ideas using a model that is similar to venture capital. Inventors can request "seed capital" from their managers to pursue a project, and if the request is denied they are encouraged to ask for funding from other business units. If the venture is funded, the inventor can recruit his or her own team from a network of employees. These recruits receive access to the leader's track record before agreeing to join. If the product fails, all participants are guaranteed their original jobs. The company also funds new ideas through the Genesis Grant, which supported the development of the well-known Post-it note.[91]

How 3M Embedded Innovation

3M has promoted innovation by developing a system that supports its 8,500 researchers and encourages their collaboration. The company spends six percent of its sales on research and development, an unusually high number for a manufacturing company. The organization has formalized a culture and community of collaboration, with the goal of promoting informal relationships where researchers can call each other for advice. A number of structures exist to encourage networking amongst researchers. Since 1951, for example, the company has held Annual Technical Forums, attended by thousands of research and development personnel who present papers and discus projects they are working on. Individual labs also host regular conferences and webcasts and elect

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[90] 3M. Company Information. Retrieved April 18, 2015, from http://solutions.3m.com/wps/portal/3M/en_US/3M-Company/Information/

[91] 3M. (2012). A Culture of Innovation. Retrieved April 18, 2015, from http://solutions.3m.com/3MContentRetrievalAPI/BlobServlet?lmd=1349327166000&locale=en_WW&assetType=MMM_Image&assetId=1319209959040&blobAttribute=ImageFile

representatives to policy bodies. Within the organization, divisions and internal businesses share more than 300 joint programs.[92]

3M also rewards its researchers heavily for innovation. Each year it gives awards to hundreds of employees for scientific achievement, and offers holidays to the top twenty. The company also provides a dual-career ladder. Researchers can move up in the company without the expectation they will become managers – one that is common in the manufacturing sector. Researchers may focus solely on research and receive the same pay and benefits as management. They are also offered nearly a day a week to focus on projects outside their main responsibilities – a policy known as the "Fifteen Percent Rule."[93]

How 3M Frames Innovation

3M is a science and technology, research-based company. Company slogans include phrases like "research is the transformation of money into knowledge - innovation is the transformation of knowledge into money," as well as "technology drives growth."[94] The 3M innovation model involves cross-breeding multiple technology platforms with multiple markets. "We assume that technologies and technological capabilities have no boundaries or barriers," says Frederick J. Palensky, who recently retired as 3M's Chief Technology Officer. "Any product or manufacturing technology is available to any business in any industry in any geography around the world."[95] All intellectual property rights are owned by 3M rather than individual business units,[96] which encourages collaboration over competition. Employees are encouraged to move from business to business, country to country, and industry to industry. The company has also implemented a "15 Percent Rule," encouraging technical employees to spend a portion of their time on programs, interactions, learning, and teaching in areas outside of their main responsibilities, based on a belief in cross-sector creativity.[97]

How 3M Measures Innovation

3M measures its innovation according to the return on its investments in research and development. Its primary metric is the New Product Vitality Index (NPVI), or new products introduced in the past five years divided by total sales.[98] The company also operates according to the "Thirty Percent Rule,"

[92] Arndt, M. (2006, May 9). 3M's seven pillars of innovation. *Bloomberg.* Retrieved April 17, 2015, from http://www.bloomberg.com/bw/stories/2006-05-09/3ms-seven-pillars-of-innovation

[93] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* .Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all

[94] 3M. (2012). A Culture of Innovation. Retrieved April 18, 2015, from http://solutions.3m.com/3MContentRetrievalAPI/BlobServlet?lmd=1349327166000&locale=en_WW&assetType=MMM_Image&assetId=1319209959040&blobAttribute=ImageFile

[95] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all

[96] Govindarajan, V. and Srinivas, S. (2013, August 6). The innovation mindset in action: 3M. *Harvard Business Review*. Retrieved April 17, 2015, from https://hbr.org/2013/08/the-innovation-mindset-in-acti-3/

