

The Chameleon Innovator

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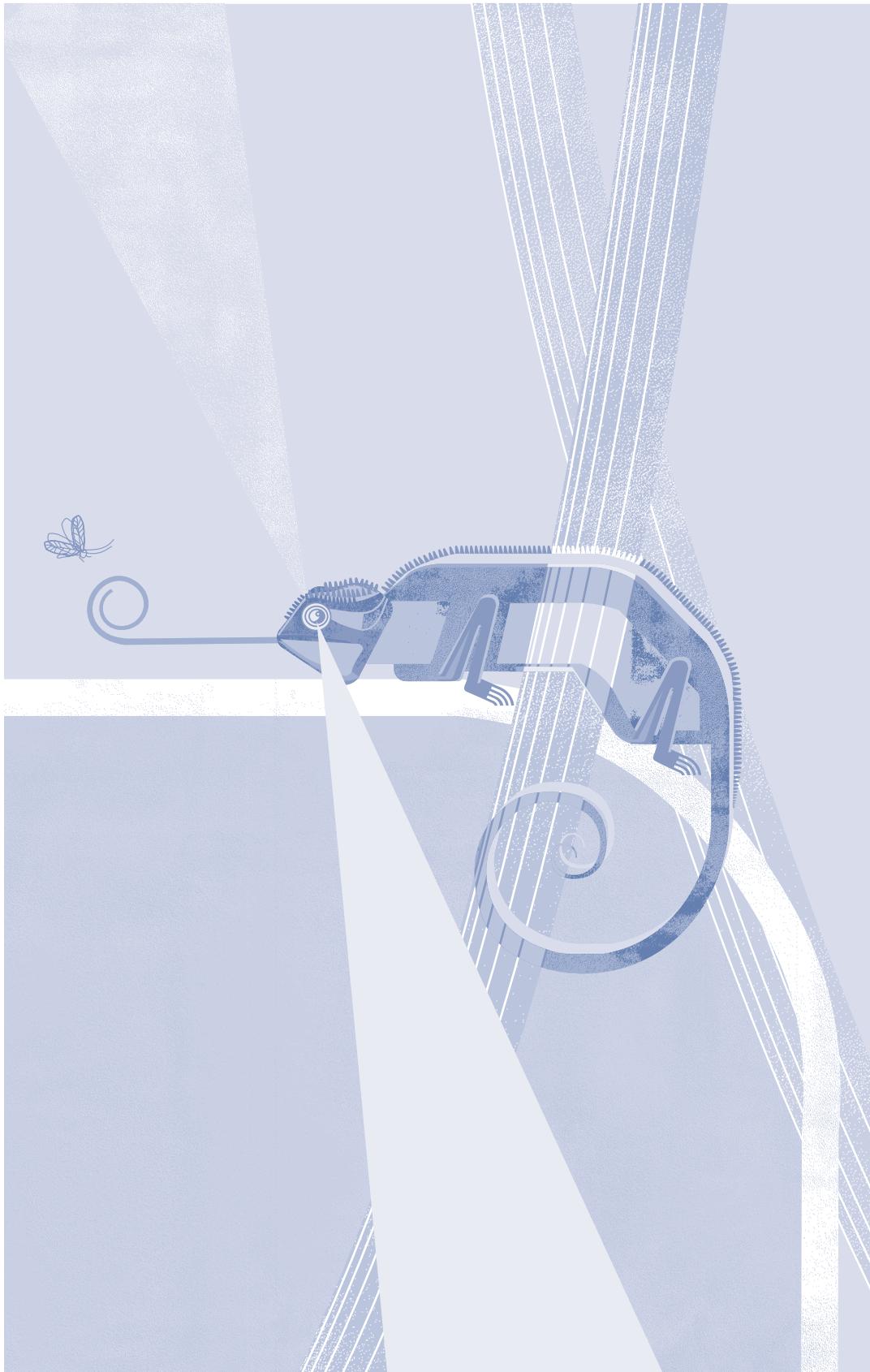
The innovation process still brings out confusion and frustration in many executives. Any escape from this quandary should start with abandoning the model of fractional innovation and embracing the chameleon innovator model. In this article the author describes the three tyrannies a company needs to overthrow to become a chameleon innovator: the customer's voice, core competencies and best practices.

