

The Great Dying

A memo to market
dinosaurs, and lessons
for industry leaders

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“Just as some species become extinct in nature, some new financing techniques may prove to be less successful than others.”

The remark was made to the U.S. Congress in September 2007 by Anthony Ryan, assistant Treasury secretary. Only when we know the true magnitude of the current financial crisis will we be able fully to appreciate the significance of his words.

Analogies between finance and evolution are in themselves nothing new. “The survival of the fittest” is a phrase that aggressive traders like to use. “It’s Darwinian out there” is a stock utterance by hedge fund managers after an especially tough week. Back in November 2005, a conference hosted by Goldman Sachs was entitled “The Evolution of Excellence.”

Yet, as became clear at that gathering, when financial practitioners use such terms they seldom understand just how apt they are. A long-run historical analysis of the development of financial services, going all the way back to the days of Charles Darwin, strongly suggests that evolutionary forces are as much at work in

the realm of money as they are in the natural world.

The big question for our time is: are we on the brink of a “great dying”—one of those mass extinctions of species that have occurred periodically in the history of life on earth, such as the Cretaceous-Tertiary crisis that killed off the dinosaurs? It is a scenario that many biologists have reason to fear, as man-made climate change wreaks havoc with natural habitats around the globe. A great dying is also a scenario that financial analysts should worry about, as another man-made disaster—the subprime mortgage crisis—works its way through the global financial system.

Mutation and Selection in Financial History

The notion that Darwinian processes may be at work in the economy was raised by Thorstein Veblen, the Norwegian-American economist best known for his “Theory of the Leisure Class,” in 1898. There has been an academic journal devoted to the subject for the past 16 years, though most economists remain skeptical about the applicability of Darwin’s ideas in the economic sphere. The analogy is in fact surprisingly good in the case of the financial services industry, which has many of the defining characteristics of a true evolutionary system:

- “Genes,” in the sense that certain business practices perform the same role as genes in biology, allowing information to be stored in the “organizational memory” and passed on from individual to individual or from company to company when a new one is created
- The potential for spontaneous “mutation,” usually referred to in the economic world as innovation and primarily, though by no means always, technological
- Competition among individuals within a species for resources, with the outcomes in terms of longevity and proliferation determining which business practices persist

The financial services industry closely resembles an evolutionary system in the natural world.

- A mechanism for natural selection through the market allocation of capital and human resources and the possibility of death in cases of underperformance, in other words “differential survival”
- Scope for “speciation,” sustaining biodiversity through the creation of wholly new “species” of financial institutions
- Scope for extinction, with species dying out altogether

Financial history is essentially the result of institutional mutation and natural selection. Random “drift” (innovations/mutations that are not promoted by natural selection, but just happen) and “flow” (innovations/mutations that are caused when, say, American practices are adopted by Chinese banks) play a part. There can also be “co-evolution,” when different financial species work and adapt together (like hedge funds and their prime brokers).

But market selection is the main driver. Financial organisms are in competition with one another for finite resources. At certain times and in certain places, certain species may become dominant. But innovations by competitor species, or the emergence of altogether new species, prevent any permanent hierarchy or monoculture from emerging. Broadly speaking, the law of the “survival of the fittest” applies. Institutions with a “selfish gene” that is good at self-replication (and self-perpetuation) will tend to endure and proliferate.

The analogy is, of course, not perfect. When one organism ingests another in the natural world, it is just eating, whereas in financial services mergers and acquisitions can lead directly to

mutation. Among financial organisms, there is no counterpart to the role of sexual reproduction. Most financial mutation is deliberate, conscious innovation rather than random change. Indeed, because a company can adapt within its own lifetime to change going on around it, financial evolution (like cultural evolution) may be best described not as Darwinian but Lamarckian, after the French biologist who contended that an individual organism could acquire new and heritable traits. Still, the resemblances outnumber the differences—and evolution certainly offers a better model for understanding financial change than any other we have.

