

SPECIAL REPORT

Old

COTTON MOP P&G studied the art of cleaning in search of something better than a wet mop, which spreads as much dirt as it picks up.



GET CR

(MOP) DWIGHT ESCHLIMAN/PHOTONICA; (SWIFFER) JOE CALVIELLO/BW

New

SWIFFER P&G came up with a whole new way to clean—using electrostatic attraction. A revolutionary dry mop was born.



How to Build Innovative Companies

BY BRUCE NUSSBAUM

EATNVE!

Old

CIRCUS Traditional animal acts, painted clowns, and high-wire stunts make for a very tired form of entertainment.

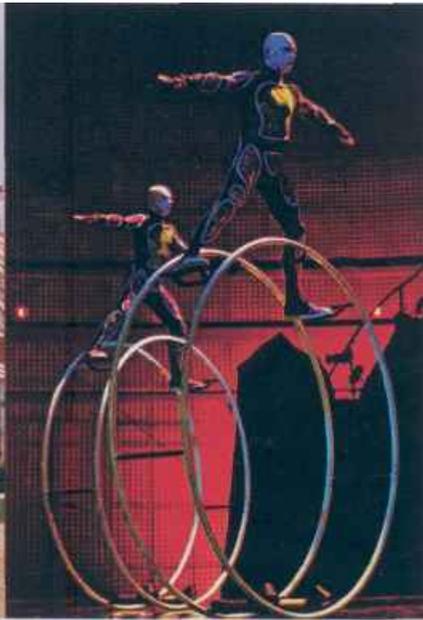


BIRKENSTOCK The '60s icon of the ergonomic and eco-friendly lifestyle needed a modern update.

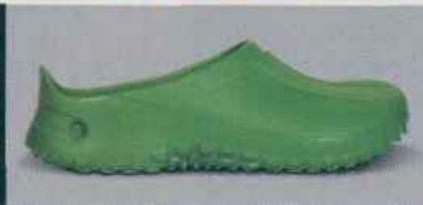


New

CIRQUE DU SOLEIL A dramatic rethinking of what a circus can be, with amazing costumes, moving music, and beautiful gymnastics that provide a "wow" experience.



BIRKIS Designers kept the core values and added new models, including colorful slip-ons for the beach.



LISTEN CLOSELY. THERE'S A new conversation under way across America that may well change your future. If you work for Procter & Gamble Co. or General Electric Co., you already know what's going on. If you don't, you might want to stop what you're doing and consider this:

The Knowledge Economy as we know it is being eclipsed by something new—call it the Creativity Economy. Even as policymakers and pundits wring their hands over the outsourcing of engineering, software writing, accounting, and myriad other high-tech, high-end service jobs—not to mention the move of manufacturing to Asia—U.S. companies are evolving to the next level of economic activity.

What was once central to corporations—price, quality, and much of the left-brain, digitized analytical work associated with knowledge—is fast being shipped off to lower-paid, highly trained Chinese and Indians, as well as Hungarians, Czechs, and Russians. Increasingly, the new core competence is creativity—the right-brain stuff that smart companies are now harnessing to generate top-line growth. The game is changing. It isn't just about math and science anymore. It's about creativity, imagination, and, above all, innovation.

What is unfolding is the commoditization of knowledge. We have seen global forces undermine autos, electronics, and other manufacturing, but the Knowledge Economy was expected to last forever and play to America's strengths: great univer-

sities, terrific labs, smart immigrants, an entrepreneurial business culture.

Oops. It turns out there are a growing number of really smart engineers and scientists "out there," too. They've learned to make assembly lines run efficiently, whether they turn out cars or code, refrigerators or legal briefs. So U.S. companies are moving on to creating consumer experiences, not just products; reconceiving entire brand categories, not merely adding a few more colors; and, above all, innovating in new and surprising arenas.

The U.S. has a lead in this unfolding Creativity Economy—for the moment. The new forms of innovation driving it forward are based on an intimate understanding of consumer culture—the ability to determine what people want even be-

The Evolution of the Creative Company

A new corporate model is taking shape. By focusing on creativity and innovation, it could provide **new pathways to growth**:

STEP 1

Technology and information become commoditized and globalized. Suddenly, the advantage of making things "faster, cheaper, better" diminishes, and profit margins decline.

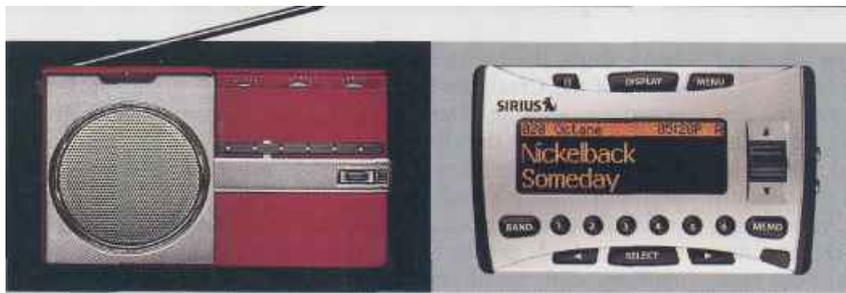
STEP 2

With commoditization, core advantages can be shipped abroad. Outsourcing to India, China, and Eastern Europe sends a growing share of manufacturing and even the Knowledge Economy overseas.

STEP 3

Design Strategy begins to replace Six Sigma as a key organizing principle. Design plays key role in product differentiation, decision-making, and understanding the consumer experience.

Old



RADIO Same old, same old ad-choked, pre-programmed music and talk, from big national chains.

New

SIRIUS Subscriber model brings a rich variety of content via satellite to your car and your handheld.

BIG BOX

Crowded shelves, overwhelming choice, and standard sales pitches.



APPLE STORE Spare, elegant, and appealingly interactive—a hip place to be on a Saturday night.

fore they can articulate it. Working in what is still the largest consumer market in the world gives U.S. companies a huge edge. So does being able to think outside the box—something Americans still do better than most. But Toyota Motor Corp. has a feel for U.S. consumers, and Samsung Group can be pretty creative, too. Competition will surely be intense.

A New Dance

FOR MANAGERS, THE biggest challenge may be making the leap from their Six Sigma process skills to new ways of thinking. For corporations, transforming themselves will require new sets of values and organizational principles. Have you heard of design strategy? If s probably the Next

Big Thing after Six Sigma. How about consumer-centric innovation? It may be the most powerful way to raise a company's innovation success rate. Do you know what innovation metrics your company needs? Have you heard of CENCOR (calibrate, explore, create, organize, and realize)? If s the post-Six Sigma dogma GE is spreading far and wide among its managers. Are B-schools on top of all this change? Not really, but Stanford University is starting a "D-school"—a design school where managers can learn the dynamics of innovation (page 80). Teaching elephants to dance is never easy, but that's the task ahead if you want your company—and your career—to prosper.

You're thinking "this is all hype," aren't you? Just another "newest and biggest" fad, right? Wrong. Ask the 940 senior executives from around the world who said in a recent Boston Consulting Group Inc. survey that increasing top-line revenues through innovation has become essential to success in their industry. The same BCG survey showed that more than half of the

execs were dissatisfied with the financial returns on their investments in innovation. They should be. By one measure, from innovation consultant Doblin Group, nearly 96% of all innovation attempts fail to beat targets for return on investment. No wonder innovation frustration is the talk of corner offices.