While not nature's most aesthetically pleasing, the chameleon definitely is a beautifully ambidextrous creature. Just consider the triple flip-flop it is capable of:

- It can rotate and focus its two eyes separately to observe two different objects simultaneously. This gives it a full 360-degree arc of vision around its body. When prey is located, both eyes can be focused in the same direction, giving sharp stereoscopic vision and depth perception.
- It can sit motionless for hours and wait. When prey passes by, it is capable of extending its sticky and incredibly long tongue (sometimes longer than its own body length) at a rapid rate. It can thus catch prey that it would never be able to reach using locomotive speed.
- It can change its skin color, not only to adapt to its surroundings but also under the influence of its mood, for instance in fights with rivals. Unlike evolutionary adaptations, such as the factors that gave a zebra its stripes, this skin color change is immediate and reversible.

Don't panic - this article is not a lesson in biology. We simply want to use the chameleon as a metaphor for excellence in innovation. For us, an excellent innovator knows how to integrate into one organism a triple flip-flop capability, just like the chameleon:

- An excellent innovator comfortably handles both **radical and incremental innovation**. It creates brand new products and markets through continuous business reinvention, while incrementally defending and maintaining viable positions in its established businesses. Like the chameleon, it can keep an eye on distant and near fields at the same time.



- An excellent innovator effectively combines **studied patience and lethal speed**. It takes the long-term view, positioning itself strategically and waiting for the golden market opportunity to be within reach, while surprising its blissfully ignorant competitors. Like the chameleon, it alternates between position strategies and movement strategies.
- An excellent innovator flexibly exploits **internal and external capabilities**. It redefines company boundaries to include all complementary resources and capabilities outside the firm needed to win an opportunity. It uses an open platform to facilitate cooperation with the outside world. Like the chameleon, it either fuses with its environment or stands out from it, changing apparent identity to seduce a mate, mislead a predator or fend off a rival.

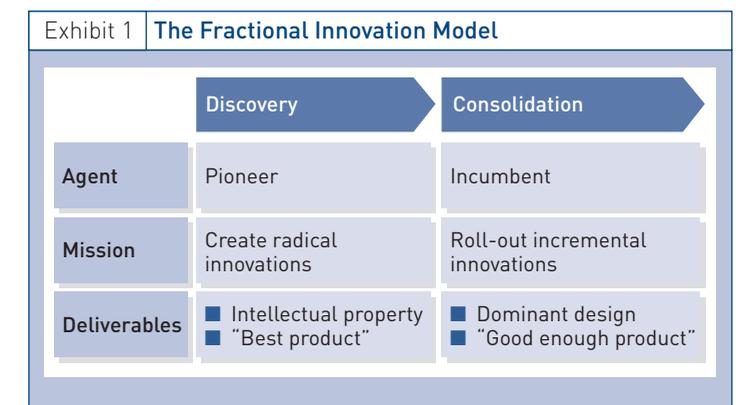
It is chameleon innovators who will prevail on the innovation battlefield of the future. In this article, we will explain what it means to be a chameleon innovator. For once, do not expect a pragmatic how-to cookbook. This article is meant to be an inspirational, if not provocative, essay about a new way of thinking about innovation management. Its purpose is not to instruct about tools you can use tomorrow morning, but to impart a state of mind that should permeate your entire organisation.

The Demise of Fractional Innovation

Let's start by contrasting the "chameleon innovator" model with the one that is still prevalent in many quarters, which we label "fractional innovation". The latter presupposes that the skills, mindsets and attitudes for creating radically new markets differ from those needed to grow and consolidate them. Consequently the fractional innovation model assumes that the primarily young, small and agile pioneer companies that innovate radically are almost never those that will exploit the innovation and harvest its benefits. On the contrary, it assumes that primarily older, bigger and efficient established companies have the skills needed for seizing the market niches developed by the pioneers and scaling them up into mass markets. In other words, in this model the world is divid-

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ed between pioneers that discover, i.e. create radical innovations, and incumbents that consolidate, i.e. roll out incremental innovations (see Exhibit 1).



There is no reason why one and the same company should not have the ambition and be able to successfully integrate both incremental and radical innovation - that is, to be a chameleon innovator.

There is growing evidence that the fractional innovation model is falling apart. Companies such as Ciba Vision (extended-wear lenses), Boston Scientific (stents), Genentech (biotechnology), Google (search engines) and Intel (biological computing) demonstrate that you can both discover and consolidate. They contradict the "fast-second" strategy advocated by the fractional innovation model. Why be a fast second when you can be fast first? In other words, there is no reason why one and the same company should not have the ambition and be able to successfully integrate both incremental and radical innovation - that is, to be a chameleon innovator¹.