[97] Jaruzelski, B., Holman, R., & Baker, E.H. (2011, May 30). 3M's open innovation. *Strategy + Business.* Retrieved April 17, 2015, from http://www.strategy-business.com/article/00078?pg=all

[98] Govindarajan, V. and Srinivas, S. (2013, August 6). The innovation mindset in action: 3M. *Harvard Business Review*. Retrieved April 17, 2015, from https://hbr.org/2013/08/the-innovation-mindset-in-acti-3/

meaning thirty percent of each division's revenues must come from products introduced in the last four years. The company tracks this percentage rigorously and uses it to determine employee bonuses.[4] Other measurements the company uses include the length of time it takes to bring a product to market, technologies with the most growth opportunities, and number of patents.[99]

Case 2: APPLE

About Apple

From the iPhone to the iPad to the recently launched Apple Watch, Apple Inc. is an organization known for history-changing innovation. Since Steven Jobs, Steve Wozniak, and Ronald Gerald Wayne founded the organization in 1976 working out of Jobs' parents' garage, the California-based company has established itself as a designer, manufacturer, and marketer of personal computers, mobile communication and media devices, and portable digital music players; as well as a vendor of software, services, networking solutions, and third-party digital content.[100] Apple is known for creating new markets with revolutionary products, developed mostly under the leadership of CEO and Chairman Steve Jobs, whom CNBC named as the number one innovative and transformative leader over the past 25 years.[101] In fact, during Jobs' absence from 1985 to 1997, the company nearly went bankrupt.[2] Since his return to the company and death in 2011, however, Apple has continued to innovate, up to the recent launch of the Apple Watch. In 2014, the company maintained 92,600 employees and reported net annual revenues of $18.2 billion.

How Apple Frames Innovation

At Apple, Steve Jobs established a culture of innovation based on passion, vision, and intuition. To Jobs, innovation was an ideal aimed at enriching the lives of customers, extending past selling products to selling a dream. "We believe that innovation is about leaving the world better than we found it," says Lisa Jackson, Apple's Vice President of Environmental Initiatives.[102] Jobs, as well, is known for saying his vision was to "put a dent in the Universe."[103] He expected his employees to share this vision. When he returned to lead Apple in 1997, he asked them directly, "What are you doing to make the Macintosh or Apple great?" Those without a good answer were fired immediately.[104] He also launched the "Think Different" advertising campaign that celebrated famous innovators. Jobs said the campaign targeted

[99] Arndt, M. (2006, May 9). 3M's seven pillars of innovation. *Bloomberg.* Retrieved April 17, 2015, from http://www.bloomberg.com/bw/stories/2006-05-09/3ms-seven-pillars-of-innovation
[100] Apple Inc. *Reuters*. Retrieved April 15, 2015, from http://www.reuters.com/finance/stocks/companyProfile?symbol=AAPL.O
[101]Gallo, C. (2014, May 22). The seven innovation secrets of Steve Jobs. *Forbes.* Retrieved April 15, 2015, from http://www.forbes.com/sites/carminegallo/2014/05/02/the-7-innovation-secrets-of-steve-jobs/
[3] Apple Inc. (2015, February 23). Apple to invest €1.7 Billion in new European Data Centres. Retrieved April 15, 2015, from https://www.apple.com/pr/library/2015/02/23Apple-to-Invest-1-7-Billion-in-New-European-Data-Centres.html
[103] Sutter, J.D. (2011, October 6). 5 memorable quotes from Steve Jobs. *CNN.* Retrieved April 21, 2015, from www.cnn.com/2011/10/05/tech/innovation/steve-jobs-quotes/
[104] Scoble, R. How can Apple employees be so innovative? Retrieved April 15, from http://www.quora.com/How-can-Apple-employees-be-so-innovative

Apple employees as much as customers. "Our heroes are innovators," he told them. "We stand for innovation. If you want to work at Apple, we expect you to innovate." [105]