BusinessWeek is joining this growing conversation about getting creative by launching a new online Innovation & Design portal—www.businessweek.com/innovate—to present the best research and thinking on the subject. Take a look at the interactive self-assessment feature developed by Larry Keeley's Doblin Group. There are six innovation metrics available. Keeley is the guru of the evolving field of innovation science. Some compare him to W. Edwards Deming, who revolutionized the field of quality measurement.

There is, in fact, a whole new generation of innovation gurus. They are not the superstars of the '90s, such as Clayton Christensen, who focused on what might be called macro-innovation—the impact of big, unexpected new technologies on companies. The new gurus focus more on micro-innovation—teaching companies' how to connect with their customers' emotions, linking research and development labs to consumer needs, recalibrating employee incentives to emphasize

STEP 4	STEP 5
<p>Creative innovation becomes the key driver of growth. Companies master new design thinking and metrics and create products that address consumers' unmet, and often unarticulated, desires.</p>	<p>The successful Creative Corporation emerges, with new Innovation DNA. Winners build a fast-moving culture that routinely beats competitors because of a high success rate for innovation.</p>

creativity, constructing maps showing opportunities for innovation.

When creative mojo gets going, it can explode into innovation. An example: the mundane mop. Cleaning used to be done with mops and water. Design Continuum Inc. in West Newton, Mass., researched cleaning for P&G and observed that water tends to slop dirt around, while dry rags pick it up (thanks to electrostatic attrac-

tion). Ergo, the Swiffer. In the design-speak of the Creativity Economy, this is paradigm shifting. Design Continuum helped P&G shift the cleaning paradigm. Now the Swiffer may become P&G's newest \$1 billion brand.

Think out-of-the-box consumer experiences, and you get the idea of paradigm shifting. Old paradigm: corner coffee shops. New paradigm: Starbucks. Old:

radio. New: satellite radio. Old: crowded electronics stores. New: Apple Computer stores. Old: grungy, smelly circuses. New: Cirque du Soleil. Old: any airline. New: JetBlue Airways. Old: Mac/s. New: Target. Old: Earth-toned Birkenstock sandals. New: colorful beach "Birkis."

The evolution of the economy toward creativity has been underway for some time. Steve Jobs, of course, has turned Apple into

Top 20 Innovative Companies in the World

2005 poll of 940 senior executives in 68 countries by Boston Consulting Group

COMPANY	RESPONSES	WHY
APPLE	24.84%	Delivers great consumer experiences with outstanding design ; steady flow of new ideas that redefine old categories, such as music players; continual evolution of business model and brand.
3M	11.77	Strong internal culture of creativity with formal incentives to innovate. Results in a high success rate in turning ideas in health care, industrial components, and other areas into profitable products.
MICROSOFT	8.53	Strong management pushes continuous improvement of products , expansion into new markets and rapid strategy changes when necessary.
GE	8.53	Management practices that are ahead of competition , along with strong training, are allowing CEO Immelt to reinvent GE's business model and culture to promote innovation.
SONY	5.94	Understands the importance of media convergence ; creates new user-friendly electronic products with great design.
DELL	5.62	Superior business-process model built on ruthless cost-cutting and innovations in supply-chain management.
IBM	5.29	Wants to use its powerful IT base to solve customers' problems and even run their businesses.
GOOGLE	5.18	Steady stream of new tools and services provide simple solutions to complex problems. Dominates online search and is growing fast in advertising; strong connection with customers.
P&G	4.21	Continuous product innovation based on understanding of changing consumer lifestyles . In a switch, now seeks outside partners for new expertise, ideas, and even products.
NOKIA	4.21	Sharp design, changes models rapidly, and adds features effortlessly, based on a close reading of customer desires in the emerging mobile lifestyle.
VIRGIN	4.00	Reframed air travel as a lifestyle brand and extended the brand into retail stores, cell-phone service, and other products; takes risks; attacks weak spots of traditional service providers.
SAMSUNG	3.89	Catches the pulse of the consumer ; good design; understands emotion; moved from commodity producer to brand leader; generates a flow of new products from cell phones to stunning flat-screen TVs.
WAL-MART	3.24	Uses supply-chain and logistics superiority to move into new markets and product areas. Data mining tracks customer preferences on a daily basis, contributing to fast growth despite its size.
TOYOTA	3.02	Quality and manufacturing efficiency are constantly upgraded. Strategic use of advanced technology yields big market advantages in areas such as hybrid cars.
EBAY	2.92	Forged a new retail business model based on customer power, cheap prices, and community .
INTEL	2.70	Dynamic business model with the ability to disrupt itself to meet competition in areas such as wireless computing.
AMAZON	2.70	Overtaken retail distribution with Internet technology and a focus on the consumer experience .
IDEO	2.16	Top consultant on the process of innovation ; uses design principles to guide companies through strategy changes that focus on consumer experience.
STARBUCKS	2.05	Reframed the coffee business as a lifestyle brand by watching customers; created a strong consumer affinity to the brand and uses that affinity to sell new products, such as music.
BMW	1.73	Combines sleek design, advanced technology, and Web-based marketing to increase brand leadership and move into extensions, such as the the revived MINI Cooper.

the paragon of the creative corporation. Companies throughout the world are deconstructing Apple's success in design and innovation, and learning the lessons.

Today all kinds of blue-chip CEOs are signing on to creativity. A.G. Lafley, P&G's CEO, and Jeffrey R. Immelt, GE's CEO are at the core of the new movement. Lafley started it when he took over in 2000, but Immelt's conversion to creativity when he became chief executive in 2001 is giving the shift to creativity more momentum. Because of GE's size and scope, when it moves, the economy moves with it. The vocabulary of business may be changing as well. It's hard to imagine former GE boss Jack Welch saying: "Creativity and imagination applied in a business context is innovation," as Immelt recently did. Or "we're measuring GE's top leaders on how imaginative they are. Imaginative leaders are the ones who have the courage to fund new ideas, lead teams to discover better ideas, and lead people to take more educated risks," as he added. That's a sea change from rewarding GE managers for a career of floating from operation to operation, massaging the process for incremental improvements.

Lafley sits on GE's board, so two of America's most powerful and effective CEOs now meet regularly, talk about creativity, discuss which of the new breed of innovation gurus is offering the best advice, and exchange notes on what works and what doesn't. When the history of the transition from the Knowledge Economy to the Creativity Economy is written, these two will probably get much of the credit.

To understand why the creativity movement is becoming so important, you

More on The Creative Corporation, Only at BusinessWeek.com

Who is most innovative in your industry? See BCG's survey.

Slide Show: From big tops to Birkenstocks, everything is being reconceived.

"Solutions Are More Human": IDEO's David Kelley talks about how trends in design are changing companies.

"Why Do You Need That?": 3M stays innovative by asking customers basic but probing questions.

P&G's Top Secret Design Board: Trying to identify consumer-product needs that consumers haven't identified themselves.



Old

VIDEO STORES Standard retail shopping—pick it up, drop it off, and, sometimes, pay late fees.

PRESCRIPTION BOTTLE Hard to open, impossible to read, infuriating to use.



need to go back to its roots at P&G. By harnessing the power of design, P&G has transformed itself from a stagnant brand manager into a model of innovation efficiency that outperforms industry rivals.

Before Lafley, P&G's volume growth was basically flat. The company cared more about how its products functioned than it did about how customers felt about them. "P&G had the best chemical engineering and marketing operations in the country," says Patrick Whitney, director of the Institute of Design at Illinois Institute of Technology. "It didn't care about the user experience." P&G could tell retailers to stock eight kinds of Crest, and they did. As power shifted to big retailers, P&G couldn't do that. "It had to create new products, and to do that, P&G had to get closer to the consumer," says Whitney.