Even more importantly, successful companies may not have a choice but to become chameleon innovators. Consider the following transformations:

- Emerging countries such as China and India are changing some of the rules of the innovation game, for instance by developing products specifically targeted at low income consumers. For example, prosthetic limbs are in high demand in India but inaccessible at a cost of US\$ 7,000 to US\$ 8,000 each. Jaipur Foot has designed one that costs less than US\$ 30².

¹To see a very recent book still supporting the "fractional" theory, see: Markides, C., Geroski, P.A., 2005, Fast Second-How Smart Companies Bypass Radical Innovation to Enter and Dominate New Markets, Jossey-Bass, 2005.

²Prahalad, C. K. 2005, The Fortune at the Bottom of the Pyramid, Wharton School Publishing.

- The shortening of product life-cycles continues unabated. According to a recent study, the products that accounted for 70 percent of profits in 2005 will be obsolete by 2010.
- The average lifetime of businesses is shrinking. For example, the average lifetime of established healthy companies in the Standard & Poor's list has shrunk from 75 to 15 years in the period from 1930 to 2000³.
- The number of patents is growing exponentially. It took one century to register the first million patents. The second million was reached in only 50 years, and we should top the third million within just five years.⁴

In the wake of shifts like the ones described above, playing the game with the rules of the past is likely to be a losing proposition. But turning yourself into a chameleon innovator doesn't happen overnight. Let's have a look at what it takes.

The Ascent of Chameleon Innovator

Many established companies that are good at incremental innovation find it hard to embrace radical innovation too. They prefer to stay within a comfort zone bounded by existing technologies and business models. For example, Genrich Altshutter in his monumental study⁵ of hundreds of thousands of patents showed that 77 percent were at level 1 or 2 on a 1-to-5 scale, with level 1 being “a simple improvement of an existing technical system”, level 2 “an invention that only required knowledge from different areas within the industry relevant to the system”, and the very infrequent level 5 dealing with innovations as “discovery of new phenomena.”

³Foster S., Kaplan S. 2005. Creative Destruction: Why Companies That Are Built to Last Underperform the Market –and How to Successfully Transform Them, Currency Doubleday.

⁴Institute for the Future 2002. “Shape Shifting World of R&D”, SR-773, Sept.

⁵See: Rantanen, K. and Domb, E. 2002. Simplified TRIZ. New Problem Solving Applications for Engineers and Manufacturing Professionals, St. Lucie Press.

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In order to become a chameleon innovator, a company needs to overthrow three tyrannies: the customer's voice, core competencies and best practices. To begin with, the need to forgo customer input, so to speak, may be the most disheartening premise of a successful radical innovation journey. Granted, listening to the customer is the fundamental driver of short-term business performance. But doing so also narrows eyesight and leads to fatal inertia when markets or technologies shift. Today's customer preferences have no inherent predictive value for tomorrow's markets. Radical innovation asks for a level of risk acceptance that is foreign to companies hooked on innovation-on-customer-demand.

The second tyranny is that of “core competencies”. As new technologies and markets are proliferating exponentially, any strategy wedded to established core competencies reduces a company's access to entirely new fields of opportunities. The general rule of competence-based strategy is: when company mission conflicts with innovation, the latter is almost always the loser. Competence-based strategy leads a company to defend exhausted experience or move into no man's land. The chameleon innovator, on the contrary, continuously reshapes and adapts his competence configuration to changing opportunities. Instead of focusing on firm-specific competencies, he combines internal talent with assets existing in the outside world. He adopts a dynamic and open concept of specialisation.

The third tyranny is that of “best practices”. In order to discover radical innovation opportunities, a company should not only acquire the competencies of the future but also weed out those of the past. In particular, it needs to overrule so-called “best practices” with “next practices.” This is not easy when leaders have blessed best practices as knowledge jewels that shall be protected and handed down to new generations of professionals and managers. Promoting “next practices” is first and foremost a job of communication and persuasion. Leaders should combine an inspiring vision of the future, a realistic portrayal of the present and a selective depiction of the past to make people rise to the challenge of transformation.

The chameleon innovator is ambidextrous. He manages to discover opportunities, incubate solutions and secure market dominance (see exhibit 2). He knows how to integrate these three phases into a fluid process.