Rudolf Hilferding, the German socialist, a century ago predicted an inexorable movement toward more concentration of ownership in “financial capitalism.” The conventional view of financial development does indeed see the process from the vantage point of the big survivor. In the successful company’s official “family tree,” numerous small companies are seen to converge over time on a common “trunk”, the present-day conglomerate—the kind of giant “überbank” that Hilferding imagined would ultimately take over the entire financial system.

This is precisely the wrong way to think about financial evolution. Over the long run, financial innovation begins at a common trunk. Over time, the trunk branches outward as new kinds of bank and other financial institution evolve (Exhibit 1). The fact that a particular institution successfully devours smaller rivals along the way is more or less irrelevant. In the evolutionary process, animals eat one another, but that is not the driving force behind evolutionary mutation and the emergence of new species and sub-species.

The point is that economies of scale and scope are not always the driving force in financial history. More often, the real drivers are the process of speciation—when new types of company are created—and the equally recurrent process of “creative destruction” —whereby weaker companies die out or, more commonly, get “eaten.”

Take the case of retail and commercial banking, where there remains considerable “biodiversity.” North America and some European markets still have highly fragmented retail banking sectors. The co-operative banking sector has seen the most change, with high levels of consolidation (especially following the crisis of the 1980s surrounding the U.S. savings and loan industry) and most institutions moving to shareholder ownership. But the only species that is now close to extinction in developed countries is the state-owned bank, as privatization has swept the world.

In other respects, the story is one of speciation—the proliferation of new types of financial institution—which is just what we would expect in a truly evolutionary system (Exhibits 1 and 2). Many new monoline financial services companies have emerged in commercial banking, especially in consumer finance (for example, Capital One). A number of new boutiques now exist to cater to the private banking market. Direct banking (by telephone and Internet) is another relatively recent and growing phenomenon throughout the developed world.

Likewise, even as giants have formed in the realm of investment banking, new and nimbler species have evolved and proliferated. Although what many recognize as the first hedge fund was established as long ago as 1949, their emergence as big players in global financial markets is a relatively recent phenomenon. In 1992 there were just 400 hedge funds, with \$50 billion of assets under management. By the end of 2006 the number had increased more than 20-fold and assets under management by a factor of nearly 30. And by the second quarter of 2007 there were 9,767 such funds, with \$1,740 billion under management.

Thanks to leverage, the estimated gross investments of the five largest funds amount to around \$100 billion. Altogether, hedge funds now account for between one-third and a half of all trading in the U.S. and U.K. equity and bond markets.

Bio-diversity in the Financial Services Phyla

These exhibits tracks the evolution of retail and commercial banking, investment banking, and fund management and insurance—the three main “phyla” within the financial services sector. The thickness of each bar roughly illustrates the relative size and importance of that particular species in terms of the number of firms, their assets, and revenues.

It is often assumed that the most important trend in retail and commercial banking has been toward consolidation. However, the exhibits make it clear that considerable “bio-diversity” remains. An example of movements in the competitive landscape is the emergence and retreat of bancassurance. It evolved as a push by retail banks to leverage their branch networks in the distribution of non-traditional retail banking products—in this case, insurance. The merging of banks and insurers was largely a response to looser financial services regulation, though the model later turned out to be less successful than many had hoped, and bancassurance franchises became absorbed by universal, or full-service, commercial banking organizations.