Fresh Eyes

LAFLEY TURNED TO design. In 2001 he established a new executive post: vice-president for design, innovation, and strategy, naming Claudia B. Kotchka, now 53, to fill it. She and Lafley knew they couldn't change P&G's culture without fresh eyes from the outside. So they made a major decision: Even as P&G began laying off thousands of top executives, middle managers, scientists, and others, it quadrupled its design staff. For the first time it hired a legion of designers who had worked at other companies and in other industries.

In a second crucial decision, Kotchka dispatched designers to work directly with R&D staffers to help to conceive new products. This changed P&G's entire innovation process, making it consumer-centric rather than driven by new technology. To open up the company further, P&G started hiring different kinds of consultants. Among them were Design Continuum; ZIBA Design in Portland, Ore.; Chicago's

Doblin Group; and IDEO in Palo Alto, Calif.

Here's how it works at P&G: Kotchka contacts P&G's divisional heads, asking for a list of possible opportunities designers might address. Recently, the head of home care said it was time to look at bathroom cleaning. Kotchka brought in IDEO with the goal of helping out. IDEO and P&G's designers went out and observed people cleaning bathrooms around the world. In South America they saw women using brooms to clean walls and showers effectively and built a prototype combining a small hand cleaner with a long pole. P&G tested the idea via a survey. People hated it.

But P&G hung in there. What is fast becoming the Holy Grail of innovation—the "unmet, unarticulated" needs of consumers—didn't show up in the survey. Instead, P&G relied on the informed intuition of designers and tested the idea again, using working prototypes. People loved the real thing. P&G then broke

Some Innovation

There are many mistaken views about how innovation works. Here are **some of the most pervasive:**

MYTH

- Innovation is only about creating hot new products
- Innovation is about crazy creativity
- Innovation is expensive and takes time
- You need hundreds of ideas because the failure rate for innovation is high
- Metrics guarantee higher innovation success rates



New

NETFLIX Subscriber service offering vast inventory, one-click Web shopping, delivered to you.



TARGET PRESCRIPTION BOTTLE Color-coded to specific medicines, easy to open and read.

down the walls of its Mr. Clean brand, reached in and used the Mr. Clean detergent for the new product. The Mr. Clean MagicReach was introduced in April—with a four-foot detachable pole. Mundane as this example may be, it shows how design strategy can generate innovative new products and sales.

To build a design infrastructure, Lafley also established what he calls his innovation "gym," a place to train managers in the new design thinking. And he created a Design Board of non-P&Gers who provide an independent perspective on products, brand extensions, and marketing.

Jeff Immelt inherited one of America's most successful companies. GE's incredible process culture, which brought so much to the bottom line in the '90s, was no longer enough to maintain its leadership in the 21st century. Like Lafley, Immelt needed to create an innovation culture quickly. One of his major goals was

to raise GE's average organic growth to 8% from the 5% of the past decade. The skills Jack Welch prized—cost-cutting, efficiency, the continual improvement of operations—couldn't deliver that.

Big Bets

IMMELT LAUNCHED a series of what he calls Imagination Breakthrough projects, investing more than \$5 billion in 80 initiatives that take GE into new markets, product areas, and industries. He told his managers to connect with consumers, learn to take risks, and place big bets. GE is already reaping major benefits from previous bold moves. Its latest quarterly profit surge of 24% is due in part to reframing the idea of power generation. The company expanded it from gas turbines to wind and solar, which paid off.

Also like Lafley, Immelt is pushing to change the corporate structure to spur

creativity. He appointed Beth Comstock to the newly created position of chief marketing officer in charge of generating innovation and creativity. He's bringing in many of the same design and innovation gurus Lafley uses so effectively. And GE being GE, has its new acronym, CENCOR, for its innovation process.

Call it CENCOR, creativity, or imagination, GE is doing it. Comstock recently held a "China market discovery" session, bringing together some 90 people for three days. Outside innovation consultants pushed the envelope. "We forced the group to get outside itself, to look at China with new eyes," says Comstock. The effort appears to be working: Sales to China soared in the latest quarter.

What is the methodology of the new design strategy that Lafley, Immelt, and others are adopting? The basics are simple. They start with observation—going out and directly seeing customers shop at malls, families eating in restaurants, or patients being treated in hospitals. Gap Inc. and others have found that social shopping—in pairs and threesomes—is the norm in its stores, so it's making dressing rooms bigger. Trying out lots of ideas fast by making models or videos (prototyping) is the next step. This lets managers visualize concepts, make decisions on which to improve and which to discard, and launch products faster.

Storytelling is very important. Designers have found that placing a potential new product within an emotional story that connects with consumers raises the chances of success. The design of the new line of MINI_motion watches and driving shoes, for example, captures the story of the Mini Cooper's cool urban driving experience. It's about the driver, not the car.

The final ingredient in design strategy is building an organizational process that does these things all the time. This kind of change can be wrenching for a company, but the payoffs are enormous. "You can build a kind of culture of routine innovation through design thinking," says one of the pioneers of the new discipline, David Kelley, co-founder of IDEO and head of the new D-school at Stanford.

So watch out, consultants. A whole new cadre of advisers is out to lead CEOs into the Creativity Economy. They speak a language different from Establishment consultants' (more anthropology, less technology) and advise differently (more hands-on workshops, fewer company-wide surveys). Mainstream consultants, such as BCG, are building their innovation expertise, but they'd better hurry.

The new gurus have emerged from the

Myths

REALITY

■ **Not always.** Some companies have that kind of creative cultural DNA, and others don't. Innovation audits often reveal hidden strengths in areas such as brand recognition and service delivery.

■ **Not at all.** Creativity is an essential part of the innovation process, but metrics, discipline, focus, and leadership are just as crucial.

■ **Failing to innovate is far more expensive.** This is especially true at a time when technology and information are being commoditized and globalized.

■ **Maybe.** Companies that have innovation architecture in place can handle many concepts at one time. Most don't and would do better to focus on fewer, bolder ideas that shift product strategies, reframe brands, and meet consumer needs.

■ **You can measure your way to mediocrity.** The right financial hurdle rates and other metrics are essential but they are only part of a larger innovation process. Design strategies such as early prototyping and customer observation are as important as measurement for innovation productivity.

depths of the late '90s meltdown and the shock of Asian competition to show CEOs a path beyond the Knowledge Economy to an even higher-value-added business model. They say they have found a way to play a high-margin game in a low-priced world, a means of differentiating products in a commoditized marketplace and a methodology for staying ahead of Asian rivals. They are the keepers of creativity in

a world awash in technology, the champions of innovation in a globe drowning in commodities. Meet seven of them on page 76 and many more on our new site.

There's a lot of talk about America becoming a 97-pound weakling. But the naysayers don't get the strength inherent in a truly Creative Economy. This revolution has barely begun, and building creative, innovative companies is the great

task ahead. In the pages that follow and online, you'll find the tools, methods, and metrics to help make it happen. II

-With Robert Berner in Chicago and Diane Brady in New York

For reprints of this Special Report:
reprints@businessweek.com or
(212) 512-3148. (minimum order 1,000)

Bringing Innovation to The Home of Six Sigma

Jeff Immelt is creating a stir at General Electric Co. Through the years, GE has produced a string of superlative results using precision management tools such as Six Sigma and by giving execs rich incentives for efficiency. Now Immelt wants to turn GE's buttoned-down ranks into a legion of innovators with a flair for creative thinking. He spoke with *BusinessWeek's* Diane Brady about his experiences and his expectations.

