

What makes some people innovative? HBR.org/ Dec.2009 ... The innovator's DNA by Jeff Dyer, Ha Greersen and Clayton Christensen

Five “Discovery skills” separate true innovators from the rest of us. These three studied 25 entrepreneurs and surveyed 3,000 executives who have started innovative companies or invented new products. What was different about them? Could this be learned or are you born with it?

They have something different called creative intelligence which enables discovery yet differs from other intelligence. Innovators engage both sides of the brain as they leverage 5 discovery skills to create new ideas.

Skills	Attributes
<p>Associating Steve Jobs has frequently observed, “Creativity is connecting things”</p>	<p>The ability to successfully connect seemingly unrelated questions, problems or ideas from different fields, is central to the Innovator's DNA</p> <p>The Medici effect caused the explosive growth in Florence in creativity by bringing together Sculptors, Scientists, Poets, Philosophers, Painters and Architects.</p>
<p>Questioning It's asking the right question ... Peter Drucker</p>	<p>Innovators constantly ask questions that challenge common wisdom</p> <p>“If we did this, what would happen?” Ask “Why” and “Why not” and “What if?”</p> <p>Imagine opposites ... in his book “The opposable Min”, Roger Martin writes that innovative thinkers have the capacity to hold two diametrically opposing ideas in their head.</p>

	<p>Embrace constraints ... great questions actively impose constraints on our thinking and serve as a catalyst for out-of-the-box-insights</p> <p>One of Google's nine innovation principles is "Creativity loves Constraints"</p>
<p>Observing ... Behaving like anthropologists and social scientists</p>	<p>Observers try all different techniques to see the world in a different light.</p> <p>Akio Toyoda regularly practices Toyota's philosophy of "genchi genbutsu – "going to the spot and seeing yourself"</p> <p>Frequent direct observation is baked into the Toyota culture.</p>
<p>Experimenting ..</p>	<p>Like scientists, innovators actively try out new ideas by creating prototype and launching pilots. Bezo (Amazon) sees experimentation as so critical to innovation that he has institutionalized it at Amazon. "I encourage our employees to go down blind alleys and experiment" Bezo says. " if we can get processes decentralized so that we can get a lot of experiments without it being very costly, we'll get a lot more innovation".</p>
<p>Networking Devoting time and energy to finding and testing ideas through a network of diverse individuals gives innovators a radically different</p>	<p>They attend idea conferences to get ideas. "The insights required to solve many of our most challenging problems come from outside our industry and scientific field. We must aggressively</p>

perspective.

and proudly incorporate into our work finding and advances which were not invented here” ... Kent Bowen ... Found of CPS technologies

How do you do this;

Practice, Practice, Practice

The most important skill to practice is questioning. Asking “Why” and “Why not” can help turbo-charge the other discovery skills.

Rehearsing over and over the behaviors described, to the point that they become automatic. This requires putting aside time for you and your team to actively cultivate more creative ideas.

To strengthen experimentation consciously approach work and life with a hypothesis-testing mind-set. Attend seminars or executive education courses on topics outside your area of expertise; take apart a product or process that interests you; read books that purport to identify emerging trends.

Develop new hypothesis for the knowledge you’ve acquired and test them in the search for new products or processes.

Openly acknowledging that learning through failure is valuable goes a long way toward making an innovative culture.

“ACT DIFFERENTLY”

Howard Gardner, Hobbs Professor of Cognition and Education at the Harvard Graduate School of Education, is a psychologist and author known for his theory of multiple intelligences. Application of his theory, especially for education, has been controversial. But I think his latest book, *Five Minds for the Future*, is a must read for technology professionals.

His thesis is that, "...vast changes that include accelerating globalization, mounting quantities of information, the growing hegemony of science and technology, and the clash of civilizations," requires, "capabilities that, until now, have been mere options." He describes "Five Minds," or cognitive abilities that will command a premium in the years ahead:

1. The Disciplinary Mind -- the mastery of major schools of thought (including science, mathematics, and history) and of at least one professional craft.
2. The Synthesizing Mind -- the ability to integrate ideas from different disciplines or spheres into a coherent whole and to communicate that integration to others.
3. The Creating Mind -- the capacity to uncover and clarify new problems, questions and phenomena.
4. The Respectful Mind -- awareness of and appreciation for differences among human beings and human groups.
5. The Ethical Mind -- fulfillment of one's responsibilities as a worker and as a citizen.

While the book is not directed specifically at technology professionals, I found much of what he said echoed characteristics of the most effective people I know: deep domain expertise, intellectual curiosity, creativity, global perspective, knowledge of and respect for diverse cultures, and teamwork. It is and will continue to be possible for anyone with a few of these characteristics to succeed in technology, but I believe those who excel and assume positions of leadership will exhibit all of these abilities.

IBM CEO creativity

ARMONK, NY, - 18 May 2010: According to a major new IBM (NYSE: [IBM](#)) survey of more than 1,500 Chief Executive Officers from 60 countries and 33 industries worldwide, chief executives believe that -- more than rigor, management discipline, integrity or even vision -- successfully navigating an increasing complex world will require creativity.

Conducted through in-person interviews with senior leaders and consultants from IBM's Global Business Services division, less than half of global CEOs believe their enterprises are adequately prepared to handle a highly volatile, increasingly complex business environment. CEOs are confronted with massive shifts – new government regulations, changes in global economic power centers, accelerated industry transformation, growing volumes of data, rapidly evolving customer preferences – that, according to the study, can be overcome by instilling “creativity” throughout an organization.