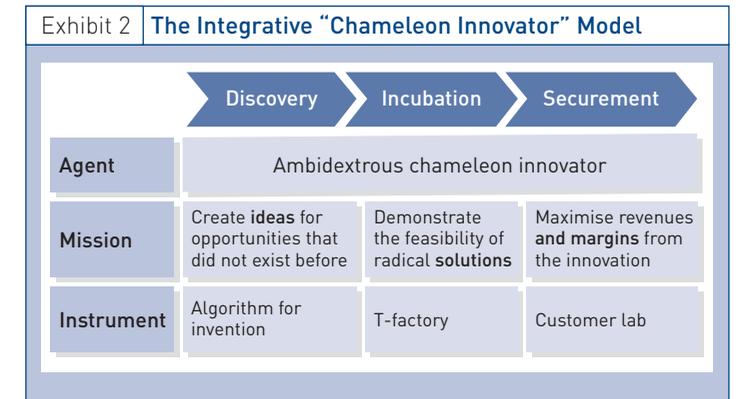
Once a company has overthrown these three tyrannies, it will know how to solve the two equations of incremental innovation and radical innovation simultaneously. That of incremental innovation reads as follows: “Value equals Benefits minus Price.” Obviously this equation is about value and benefits to the customer. The customer is the independent variable and the very driving force of the chameleon innovator when eyeing incremental innovation. In this case, the company works as a customer lab, using a demand-driven process, predominantly reactive and impulse-based. The mission of the lab is to reach zero latency between customer desires and company delivery, i.e. to generate, keep and maintain satisfied customers who might otherwise shift allegiance to competitors. Its motto is: “Necessity is the mother of invention.”

The equation of radical innovation reads quite differently: “Margin equals price minus cost.” This equation is about margin and cost to the shareholder. When eyeing radical innovation, the chameleon innovator explores and exploits technological possibilities for orientating the company in its search for disruption of current businesses or creation of entirely new businesses. In this case, the company works as a technology factory, using an offering-driven process, predominantly proactive, flow-based and customer-independent. The mission of the factory is to accelerate the performance of new technology as it is scaled up. Its motto is: “Invention is the mother of necessity.”

So far, we have explained what you should abandon to become a chameleon innovator, and what you will be able to do when you are one. In the next section, we describe what integrated processes you have to set up in order to act as one.

The Integrative Innovation Process

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Discover opportunities

The objective of the discovery phase is to create ideas for opportunities that did not exist before. For example, to enjoy at home the ambience of drinking freshly drafted cool beer as you would with friends in a pub - recognise the Heineken BeerTender? To enjoy the privilege of privately listening to your preferred music anywhere - recognise the Sony Walkman? To enjoy the convenience of giving instructions to your computer in the same way as you point at your dish of choice on a menu card to a waiter in a foreign restaurant - recognise the Apple mouse?

Some ingenious ideas like the three listed above may be quirks of fortune. The chameleon innovator, however, doesn't rely on fortune alone. He adopts a process-based approach to creativity, banishing the perception that creativity arises exclusively from unpredictability and serendipity. He knows that creativity can be learnt, replicated and diffused in order to transform inventive problem-solving from an individual art into an orchestrated social practice. He doesn't take for granted the fact that only eight out of a thousand ideas developed eventually achieve commercial success. He experiences the truth in what Genrich Altshuller, the father of TRIZ, a method for promoting creativity, used to say: “An algorithm does exist for invention.”

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The algorithm for creativity contains various instructions:

- Identify and select a meaningful number of innovation champions;
- Train innovation champions in advanced problem-solving methods such as structured brainstorming, Synectics, MFO, MMA, DOE, TRIZ, ZMET, EI and CM⁶;
- Grow a structured and organised community of practice for innovation;
- Extend the community of practice beyond narrow organisational, geographic and cultural boundaries.

Incubate solutions

The objective of the incubation phase is to demonstrate the feasibility of radical solutions for the opportunities discovered in the previous phase. To do so, the chameleon innovator sets up a technology factory (“T-factory”). The T-factory industrialises the art of thinking by mastering three skills.

First, the T-factory makes extensive use of technology roadmaps. These roadmaps show mega-trends and the directions in which technology and research are evolving. They signal opportunities for and threats from technology disruptions. They alert us to the exhaustion of technology performance. They enable the company both to take advantage of openings no one else may have spotted and to change course before getting stuck in a dead end.

Second, the T-factory is adept at experimentation. It makes extensive use of modelling and simulation tools to test numerous variations of a potential solution quickly and economically. Any industry - be it the manufacture of cars, integrated electronic circuits or pharmaceuticals - faces constant pressure to reduce product development lead times and contain new product development expen-

⁶MFO = Method of Focal Objects, MMA = Method of Morphological Analysis, DoE = Design of Experiments, TRIZ = Teorija Reschenija Izobretatelskich Zadac (Russian for “Theory of Inventive Problem Solving”), ZMET = Zaltman Metaphor Elicitation Technique, EI = Envisioning Innovations, CM = Choice Modelling

ditures. Advanced modelling and simulation tools allow achievement of these two objectives at the same time.