You talk about making GE more innovative. What do you really mean?

We need to be focused on where customers are going. We should be playing into major demographic trends and the needs of our customers.

How do you get there from here?

We want to make it O.K. to take risks and do things that aren't just going to [produce results] this quarter. One way I do that is with the Imagination Breakthroughs ("The Immelt Revolution," Management, BW-Mar.28).

Is this simply a matter of giving people permission to take risks?

[In part], but we're also working on a whole new set of leadership traits. We went through a comprehensive internal effort and came back with five traits we now use at our training center in Crotonville [NY.]. They are: external focus, decisiveness, imagination and courage, inclusiveness, and domain expertise. This is the foundation of how you become more innovative.

Do you have to do more than that to make your managers truly creative?

Creativity is important. It's an ingredient in



innovation, but it's not the only thing. We're trying to stimulate new thinking by bringing people in from the outside, such as [design consultants] IDEO, to make sure we're not too internally focused.

What do you feel the outsiders have brought to the company?

They try to approach growth in unique ways

by looking at unmet needs of customers. We do creativity sessions with them and things like that. It gives us some new, nonlinear thinking, which is something I've picked up from A.G. Lafley at Procter & Gamble.

Is Lafley a particular inspiration to you?

We used [P&G] as a benchmark. He has that innovation gym [to train managers and test new ideas] and he has found new ways to blow some of the walls out and do a better job of integrating ideas from the outside.

Is it a big leap from a Six Sigma culture focused on productivity and quality to an innovation culture?

I look at Six Sigma as a foundation on which you can build more innovation. I don't think every manager can do both [Six Sigma and innovation], but I don't need every manager to do both.

Why do you think innovation is more important today for GE, or for business in general?

We're leaving a period, particularly in the late '90s, where global economic growth of the developed world was pretty robust. It's just choppy now. You need new ways to boost growth.

Do you think managers have to become more like designers, or masters of creativity?

What I tell people is that we have to develop new leaders for growth—people who are passionate about customers and innovation, [people] who really know markets and products. [Traditional] professional management isn't going to give you the kind of growth you need in a slow-growth world.

Do you feel you've become more innovative in the past few years?

[It all] goes back to people—those who want to take swings. I tell people that you have to view these [new leadership] traits as critical to your long-term development. You have to change...or else you don't have a great future at this company.

A CREATIVE CORPORATION TOOLBOX



The Problem

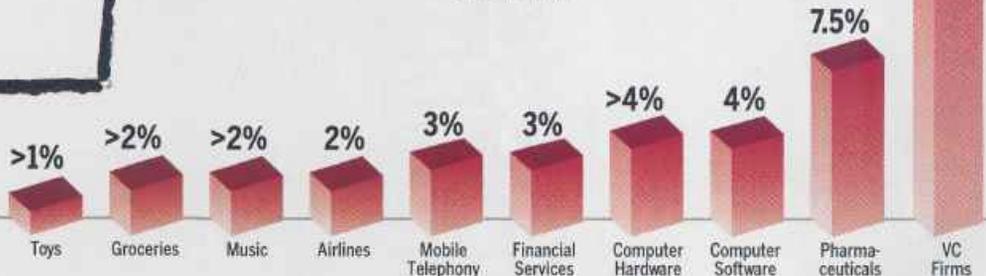
Companies in the U.S., Europe, and Japan are struggling with innovation. **Despite spending huge sums on R&D, most corporations have dismally low levels of innovation productivity.** The brutal truth is that up to 96% of all new projects fail to meet or beat targets for return on investment. New cutting-edge research from the Doblin Group, Peer Insight, BCG, Jump, Stone Yamashita Partners, and other innovation consultants can provide useful tools to build creative corporate cultures and boost innovation "hit" rates.

Innovation's Dismal Success Rate

All industry innovation initiative success rate: **4.5%**

Note: ROI hurdles were set by companies themselves and varied from one to another.

Data: Doblin Group



The Solution

A radical approach to innovation based on **new research in design strategy and innovation methods and metrics can dramatically improve innovation** success rates, sometimes by a factor of 10 or 20. Innovation consultant Doblin Group has many of the most sophisticated tools.

STEP ONE: CHANGE THE GAME

There are at least 10 types of innovation. Using them in combination can change an entire product category. Apple's iPod wasn't just "cool," it broke the existing MP3 mold by excelling in at least seven types of innovation (red bullets). It did less well in three others.

■ BUSINESS MODEL

Negotiated a way for musicians, music publishers, and Apple to profit from downloads. Apple also gains from sales of iPods.

■ NETWORKING

Partnered with publishers to sell music online legally and worked with accessory producers to extend iPod's market and brand.

ENABLING PROCESS Built interfaces and software for people to connect with Apple that can be emulated.

CORE PROCESS Based core strengths on culture and talent that are open to rivals smart enough to match them.



■ PERFORMANCE

Created a line of hardware that is easy to use, wonderful to see and touch, and is clearly differentiated in the marketplace.

PRODUCT SYSTEM Has a seamless web of iPod hardware and software, iTunes Internet commerce, and retail Apple stores-plus, a world of accessories.

SERVICE Has great Genius Bars but there are problems servicing iPod batteries.

CHANNEL Made a breakthrough deal to sell music legally over the Web and build a multichannel network to sell hardware on the Web, electronics, and Apple stores.

BRAND Bolstered Apple's image with great interface and intuitive iTunes music software.

CUSTOMER EXPERIENCE Shapes powerful emotional responses by allowing people to download, store, and share personal music collections.

Data: Doblin Group

STEP TWO: KNOW YOUR COMPETITIVE INNOVATION LANDSCAPE

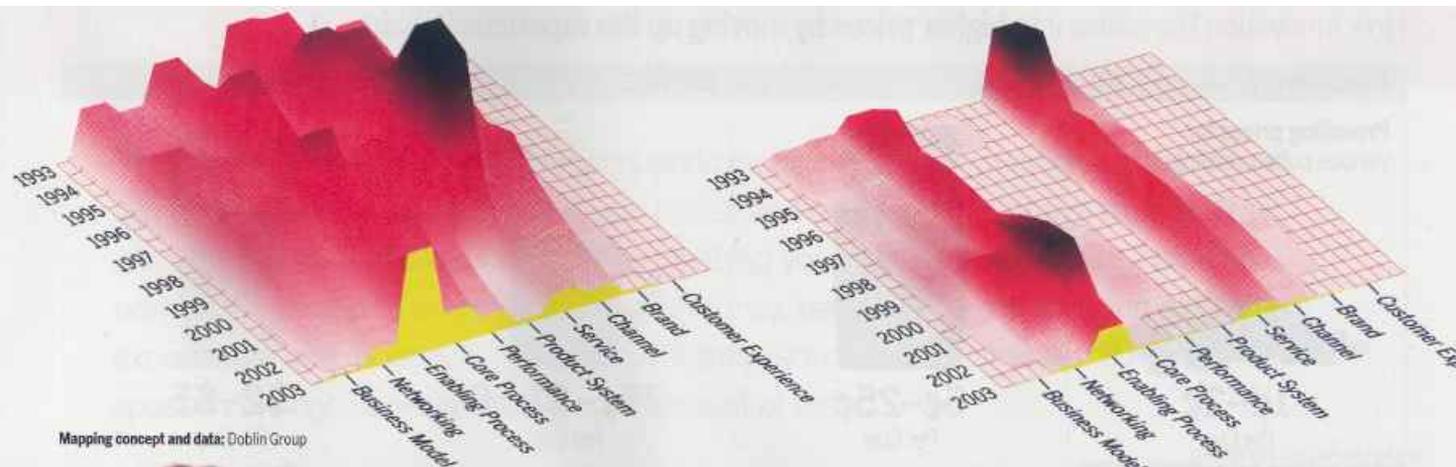
Companies tend to compete in the same innovation arenas, especially in new products and services. But investing in overlooked areas, such as better consumer experiences, can often yield a greater return on innovation investments. Building **innovation topographies can reveal patterns** in your industry and show you where you can differentiate.