For Jobs, innovation was as much an art as a science. "It's the intersection of technology and liberal arts that makes our hearts sing," he once said. He saw a broad range of experiences as inspiring creativity. A calligraphy class he once took, for example, helped him to develop the Macintosh typeface and fonts. Apple retail stores were designed to resemble a Ritz-Carlton hotel. He responded to critics in a way similar to an inspired artist. "Don't let the noise of others' opinions drown out your own inner voice," he said. "And most important, have the courage to follow your heart and intuition. They somehow already know what you truly want to become."[106]

Case 3: AT&T

About AT&T
AT&T is one of the world's largest telecommunications companies, with a history dating back to Alexander Graham Bell's invention of the telephone in 1876. The corporation manages the United States' largest wireless internet network, with more than 120 million wireless internet customers and more than 20 million high-speed internet and television customers. It also maintains more than 3.5 million business customers, including almost all of the Fortune 1000 companies. The company has approximately 240,000 employees and in 2013 saw consolidated revenues of $128.8 billion.[107]

AT&T's Innovation Process

AT&T employees participate directly in corporate innovation through a crowd-sourcing platform known as The Innovation Pipeline, or TIP. Currently, more than 130,000 employees are active members. Since the program's establishment in 2009, over 28,000 ideas have been submitted and the company has allocated more than $44 million to fund pipeline ideas. In total, the company has commercialized 75 TIP ideas.

The first phase of the pipeline is known as Social Innovation. Users have 24/7 online access to submit, vote, and collaborate on ideas, with each idea experiencing an average "Tip Season" of three months. A successful idea will then move on to the Prototype phase where founders build proposals and develop business cases to pitch to management. AT&T executives act as venture capitalists with company money to fund ideas of their choice. Ideas that receive funding then move on to the Production phase, during which employees known as TIP Champions help founders move their product through the appropriate

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[105] Dyer, J. and Gregersen, H. The secret of innovative companies: It isn't R&D. *Innovation Management*. Retrieved April 15, 2015, from http://www.innovationmanagement.se/2013/04/18/the-secret-of-innovative-companies-it-isnt-rd/

[106] Gallo, C. (2014, May 22). The seven innovation secrets of Steve Jobs. *Forbes.* Retrieved April 15, 2015, from http://www.forbes.com/sites/carminegallo/2014/05/02/the-7-innovation-secrets-of-steve-jobs/

[107] AT&T. AT&T Company. Retrieved April 16, 2015, from http://www.att.com/gen/investor-relations?pid=5711

business unit for launch. Finally, a successful idea may reach Commercialization, where it is implemented by an AT&T division, spun off into an external company, or sold to a third party.[108]

How AT&T Embedded Innovation

AT&T has a long history of institutionalizing innovation processes. AT&T Labs, which conducts research on advanced technologies in collaboration with experts and academia, is an offshoot of Bell Labs founded in 1925.[109] Here, development teams design the global network and develop new processes, systems, and service platforms for the market.[110] The company also maintains the AT&T Foundry, a collaborative community supported by a network of strategic technology companies,[111] such as Ericsson, Alcatel-Lucent, Amdocs, Cisco, Intel, and Microsoft. The foundry locations in Texas, Israel, Georgia, and California, as well as the Virtual Innovation Center, are considered ecosystems for venture capitalists and external developers. Small companies can meet with AT&T developers, increasing the company's access to talent. The foundries aim for accelerated progress, claiming "three times faster innovation," as projects move through five phases: Idea, Funding, Development, Testing, and Launch. [112] In 2009, AT&T added The Innovation Pipeline to its formula, encouraging all of its employees to submit innovative ideas online, and offering successful founders venture capital to develop their projects to a commercial scale.