Third, the T-factory actively engages in expeditionary marketing, which is the commercial side of experimentation. As soon as a concrete radical solution is identified, the T-factory makes some low-cost, fast-paced incursions into various niches for the company to test the waters and claim ownership.

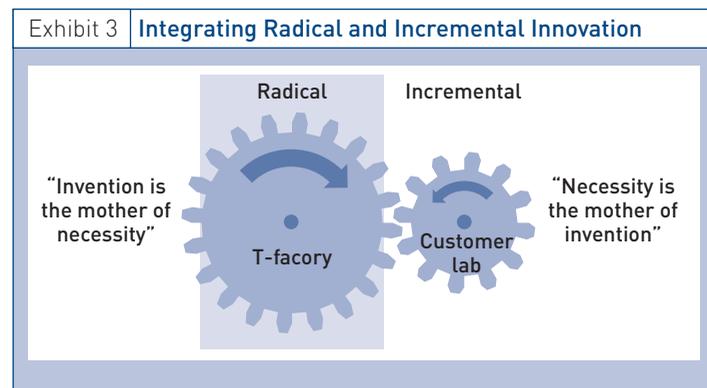
Secure market dominance

The objective of the securement phase is to maximise the revenues and margins from the radical innovation over its entire commercial lifetime. To do this, the chameleon innovator sets up a customer lab. Whereas the T-factory served to incubate the radical technology-driven solution in the first place, the customer lab serves to deliver incremental customer-driven products. By multiplying the offspring of the original radical innovation, the customer lab dispirits imitators, wards off competitors and secures the allegiance of customers.

In order to achieve this objective economically, the customer lab expediently expands the company's reservoir of capabilities. It connects with the best partners around the world. It becomes the nexus in a global network in order to work with more resources than the company can possibly organise internally.

In the securement phase, the chameleon innovator single-mindedly focuses on stretching the supremacy of his original radical innovation for as long as possible. By doing so, he maximises the cash flows enabling investment in discovery and incubation. In that pursuit, he may also set up ventures and spin-offs (for example: Procter & Gamble started Emmperative, a marketing software company to deliver advanced solutions to help Fortune 1000 companies bring ideas and products to market better and more efficiently; TRW licensed its technical knowledge about radio communication to launch RF Micro Devices; Intuitive Surgical, which was spun off from Sarnoff in 1995, is now the global technology leader in robotic-assisted minimal invasive surgery). He demonstrates that

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it is both possible and necessary to create radical innovations and roll out incremental innovations. Radical and incremental innovation are like interlocking cogwheels, with the former creating the traction (see Exhibit 3).

In the final section of this article, we describe an organisational solution for bringing to life the chameleon innovator inside you: the Accelerated Innovation Centre.

The Accelerated Innovation Centre

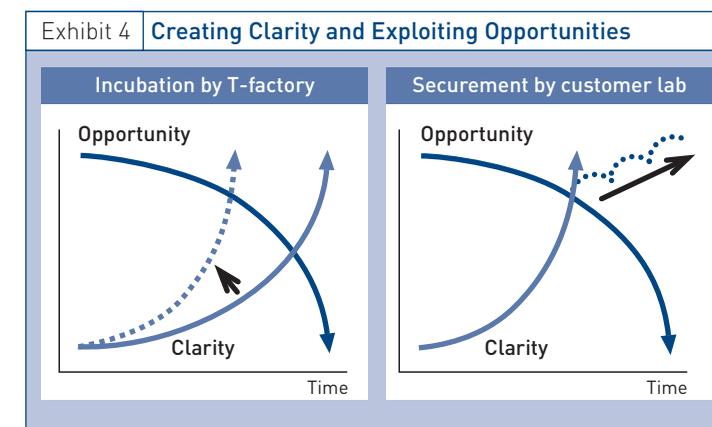
If a company really wants to open its gates to integrative innovation as we are suggesting, the first radical challenge has to do with designing a new organisational architecture. Traditional architectures have two common traits. First, companies paradoxically continue to see innovation as a job predominantly residing within the walls of the R&D function. Even though innovation tops executives' priority lists and is known to be a multi-disciplinary endeavour, practically nobody has yet created an "innovation box" within its organisation structure. Second, companies still conceive their organisation as a secluded, functional combination of internal competencies rather than an open platform that facilitates accelerated social learning and cooperation with the outside world.