Computers & Peripherals

■ **Big peaks show the level of investment in one kind of innovation is extremely high.** In the PC business, everyone is slugging it out in hardware and systems. Going elsewhere offers more opportunity.

Passenger Airline Services

■ **Valleys and flat areas reveal overlooked areas of innovation.** Jet Blue succeeded by focusing on the traveler's experience. Consumer experience may be the most promising place for innovation.



Mapping concept and data: Doblin Group



The Mistakes

They vary from industry to industry but the most common **innovation failure comes from companies that confuse...**

■ R&D with innovation.

Hiking R&D spending doesn't automatically raise innovation success. Cutting internal R&D spending and seeking new ideas from around the globe can often be more productive.

■ Consumer marketing with consumer understanding.

Marketing has few tools for ferreting out the unarticulated needs of consumers.

■ Design with design strategy.

Traditional design is about style and color but the new design strategy provides tools for fashioning products, visualizing the future, and understanding customer emotion.

■ Innovation with technology.

Tech-centric innovation generates feature-ridden products that can frustrate consumers. Consumer-centric innovation generates products that people crave.

■ "Out-of-the-box" thinking with innovation.

Creativity is key to innovation but must be part of a broader discipline that includes management incentives, CEO leadership, and financial hurdles.

The Lessons

After years of integrating information technologies and expanding R&D spending, **companies are frustrated by how little progress they have made.** Procter & Gamble and General Electric are leading the way to the next phase. Here are some of the key lessons from their efforts:

■ Open up.

Corporations need to end their "not-invented-here" cultures by linking their R&D work to online networks of scientists and overseas labs; bringing in outside design and innovation expertise; sending top execs out shopping for the products and services their companies sell.

■ Lead the revolution.

CEOs should lead a cultural revolution inside their companies; personally championing the goal of raising innovation success rates, and hiring designers and scattering them to work with engineering, marketing, and branding units.

■ Change managers.

Only some managers trained in Six Sigma and other traditional business process methods will "get" the new thinking about design and innovation. Companies should be hiring more anthropologists and social psychologists and fewer engineers.

■ Change the incentives.

Link bonuses to new ideas, customer satisfaction, and top-line revenue. Tie spending to big breakthroughs in projects that identify new markets, sell to new customers, and create new brands.

■ Turn the innovation process upside down.

Innovation in the '90s meant developing new technologies in the lab, designing a product and tossing it at consumers. Innovation today means observing consumers to discover what they want, then satisfying them with new products.

The Rewards

How innovation translates into **higher prices by moving up the experience chain.**



Data: Pine and Gilmore, *The Experience Economy*, 1999



MEET THE INNOVATION GURUS

Epiphanies for hire: When it comes to out-of-the-box thinking, these are the Magnificent Seven

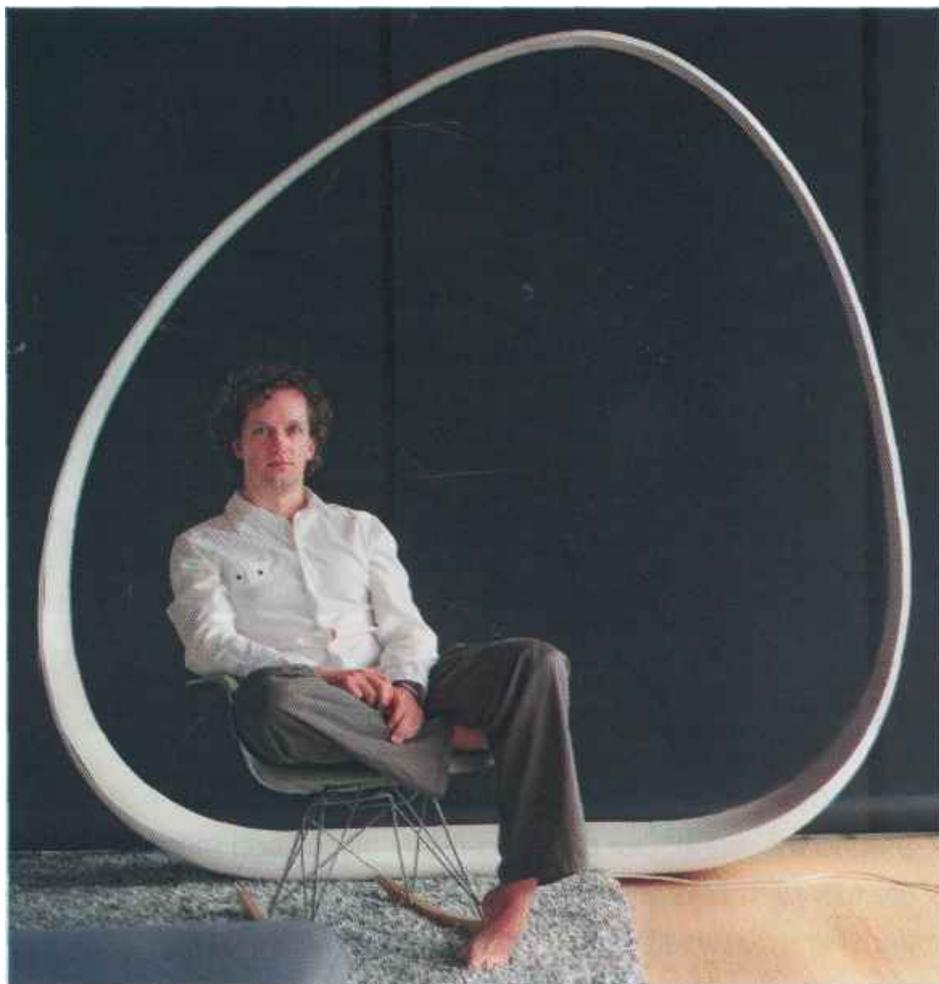
THE BRAND WIZARD

Yves Behar

fuseproject
San Francisco

YVES BEHAR IS THE BRAND Man. In a world where consumers are choking on choice, technology is pervasive and at times overwhelming, and 24/7 advertising turns people off, Behar's business is creating what he calls "powerful, emotional brand stories that connect to 21st century consumers." A well-designed product and the story it tells "create better connections to consumers than 30-second TV spots," he argues.