How AT&T Frames Innovation
AT&T has included innovation as part of its corporate mission:

> *Today, our mission is to connect people with their world, everywhere they live and work, and do it better than anyone else. We're fulfilling this vision by creating new solutions for consumers and businesses and by driving innovation in the communications and entertainment industry.[113]*

Innovation also takes a place as one of AT&T's core values: "Deliver the future first." This is broken down into further innovation-related sub-values: "Innovate continuously and enable others to do the same"; "Take intelligent risks and learn from what works"; "Pursue what hasn't been done"; and "Power innovation to help solve societal challenges." [114]

Case 4: Bell Labs

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[108] AT&T. (2014). The Innovation Pipeline. Retrieved April 16, 2015, from http://www.att.com/Common/about_us/pdf/innovation_pipeline_092013.pdf

[109] AT&T. AT&T Labs. Retrieved April 16, 2015, from http://about.att.com/innovation/labs

[110] AT&T. Fact Sheet. Retrieved April 16, 2015, from http://www.corp.att.com/attlabs/about/factsheet.html

[111] AT&T. (2014). AT&T Foundry. Retrieved April 16, 2015, from https://developer.att.com/developer/forward.jsp?passedItemId=5300164

[112] AT&T. (2013). AT&T Foundry at a Glance. Retrieved April 17, 2015, from http://www.att.com/Common/about_us/pdf/infographic_foundry_overview.pdf

[113] Farfan, B. Company mission statements. *About Money.* Retrieved April 22, 2015, from http://retailindustry.about.com/od/retailbestpractices/ig/Company-Mission-Statements/AT-T-Mission-Statement-and-Values.htm

[114] AT&T. AT&T Company. Retrieved April 16, 2015, from http://www.att.com/gen/investor-relations?pid=5711

About Bell Labs

Formerly AT&T Bell Labs, Bell Laboratories is the research arm of Alcatel-Lucent with headquarters in Murray Hill, New Jersey. The organization has existed since 1925, when AT&T and Western Electric, the manufacturer for Bell Systems, consolidated their engineering departments, bringing together 4,000 engineers and scientists. When AT&T spun off most of Bell Laboratories and its manufacturing business into Lucent technologies in 1996, a small portion of Bell Labs developers went to the newly formed AT&T Laboratories. Most moved to business units of Lucent, however, and Bell Labs was left to focus solely on research. In 2007, with the merger of Alcatel and Lucent, Bell Labs was combined with Alcatel's Research and Innovations divisions under the umbrella of Alcatel-Lucent.[115] Today, Bell Labs is a leading research institution in information technology and communications. Known as "The Idea Factory" or "The Crown Jewel," it has eight Nobel Prizes to prove it. Its researchers are highly published in scientific and technical, peer-reviewed journals, maintain a number of senior appointments with professional societies, and are active in more than 150 industry standards associations and working groups.[116]

How Bell Labs Embedded Innovation

While Bell Labs legally remains part of a larger corporation, it has for most of its history operated as an independent institution dedicated to innovation through industrial research. Its tradition dates back to Mervin Kelly, who from 1925 to 1959 moved up through the organization from researcher to Chairman of the Board. Kelly's vision was to create an "institute of creative technology," a critical mass of innovators under one roof. He designed the lab buildings to promote mingling amongst researchers and encouraged them to work with their doors open.[117] Because the cafeteria provided an opportunity for researchers from different disciplines to interact, it became known as the most productive location on site.[118]

AT&T's historical status as a monopoly also contributed to Bell Labs' focus on innovation. Heavy government regulation meant that the organization was mandated to offer benefits to the nation, including innovation. The company had high income levels available for research and development, and it could afford to attract and develop a culture of independent researchers. Scientists and engineers could work on choice projects without the pressure of profits or patents.[119]

How Bell Labs Frames Innovation?

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[115] Bell Labs. History of Bell Labs. Retrieved April 18, 2015, from https://www.bell-labs.com/about/history-bell-labs/

[116] Bell Labs. Innovation at Work. Retrieved April 18, 2015, from https://www.bell-labs.com/our-research/industrial-research/

[117] Gertner, J. (2012, February 5). True innovation. *The New York Times*. Retrieved April 18, 2015, from http://www.nytimes.com/2012/02/26/opinion/sunday/innovation-and-the-bell-labs-miracle.html?_r=0

[118] The Linux Information Project. (2005, May 26). Bell Labs: A brief introduction. Retrieved April 18, 2015, from http://www.linfo.org/bell_labs.html