The chameleon innovator addresses this radical challenge head-on by setting up an Accelerated Innovation Centre as the nexus in a network. The Accelerated Innovation Centre houses both the T-factory and the customer lab. It is a unified entity under single management that provides all the resources and capabilities for discovering

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opportunities, incubating solutions and securing market dominance. It is also the connecting pad with the outside world for mobilising specialised complementary partners.

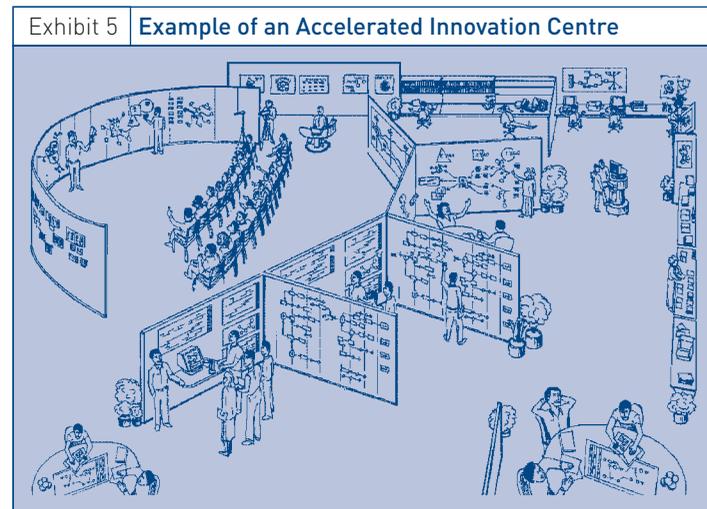
Acceleration is the key performance indicator for the chameleon innovator. Acceleration is about creating clarity and exploiting opportunities faster than competitors can. The Accelerated Innovation Centre enables acceleration by unifying and connecting otherwise fragmented capabilities into one entity. By the same token, it continually rejuvenates and prolongs the opportunity (see Exhibit 4).



The Accelerated Innovation Centre is the central node in the network that connects the chameleon innovator with outside capabilities. Networking is critical in all phases of the integrative innovation process.

There are various ways to shape the Accelerated Innovation Centre. At a number of companies we have helped set up a virtual one, linking together physically dispersed groups of people. At others we have managed a temporary one, in which a series of intensive workshops are used to create scenarios and breakthrough solutions. One particular example of an Accelerated Innovation Centre is shown in Exhibit 5. It is designed to facilitate and support collaborative work. It is equipped with modular movable furniture, multi-media tools, a multi-disciplinary research library and a prototype lab. It is designed to host a large community of teams (30 to 200 people) working in parallel streams and converging when needed in a suitable "radiant room" to exchange ideas, play the devil's advocate and cooperate in designing, building, testing and analysing innovative solutions.

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outside capabilities. Networking is critical in all phases of the integrative innovation process. Networks of individuals are forming extended communities of practice across organisational and geographical boundaries. These individuals are not the “lone inventors” of former times. Nowadays innovators are highly educated professionals, scattered around the globe, contributing to solutions the distinctiveness of the local cultures from which they come. They share an unprecedented talent for cross-cooperation, thanks to a common language, protocols and support tools of the internet era.

InnoCentive® is one example of the above. Created by Eli Lilly in 2001, it is a web-based community matching scientists to relevant R&D challenges facing leading companies from around the globe. It provides a powerful online forum enabling companies to reward scientific innovation through financial incentives. Companies contract with InnoCentive as “Seekers” to post R&D challenges. Scientists register as “Solvers” to review challenges and submit solutions online. The Seeker company reviews submissions and selects the best solution. InnoCentive issues the award amount to the winning Solver.

Insights for the Executive

More than 20 years ago, Peter Drucker remarked that “the only thing that matters is innovation.” Today the innova-

tion process still brings out confusion and frustration in many executives: confused by unfamiliar rivals beating them to market with radical innovations, and frustrated by the inability to tap effectively into a global wellspring of creative talent.

Any escape from this quandary should start with abandoning the model of fractional innovation and embracing the chameleon innovation model. The chameleon innovator comfortably handles both radical and incremental innovation, combines studied patience and lethal speed and exploits internal and external capabilities. For the chameleon innovator, innovation is an integrative process of ambidextrously discovering opportunities, incubating solutions, and securing market dominance.

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