So companies often call on him when their brands need a major boost. One of his best-known interventions of late has been for Birkenstock, the '60s icon of granola-ness that was slipping among Behar's own thirty-something generation. He kept the sandals' signature features—the comfortable, posture-enhancing footbed and natural cork-and-latex sole—which exemplified the ergonomic and ecological values that have kept Birkenstock customers loyal over decades. But he also added running-shoe-type technology and designed a new line of 21st century leather and suede shoes and boots. Then he came up with a name for the new brand line: The Architect Collection. He designed the logo, picked the ad agency for the line, and even designed another brand extension—colorful "Birkies" for the beach. In story terms, Behar reinterpreted Birkenstock's original message of reliability and "greenness" to a new generation of ecology-minded people.



BMW turned to Behar when it wanted to create a series of auto-related products to go with its retooled classic, the Mini Cooper. Behar told his clients that the real mini story was not about the car, it was about the driver's lifestyle. The MINI brand, he says, is about mobility, maneuverability, speed, and fun. So Behar designed a line of lifestyle gear—a watch, shoes, a jacket—and named it MINI_motion. "Consumers want products that tell stories, have magic, and inspire," he says.

THE TRANSFORMER

Beth Comstock

General Electric Co., Fairfield, Conn.

BETH COMSTOCK CALLS HERSELF "A LITTLE BIT OF the crazy, wacky one" at corporate headquarters. And it's an apt description when you realize she works at General Electric Co. Comstock, 44, is charged with transforming GE's culture, famously devoted to process, engineering, and financial controls, to one that's more agile and creative. Chairman and CEO Jeffrey R. Immelt tapped the former communications chief to become GE's first-ever chief marketing officer almost three years ago. The job came with a critical twist: the goal of driving innovation through the company's 300,000-plus ranks.

"Creativity is still a word we're wrestling with," Comstock concedes. "It seems a bit undisciplined, a bit chaotic for a place like GE." More comfortable territory is the term "imaginative problem-solving"—encouraging people to think "what if?"—yet always with the aim of driving growth. One of Comstock's first moves was to bring in anthropologists to audit GE's culture. They came back with praise for GE's famous work ethic but noted that employees wanted more "wow"—more discoveries from the company founded by Thomas Edison.

Comstock has a role whose importance is spreading throughout Big Business—that of innovation champion. She began by studying best practices at companies such as Procter & Gamble, FedEx, and 3M. She brought in a raft of creativity



consultants, futurists, and design gurus to lead sessions with different operations. Their names were jolting for GE types: Play, a Richmond (Va.) group that helps execs think differently, and Jump, based in San Mateo, Calif., which researches how people use things. GE is expanding its army of designers to bring businesses closer to customers. And Comstock is staging "dreaming sessions" where Immelt, senior execs, and customers debate future market trends. Comstock concedes some managers view the workshops as a waste of time. "We have a long way to go," she says. But for GE, there's no turning back.

By Diane Brady in New York

MR. METRICS

Larry Keeley

Doblin Group, Chicago

AS CO-FOUNDER AND PRESIDENT OF DOBLIN Group, Larry Keeley is one of a handful of people who are inventing a new science of innovation. Keeley's three-dimensional innovation landscapes are not only unique and beautiful to look at but are also tremendously valuable for any company looking for innovation opportunities.

Keeley has done pioneering work in deconstructing different kinds of innovation, building diagnostic measures of innovation, and analyzing the root causes of innovation failure. That places him in the small pack of consultants that chief executives invariably call on.

Paradoxically, the man who might be known as Mr. Metrics because of his focus on measurement also happens to be the keenest critic of managing solely by numbers. "Innovation

cannot be done formulaically," says Keeley. "Putting the right numbers into the wrong innovation process won't give you results."

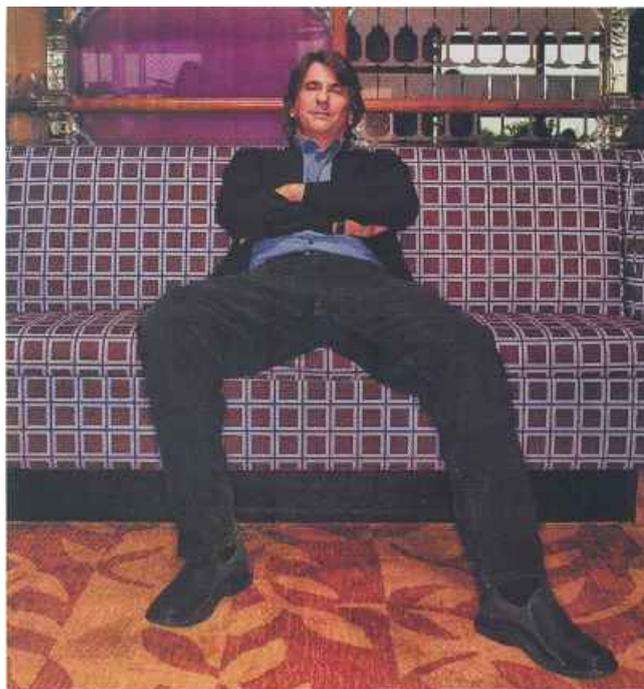
He tells companies that, first of all, they need to discover and understand their own "innovation DNA"—that is, what they do best—before they can move on to building systems that improve their innovation "hit rates." He tells companies that the really big hits are often the products that innovate in not one but two or three or more "innovation spaces."

Further, Keeley tells them to focus their brainstorming. "The worst mistake is to have everyone running off

generating a million ideas," says Keeley. "The goal is to focus on a very few very bold ideas that tend to work, as opposed to many, many ideas all over the place that tend to fail."

Keeley wants to build a science of innovation effectiveness. To that end he is a member of the board at the Chicago-based Institute of Design at the Illinois Institute of Technology, where he teaches graduate design strategy courses. Keeley also lectures at Northwestern University's Kellogg School of Management and at the University of Chicago.





THE EXPERIENCE GUY

David Rockwell

Rockwell Group, New York •

AT A TIME WHEN COMPANIES OBSESSIVELY TALK about the "consumer experience," architect David Rockwell is emerging as the Experience Guy. His Rockwell Group has designed an extraordinary array of projects in recent years, including W Hotels, Montifiore Childrens' Hospital, stage sets for Broadway musicals from *Hairspray* to the Elvis Presley-inspired *All Shook Up*, the Mohegan Sun gambling casino, special lounges for kids to drink Coca-Cola, Gap stores, toy emporium FAO Schwarz, some 32 restaurants, the Academy Awards Kodak Theatre in Hollywood, a giant mall in New Jersey, a Canyon Ranch spa, condos in Miami, and the interior of the new JetBlue Airways terminal at John F. Kennedy International Airport.

For Rockwell, who grew up around the stage (his mother started a community theater group when he was six), every job is about "telling a story and emotionally connecting with people," as he puts it. For each project, he then goes out and talks to people who will be using the space, and constructs the narrative about their lives. He then storyboards the themes he uncovers and tests them out.

For the hospital, his teams talked to dozens of kids about what it's like to be a patient. Then Rockwell built age-specific floors, with rooms children could customize with music and colors. Since families accompany sick kids, rooms were made bigger. Artists were hired to do different playrooms. And there are large murals of what the Bronx (where the hospital is located) looked like 1 million years ago.

Rockwell always builds a bit of magic into his spaces. He uses materials and lighting to create the effect of being in a theater. To Rockwell, designing an environment means shaping an experience that lasts in the memory. Most companies would call that brilliant branding.

DNA DECODER

Sohrab Vossoughi

Ziba Design, Portland, Ore.