[119] The Linux Information Project. (2005, May 26). Bell Labs: A brief introduction. Retrieved April 18, 2015, from http://www.linfo.org/bell_labs.html

At Bell Labs, innovation takes place for innovation's sake, with an organizational mission of "inventing the future."[120] Researchers are not required to raise funds and they receive the autonomy and freedom to create. In fact, Bell Labs is often referred to as the "ivory tower" of industrial research[4]; similar to working at a leading university, without the task of dealing with students.[121] Similar to an academic environment, Bell Labs promotes a model of harmony and tension: cooperation and conflict between different disciplines, between researchers and developers, and between individuals and groups.[122]

Case 5: Hewlett-Packard

About Hewlett-Packard

Hewlett-Packard, also known as HP, is a provider of technologies, software, and product solution and services. Founded in 1939, with headquarters in Palo Alto, California the company maintains more than 300,000 employees and annual sales of more than $122 billion. While HP is best known for its personal computers and printers, business segments include Personal Systems, Printing, Enterprise Group, Enterprise Services, Software, HP Financial Services, and Corporate Investments. Customers include small-and-medium-sized business, as well as government, health, and education providers.[123]

HP's Innovation Process

The company provides services through HP Innovation Centers in Geneva and Dubai, as well as facilitation centers around the world, where it works directly with customers to address their business needs. Here, HP walks clients through a structured process, defining a transition path to business success. The process is described as "pragmatic," establishing a timeline in line with customer business realities and objectives. During this interaction, HP often makes use of "rapid concept prototypes" to enable a scenario-driven assessment of client experiences with different technologies. The scenarios are established to determine which technology solutions will have the maximum impact and how they should be used. HP aims to create scenarios similar to end-user environments, such as the home or office, to visualize how technologies will be implemented in practice.[124]

How HP Frames Innovation

[120] Bell Labs. About Bell Labs. Retrieved April 18, 2015, from https://www.bell-labs.com/prize/about-us
[121] The Linux Information Project. (2005, May 26). Bell Labs: A brief introduction. Retrieved April 18, 2015, from http://www.linfo.org/bell_labs.html
[122] Gertner, J. (2012, February 5). True innovation. *The New York Times*. Retrieved April 18, 2015, from http://www.nytimes.com/2012/02/26/opinion/sunday/innovation-and-the-bell-labs-miracle.html?_r=0

[123] Forbes. (2014, May). Hewlett-Packard. Retrieved April 15, 2015, from http://www.forbes.com/companies/hewlett-packard/
[124] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from http://www8.hp.com/us/en/campaigns/services/innovation-centers.html

HP considers innovation to be a customer-focused, technology-based process. Its definition of innovation is "The business of creating and developing good ideas and turning them into a successful business reality." The company refers to innovation as a "joint process" between HP and the customer. The overarching strategy is to ensure that customers maximize returns on their information technology investments. This requires helping customers understand the solutions and services HP offers.[125]

How HP Measures Innovation

HP outlines three requirements for its innovation process. First, the transition must be based upon client business requirements. At HP Innovation Centers, this is achieved by working directly with the client to outline technology needs. Secondly, the technology adoption must be "evolutionary and not revolutionary." This helps ensure that it is easily adapted, as outlined in scenario- and environment-driven assessments. Finally, the transition must achieve a "timely business result," a benchmark in line with HP's goal of helping customers maximize their returns on technology investments.[126]

Case 6: IBM

About IBM

IBM is a multinational technology and innovation company, with headquarters in Armonk, New York. The company offers technology and consulting services, middleware for collaboration, predictive analytics, software development and systems management, and advanced servers and supercomputers. IBM invests more than $6 billion a year in research and development. Employee-wise, it is the largest technology firm in the world, with more than 400,000 staff in 170 countries.[127] From 1993-2012, IBM inventors received nearly 67,000 U.S. patents. In 2012 alone, the company received a record 6,478 patents, exceeding the combined totals of Accenture, Amazon, Apple, EMC, HP, Intel, Oracle/SUN and Symantec.[128] It has received 9 US National Medals of Technology, 5 US National Medals of Science, and 6 Turing Awards. The company also has 10 Inductees in the US Inventors Hall of Fame and is home to 5 Nobel Laureates. It inventions include the PC, SABRE travel reservation system, UPC codes, and the Jeopardy computing system.[129]