The CEOs Speak



In surveying more than 1,500 Chief Executive Officers from around the world, the IBM 2010 Global CEO Study found that chief executives believe successfully navigating an increasing complex world will require creativity.

More than 60 percent of CEOs believe industry transformation is the top factor contributing to uncertainty, and the finding indicates a need to discover innovative ways of managing an organization's structure, finances, people and strategy.

The study also uncovers starkly divergent strategic concerns and priorities among CEOs in Asia, Japan, Europe or North America – the first time such clear regional variations have appeared in this biennial survey of private and public sector leaders.

"Coming out of the worst economic downturn in our professional lifetimes -- and facing a new normal that is distinctly different -- it is remarkable that CEOs identify creativity as the number one leadership competency of the successful enterprise of the future," said Frank Kern, senior vice president, IBM Global Business Services "But step back and think about it, and this is entirely consistent with the other top finding in our Study -- that the biggest challenge facing enterprises from here on will be the accelerating complexity and the velocity of a world that is operating as a massively interconnected system."

Managing complexity

The CEOs interviewed told IBM that today's business environment is volatile, uncertain and increasingly complex. Eight in ten CEOs expect their environment to grow significantly more complex but only 49 percent believe their organizations are equipped to deal with it successfully – the largest leadership challenge identified in eight years of research.

The CEOs said that the complexity of an interconnected world is aggravated by a number of factors. For example, CEOs expect revenue from new sources to double over the next five years and 76 percent of CEOs foresee the shift of economic power to rapidly developing markets.

Over the last four studies, the expected impact of technology on organizations has risen from 6th to 2nd place in importance, revealing that CEOs understand that technology and the interconnection of the world's infrastructures is contributing to the complexity they face, and also reveals that they need more technology-based answers to succeed in a world that is massively interconnected.

The study highlights the attributes of top-performing organizations based on revenue and profit performance during the past five years, including the economic downturn.

- Top performing organizations are 54 percent more likely than others to make rapid decisions. CEOs indicated they are learning to respond swiftly with new ideas to address the deep changes affecting their organizations.
- 95 percent of top performing organizations identified getting closer to customers as their most important strategic initiative over the next five years – using Web, interactive, and social media channels to rethink how they engage with customers and citizens. They view the historic explosion of information and global information flows as opportunities, rather than threats.
- Organizations that have built superior operating dexterity expect to capture 20 percent more of their future revenue from new sources than their more traditional peers.

One World, Diverging Views

Vast complexity is further intensified by regional differences. The study noted that perspectives varied with geography – differences of opinion about what changes to make, what new skills will be needed and how to succeed in the new economic environment. These regional variations also compound the complexities with which CEOs must contend.

China proved much more resilient than the developed nations during the economic downturn. So, CEOs in China are, understandably, less concerned about volatility than CEOs in other regions. In fact, they are becoming increasingly confident of their place on the world stage.

But if China is to fulfill its global aspirations, it will need a new generation of leaders with creativity, vision and international management experience. Many of the country's CEOs recognize this; 61 percent believe "global thinking" is a top leadership quality. Most companies will also need new industry models and skills. They cannot simply replicate the models they have used in their domestic market, which has a completely different cost structure. CEOs in China are also devoting far more energy to building new skills and capabilities than their peers in the West.

In North America, which faced a financial crisis that led to governments becoming major stakeholders in private enterprise, CEOs are more wary of "big government" than CEOs elsewhere. A full 87 percent anticipate greater government intervention and regulation over the next five years, compounding their sense of uncertainty.

In Japan, 74 percent of CEOs expect the shift of economic power from mature to rapidly developing markets to have a major impact on their organizations. By contrast, the European Union is less concerned about this shift, with only 43 percent of CEOs expecting to be impacted.

Understanding these and other sharp differences emerging by region is increasingly important as economies and societies become more closely linked. Organizations confront these differences as they increasingly operate across boundaries and across different regions.

About the IBM 2010 Global CEO Study


This study is the fourth edition of IBM’s biennial Global CEO Study series. To better understand the challenges and goals of today’s CEOs, IBM consultants met face-to-face with the largest-known sample of these executives.

Between September 2009 and January 2010, IBM interviewed 1,541 CEOs, general managers, and senior public sector leaders who represent different sizes of organizations in 60 countries and 33 industries.

For access to the full study findings and case studies, please visit: <http://www.ibm.com/ceostudy>

To join the conversation about smarter leadership, please visit: <http://smarterleaders.tumblr.com/>

Summary of future needs of Society around Thinking Skills

Future Need’s of Society		A whole new mind by Daniel Pink	5 Minds for the Future ... Howard Gardner
		Design ... creating something	The Creating Mind -- the capacity to uncover and clarify new problems, questions and phenomena
		Stories .. fashion a compelling narrative	The Ethical Mind -- fulfillment of one's responsibilities as a worker and as a citizen.
		Symphony ... putting the pieces together	The Synthesizing Mind -- the ability to integrate ideas from different disciplines or spheres into a coherent whole and to communicate that integration to others.
		Empathy .. walk in someone else’s shoes	The Respectful Mind -- awareness of and appreciation for differences among human beings and human groups
		Play	
		Meaning ...pursue more significant desires; purpose, fulfillment	The Disciplinary Mind -- the mastery of major schools of thought (including science, mathematics, and history) and of at least one professional craft.

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Creative Reasoning:

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