THE FIELD OF DESIGN RESEARCH IS MOVING fast, but if you look far enough out to the edge, you just might see Sohrab Vossoughi, founder and president of ZIBA Design. Vossoughi is taking traditional product design methods (he began by designing computers and printers for Hewlett Packard Co.) and transforming them into new ways of creating deeply emotional consumer experiences.

ZIBA's research for Logitech on mobile-phone headsets, for example, showed that most people prefer wearable technology they can touch and intuitively use, don't need to fuss over as they rush through the day, and which looks good near the face. Vossoughi then thought up a range of stories about types of potential users—the Road Warrior, the Teen Talker, the Family Connector—and tested them out. That led to "Logi," as Vossoughi calls the company, to come out with a variety of new headsets.



Vossoughi is also moving Logitech into PC speakers. "You first help your client discover their own corporate DNA and then extend that DNA into other brand experiences," says Vossoughi. In fact, he believes that patenting intellectual property may soon be out of date. "When you create new experiences out of your own DNA and no one else can do it, that is your protection," he maintains. "You don't need legal protection."

ZIBA's client research is moving beyond observing what people do to why they do it in the first place. Vossoughi terms this TCI, for trend and consumer insight, and he has cultural and psychiatric anthropologists delving into the subject of motivation. One important insight is a product of that research: Relevance and authenticity are increasingly important to consumers, especially young ones.

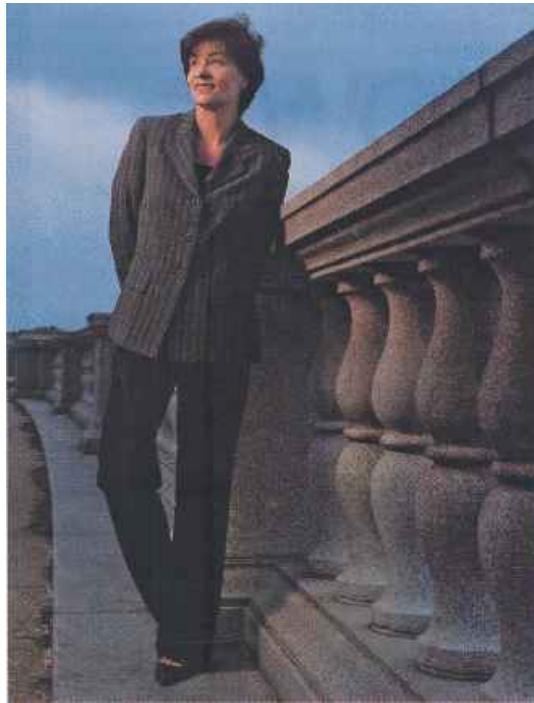
Vossoughi is using his research discoveries to build what he calls "branded environments," signature spaces for FedEx and Umpqua Bank. He is also helping KitchenAid with strategy. If you want to know just what type of cook you are and why, just ask Sohrab Vossoughi.

THE COACH

Jeneanne Rae

Peer Insight,
Alexandria, Va.

JENEANNE RAE IS THE doyenne of service innovation. With her Harvard University MBA and seven years at IDEO, the Palo Alto (Calif.) design-strategy powerhouse, Rae is carving out a niche in showing service companies how to innovate. She co-founded Peer Insight LLC, a service innovation consortium, in which members pay a fee for Rae to run innovation audits. Using Peer Insight as a confidential intermediary (it alone knows the origin of specific information), members then share in the successes and failures of the group and benchmark their progress. With Rae acting as an innovation coach, the goal is to help service companies understand how to shape their consumers' experiences. She uses design principles to rethink company strategies. Peer Insight so far has signed up seven companies as charter members—Diebold, Hewlett-Packard, MasterCard International, Siebel



Systems, Siemens, Starwood Hotels & Resorts, and York International. Peer Insight has also done innovation research for 37 other companies, from FedEx to T-Mobile.

According to Rae, there is little innovation in services. Service companies have good brand and marketing people, she says, but there's no one in charge of innovation. "They're like tech companies," adds Rae. "They come up with new things and just launch them at consumers. They don't get that it's all about interacting with customers first and then giving them great experiences." One exception is Starwood, which has a Chief Creative Officer.

Rae also serves as an adviser to Procter & Gamble Co.'s Claudia Kotchka and other innovation leaders. And her course, Developing New Products and Services, at Georgetown

University's McDonough School of Business, is hugely popular. Rae, along with most of these gurus, will be a columnist for *BusinessWeek's* online Innovation & Design portal. There she will discuss the 17 disciplines that can be used as an innovation scorecard for service companies.

THE ACADEMIC

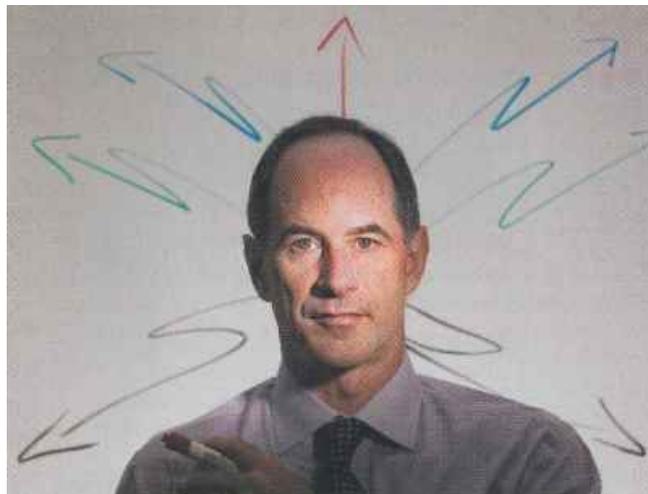
Roger Martin

Joseph L. Rotman School of Management,
University of Toronto, Ont.

ROGER MARTIN IS THE LEADING PROPONENT OF design thinking at business schools. He doesn't mean merely teaching students about the importance of cool-looking stuff. He sees value in the designer's approach to solving problems—the integrative way of thinking and problem-solving that can be applied to all components of business. Martin's take on the future of management is shooting through innovation circles: "Businesspeople will have to become more 'masters of heuristics' than 'managers of algorithms.'" What does that jargon mean? Martin is saying that corporate managers will have to become flexible problem-solvers rather than sophisticated number-crunchers if they're to be creative and successful. "With the forces of competition today, it will make the

difference between success and mediocrity," Martin predicts.

Martin launched his first design-based course in 2003 in partnership with Ontario College of Art & Design. It's an elective, but by the 2006-2007 school year, Martin plans to make design thinking a part of Rotman's core curriculum, which students will be required to take. Eventually, the dean would like to offer a rich design program that will lead to a new MBD degree—Master of Business Design—as an alternative to the standard MBA. In an era of vast change, the "administration" of business isn't enough. You have to design businesses. "Business education is too inclined to teach you to accept trade-offs," he says.