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[125] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from
http://www8.hp.com/us/en/campaigns/services/faq.html
[126] HP. (2015). HP Innovation Centers. Retrieved April 22, 2015, from
http://www8.hp.com/us/en/campaigns/services/faq.html
[127] IBM. *Linkedin.* Retrieved April 28, 2015, from https://www.linkedin.com/company/ibm
[128] IBM Research. (2012). 20 years of research and patents. Retrieved April 28, 2015, from
http://www.research.ibm.com/articles/patents.shtml
[129] IBM. *Linkedin.* Retrieved April 28, 2015, from https://www.linkedin.com/company/ibm

IBM's Innovation Process

At IBM, innovation takes place in four phases: (1) ideation; (2) mobilize interest and collaborate; (3) incubate, prototype, and validate; and (4) implement and take to market. This occurs within an ecosystem consisting of at least six major programs:

- **ThinkPlace** is a collaborative ideation program, providing a portal for employees to post ideas and receive feedback. Innovation Catalysts from within the organization help ensure valuable ideas progress through the company and receive appropriate awards.
- **Innovation Jams** are a first step to the ideation process, bringing together employees, families, clients, and business partners in a number of online managed forums over a short period of time. In 2006, 140,000 people posted 37,000 ideas, suggestions, and comments within a 76-hour period.
- **Webahead** is an infrastructure-hosting provider for innovative technology deployments. As an advanced technology group, it supports accelerated prototyping of emerging technologies.
- **Biztech** is a program focused on IBM employees who have been with the organization less than five years, in part to help increase retention rates. Project sponsors initiate a project idea aimed at cost savings, project improvements, or the launch of new technology. A virtual team supported by technical leaders work to deliver results in a nine to twelve-month time frame.
- **Extreme Blue™** is an internship program for software development and MBA students. Teams of students develop a technology and business plan for a new product or service in response to a market challenge. This program has seen a number of successes, including 270 patent disclosures, six contributions to the open source community, multiple solutions for clients, and new IBM products.
- **Technology Adaption Program** is a community-driven innovation management program conducted through the IBM intranet. Innovators and early adopters from throughout the company participate in the portal by offering new technologies for other employees to access, use, and provide feedback on.[130]

How IBM Embedded Innovation

In 2005, IBM set out to break down organizational silos and develop a bottom-up community of innovation with the launch of the Technology Adaption Program (TAP). Based on the understanding that the bulk of innovation (approximately 42%) comes from employees within a company and not specifically from research and development, TAP offers a crowdsourcing platform to accelerate technology adoption within IBM. Innovators share new technologies, receiving feedback and ideas from other IBM employees. Employees with the IBM International Technical Support Organization describe the impact of programs such as TAP on a company's innovation climate:

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[130] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

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.

More than 350,000 IBM employees currently participate in TAP. Since its organic beginnings, TAP has shifted its focus from expanding its number of technology offerings and users to progressing and maturing pilots past early adoption. It is also marketing the TAP system to clients to use for their own innovation processes. [131]

How IBM Frames Innovation

IBM has developed innovation as a core of its business strategy. Of the four pillars centered around a "focus on enterprises that value innovation," the first pillar is "Lead the Innovation Conversation." Sub-pillars of the innovation strategy include, "Lead in high impact business innovations; Collaborate with clients, partners and academia; and Employ advanced innovation tools, processes and policies." One of the company's three core values is "Innovation that matters – for our company and for the world." IBM employees:

- Are forward thinkers. We believe that the application of intelligence, reason and science can improve business, society and the human condition.
- Love grand challenges, as well as everyday improvements. Whatever the problem or the context, every IBMer seeks ways to tackle it creatively — to be an innovator.
- Strive to be first — in technology, in business, in responsible policy.
- Take informed risks and champion new (sometimes unpopular) ideas.[132]

How IBM Measures Innovation

IBM assesses TAP innovation primarily through feedback from program users. Active data collection includes surveys, including a short version, as well as a long survey for evaluation, feedback, and defect tracking. Open source software is also used to track defects. Passive data collection includes tracking user activity and logging. Key evaluation criteria are:

- Usage by target population: the number of times a new product is downloaded, as well as weekly usage rates

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[131] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

[132] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

- Total energy level association with the technology: Also known as "buzz" or "hype." This is the amount of interest, discussion, and participation the offer receives, measured by page traffic, forum collaboration levels, associated blogging activity, related podcasts and intranet articles, and the frequency of tagging in the IBM Internal Enterprise Tagging Service
- End user satisfaction: indicated in written survey feedback.
- Potential innovation value: from the perspective of internal and external opportunities[133]

Case 7: Whirlpool Corporation

About Whirlpool

Whirlpool Corporation is a manufacturer and marketer of household appliances, with annual sales of approximately $19 billion. The company maintains 69,000 employees with headquarters in Benton Harbor, Michigan, and activities in more than 135 countries and 59 manufacturing and research centers around the world. [134] Whirlpool designs, engineers, markets, and sells solutions to help consumers improve productivity and efficiency in the home.[135] Marketed brands include Whirlpool, Maytag, KitchenAid, Jenn-Air, Amana, Brastemp, Consul, and Bauknecht.[136]

Whirlpool's Innovation Process

Whirlpool's innovation process can be described as both bottom-up and top-down. On a micro level, the organization encourages new ideas from "anyone, anywhere," tracking and developing ideas with online forums and conducting ideation sessions. Ideas then follow a structured process that involves business case formation using a migration path, competition for development applying rigorous criteria, testing and experimentation of the ideas using tollgates and market research, and finally large-scale commercialization. For each phase, the company expects an idea survival rate of 10 to 1 from bottom-up. Out of ten ideas, for example, one idea will likely move on to business case formation, and out of ten development competitions, one development will make it to the market. In addition, a top-down approach aggregates data on innovation activity throughout the organization. Using a set of tools and metrics, company leadership is able to make macro decisions and set strategic goals.[137]

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[133] Alkalay, A., Almond, C., Bloom, J., Chow, A., Peters, F., Rogers, R., & Wyble, C. (2007, December). Supporting innovators and early adopters: A Technology Adaption Program cookbook. Retrieved April 28, 2015, from http://www.redbooks.ibm.com/redpapers/pdfs/redp4374.pdf

[134] Whirlpool Corporation. (2014). Fact Sheet. Retrieved April 15, 2015, from http://files.shareholder.com/downloads/ABEA-5DXEK8/46639948x0x419795/7F83D6B1-89AB-4306-9A6D-92929EA854C3/FactSheet.pdf

[135] Rapp, J.D. (2013, January 23). Inside Whirlpool's innovation machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

[136] Whirlpool Corporation. (2014). Fact Sheet. Retrieved April 15, 2015, from http://files.shareholder.com/downloads/ABEA-5DXEK8/46639948x0x419795/7F83D6B1-89AB-4306-9A6D-92929EA854C3/FactSheet.pdf

[137] Rapp, J.D. (2013, January 23). Inside Whirlpool's Innovation Machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

How Whirlpool Measures Innovation

Whirlpool evaluates innovation using a clear set of criteria. The first requirement is that the innovation is a "unique and compelling solution valued by our customers and aligned to our brands." The product or service should be original to the market or to Whirlpool and must impact the end user. The company would not count its own cost reductions, for example, as innovation. Secondly, the innovation must "create sustainable, competitive advantage." Competitors should be unable to copy the product or service for at least two years. Whirlpool must have a unique advantage, such as a patent, distribution channels, or brand strength. Finally, the innovation must "create differentiated shareholder value." This requires a feasible business case with the expectation of meaningful returns. Whirlpool also expects that its innovative products and services will come at a higher price.[138]