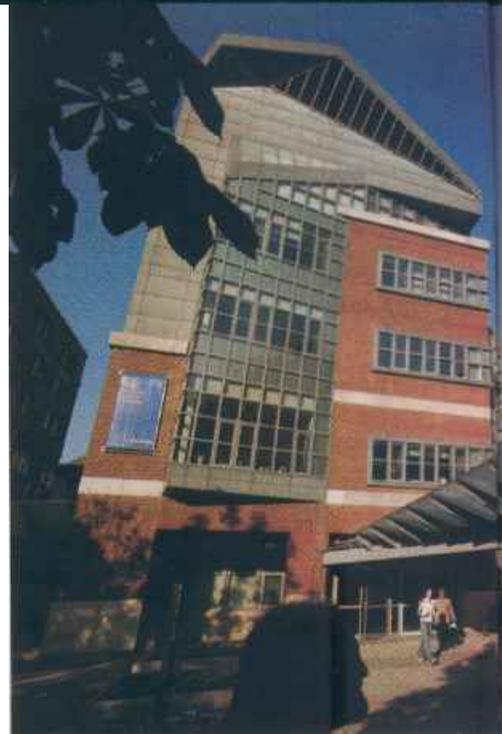


A Canadian native and graduate of Harvard Business School, the 48-year-old Martin left a position as co-head of a consulting firm to take the Rotman post. He's working with Patrick Whitney, director of the Institute of Design, and David Kelley, co-founder of design consultancy IDEO and head of the new Stanford Design School, to create a new design-based curriculum that can be used in business schools. Martin practices what he preaches: He advises Procter & Gamble Co. chief A.G. Lafley, among other chief executives.

By Robert Berner in Chicago

TOMORROW'S B-SCHOOL? IT MIGHT BE A D-SCHOOL

Business schools are hooking up with design institutes—or starting their own



JUST A FEW DAYS INTO AN executive management course at Stanford University's Graduate School of Business, Margaret J. Miller, a senior economist at the World Bank, found herself sitting at a table wearing heavy leather gloves and vision-obscuring glasses, trying to figure out how a person with a physical impairment might experience the process of wrapping a gift. The goal of the five-day Managing Teams for Innovation & Success (MTIS) course: to see the experience through new eyes. "With a few basic tools—just craft materials, really—people could actually start to think about things from different points

of view and be creative," says Miller.

Where to send managers to learn how to be creative is becoming an important issue for top executives. After all, the MBA is a degree in "administration," and in a business world where creativity and innovation are at a premium, skills in administering organizations have less value.

With MBA enrollments down, B-schools are striving to become more relevant to prospective students. To remain leading suppliers of management talent to corporations, consulting firms, investment banks, and other business, B-schools are being forced to adapt to a changing world. "More and more, companies find themselves involved in exploration," says Mar-

garet A. Neale, a professor of organizational behavior and leader of the MTIS program at Stanford. "To be competitive, you have to be more creative."

Mixed Success

STANFORD IS DOING just that by establishing a new Institute of Design that will teach design thinking and strategy to business, engineering, and design students. This "D-school," founded by Stanford engineering professor David Kelley, also founder of design powerhouse IDEO, may well give Stanford an edge over its B-school rivals as innovation becomes more valued for corpora-

The **B-Schools** Who Get It, Plus the New D-Schools

The core offerings of nearly all B-schools are not meeting the growing demand for creative, innovative managers. Here are some of **the best courses and programs in creativity and innovation**, including two new "D-school" alternatives:

EXECUTIVE EDUCATION

STANFORD Managing Teams: Execs attend a five-day, \$7,900 course on design strategy as a management tool; includes trip to design consultancy IDEO.

MIT Product Design: A traditional four-day, \$6,800 course that includes managing design and ideas.

WHARTON Design, Innovation: Execs join European designers in Milan and Copenhagen for a five-day, \$9,250 class focusing on the importance of good design.

MBA ELECTIVE COURSES

BERKELEY Design as a Strategic Business Issue, Managing the New Product Development Process, Customer Experience

GEORGETOWN Developing New Products and Services

HARVARD Managing Product Development

MICHIGAN Integrated Product Design

NORTHWESTERN Integrated Product Design

INSEAD/ART CENTER COLLEGE OF DESIGN Strategies for Product and Service Development, Consumer Behavior



(TOP TO BOTTOM) PHOTOGRAPHS BY PETER SIBBALD; OLIVIER LAUDE

ROTMAN The tend to offer a single Toronto school is elective or executive at the forefront of M B A class in con-design.oriented ve ntional product education design

Harvard Business School's course in Managing the Innovation Process, Northwestern's Product Development & Design, and Georgetown's Developing New Products & Services are all extremely popular among MBA students. And an elective at the University of Michigan's Stephen M. Ross School of Business, for example, has had students developing improvements to cars for years.

Problem-finding

B-SCHOOLS ARE now trying to go beyond the single elective in product design by linking up with design schools. One of the best programs in the country is the Integrated Product Development track for MBAs at Carnegie Mellon University's Tepper School of Business. Designers, engineers, and marketers mix it up in the classroom to develop prototypes of useful products that are commercially viable. MBAs more accustomed to financial analysis and bottom-line issues are pushed to think more creatively. "Innovation is critical in management. You have to innovate to compete and survive," says Carnegie Mellon Dean Kenneth B. Dunn.

At the Haas School of Business at the University of California at Berkeley, Sara L. Beckman, a senior lecturer in operations, teaches a course called Design as a Strategic Business Issue. Beckman has teamed up with IDEO, Berkeley's School of Engineering, and California College of the Arts to teach a course called Man-

aging the New Product Development Process. For many MBAs, it's the first time they have ever worked with non-business people on projects. "The analytical MBA focuses on solving a problem, but the design process focuses on problem-finding," says Beckman.

That's the premise behind the University of Pennsylvania's Wharton School executive program—Design, Innovation & Strategy—scheduled for this fall in Milan and Copenhagen. The course, part of the Wharton Fellows program that brings together mostly middle managers from around the world, was conceived by a group of senior executives. Their rationale? Design is often the path to innovation.

INSEAD's joint program with the Art Center College of Design in Pasadena, Calif., one of the leading car design schools in the world, brings design students to Europe to team up with business students in various courses. Then they go to Pasadena, where students present their designs.

Many companies are going directly to top design firms to set up customized executive-education sessions. Most of these involve getting the CEO and his top managers out shopping for the things their company sells. It's a game of "be your customer" that, despite its simplicity, can have enormous impact. Samsung has learned a great deal about design by attending various sessions at IDEO and other consulting firms.

Learning how to be creative is one of the great managerial challenges ahead. It was once obvious where managers should go for training. That's no longer the case. **II**

—By Jennifer Merritt and Louis Lavelle

tions striving to increase their revenues.

The Institute of Design (ID) at the Illinois Institute of Technology, the other top D-school in the U.S., is already sending many of its grads to big businesses. "More than half our graduates are going into strategy, marketing, and research in companies, not just design," says Patrick Whitney, director of the ID. Large consultancies such as McKinsey & Co. are hiring recent grads.

Business schools have been trying to inject design thinking into their curriculae for well over a decade, with mixed success. Many have worked with the Corporate Design Foundation in Boston to develop design courses. These B-schools



MBA PROGRAMS

CARNEGIE MELLON Integrated Product Development track for MBA students.

ROTMAN SCHOOL OF MANAGEMENT

Pioneer in teaching design thinking and strategy. Leader in developing new B-school curriculum for design strategy and innovation.

RENSSELAER Design faculty co-teaches many classes.

WESTERN ONTARIO Nontraditional approach urging students to learn business from all angles.

"D-SCHOOL" ALTERNATIVES

« STANFORD INSTITUTE OF DESIGN

Multidisciplinary teaching of design thinking, methodology, and strategy focused on developing an innovation culture. The newest and most ambitious school, led by IDEO co-founder David Kelley.

ILLINOIS INSTITUTE OF DESIGN

A leader in developing innovation metrics and design-strategy curricula. Nine-month program, leading to a master of design methods degree, for midlevel managers without a design background. Combines innovation, user insight, and organizational strategy.