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[138] Rapp, J.D. (2013, January 23). Inside Whirlpool's Innovation Machine. *Management Exchange.* Retrieved April 10, 2015, from http://www.managementexchange.com/story/inside-whirlpools-innovation-machine

APPENDIX F: AUTHOR BIOS

Chris McSwain

Chris McSwain joined Aasonn as Chief Strategy Officer in January, 2015 to lead innovation and best practices for their global consulting services, business process outsourcing, and human resources transformation divisions. The role allows Chris to pursue his passion for creating innovative strategies, and together with the team, achieve win-win-win solutions for employees, customers, and suppliers.

He previously served at Walmart from 2010-2014 as Vice President, U.S. Benefits, supporting 1.4M associates. Initial team innovations and accomplishments included high engagement wellbeing, retail clinic development, centers of excellence with bundled pricing and direct contracting, innovations impacting health care cost trends, creating an integrated absence management function, and direct-to-consumer healthcare marketplace utilizing social media.

Pursuits outside his corporate roles have included serving as the Integrated Benefit Institute's (IBI) Board Chairman, during which IBI experienced unprecedented growth in member companies, reaching over 1,000. Chris co-founded the "World Wide Wellbeing" initiative, bringing thought leaders together globally and presenting results to the Organisation for Economic Co-operation and Development's leadership in Paris. As a long-standing member of the Global Knowledge Exchange Network (GKEN), he has served leadership roles in support of the "Global Healthy Workplace Awards" in London and Shanghai.

In 2007, he joined Whirlpool Corporation as Sr. Director, Global Benefits where his five-year strategic plan helped drive business, employee and financial performance improvements over all sub-functional areas of global benefits. While he held that role, teams implemented a large number of strategic initiatives including the creation of world class supplier management strategies, on-site integrated care services, pharmaceutical supply chain disruption, a medical home, and a community of health. The Global Benefits team was honored to receive a national Total Health and Productivity award in 2010. Business Insurance Magazine named Chris 1 of 20 "2008 People to Watch" along with Senator Hillary Rodham Clinton, Mitt Romney, Warren Buffett and Governor Arnold Schwarzenegger.

From 2003-2007, he served as Director, Compensation and Benefits for SCANA Corporation. Completed initiatives at SCANA included a resource center designed to deliver an outstanding customer experience, lower costs and improved health. These integrated services leveraged an on-site Pharmacy with robot, wellness and EAP coaches. Other accomplishments included value based benefit designs, data aggregation, vendor integration, and a Mobile Medical Unit. Business Insurance Magazine named Chris the "2005 Benefits Manager of the Year."

Jon R. Comola

Jon is the Founder of Wye River Group (WRG) and Global Knowledge Exchange Network (GKEN). Jon founded the parent organization, WRG, in 1997 in Washington, D.C. to advance innovations at the intersection of public policy and the market place. Grounded in the notion of collaboration and public-private partnerships, both WRG and GKEN organize and facilitate dialogue among thought leadership in the USA and around the globe.

Mr. Comola has more than 30 years of experience and is skilled at bringing disparate interests together, facilitating dialogue designed to find common ground. He is seasoned in shaping public policy on issues of water, health, and health care. He developed the Wye River model to facilitate areas of agreement where a making of a consensus can be advanced. He has successfully worked with private and public sector nationally and internationally.

Jon has consulted for the US Chamber of Commerce, American Cancer Society, American Hospital Association, HRSA, RWJF, HIV/Aids Foundation, National Association of School Based Health Clinics, National Association of Chain Drug Stores, National Retail Federation/Chain Restaurants, USA Congressionally mandated Citizen Healthcare Work Group, and others, applying strategic intelligence, 3rd party advocacy and consensus building techniques to advance public policy and business outcomes. Mr. Comola is expert in facilitating public private stakeholder partnerships and alliances that support evolving roles and balance public policy objectives with business goals.