Exhibit 1 The evolution of retail and commercial banking

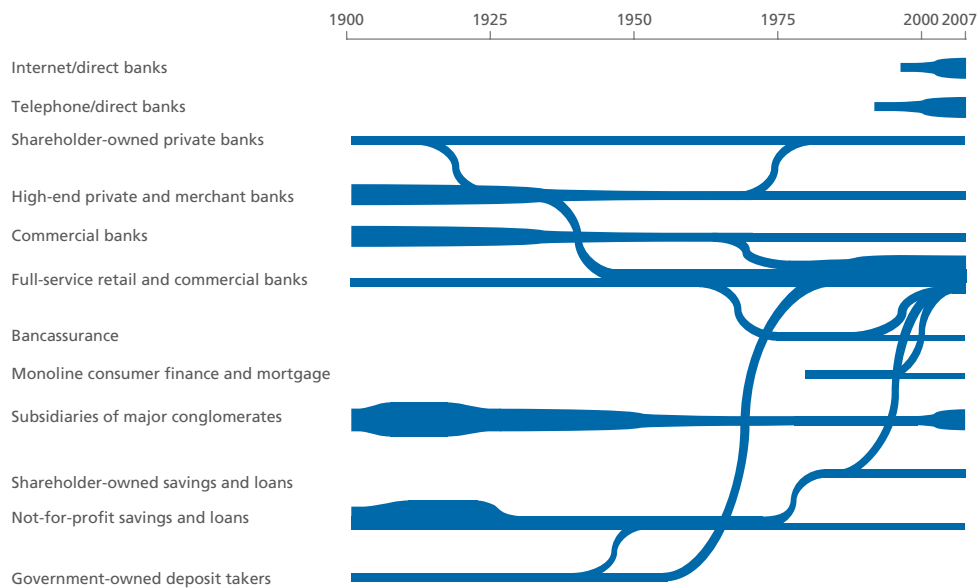
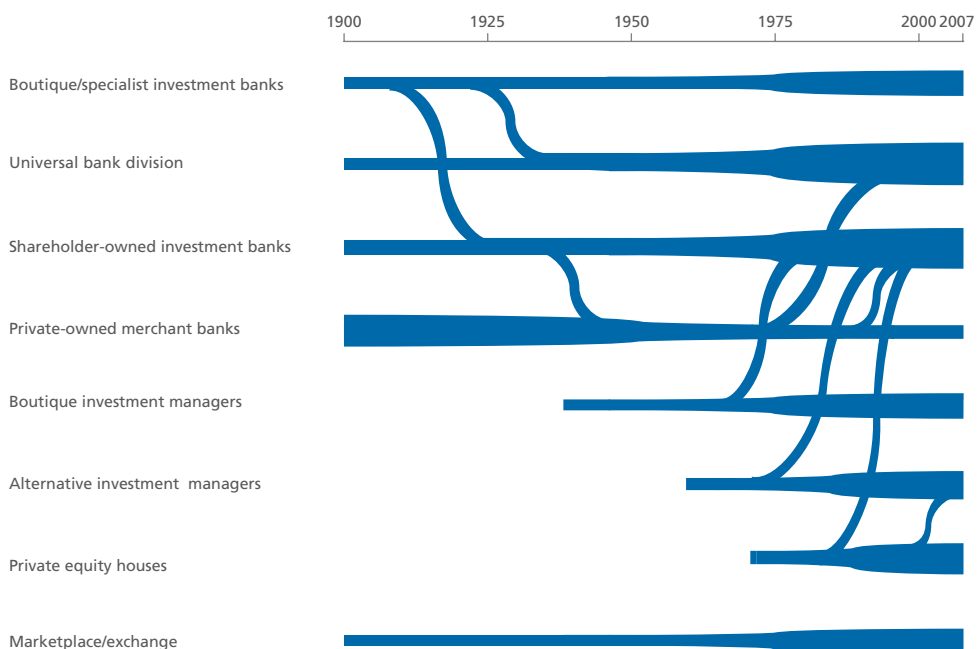


Exhibit 2 The evolution of investment banking and investment management



The problems of weakened banks present opportunities for big hedge funds and sovereign wealth funds.

Meanwhile, there has been a somewhat smaller surge in the number of private equity partnerships and the assets they manage, while the rapidly accruing hard currency reserves of exporters of manufactured goods and energy are producing a second generation of sovereign wealth funds.

Not only are new forms of financial institution proliferating; so too are new forms of financial asset and service. In recent years, investors' appetite has grown dramatically for mortgage-backed and other asset-backed securities. The use of derivatives has also increased significantly.

In evolutionary terms, then, the financial services sector appears to be in the midst of a kind of "Cambrian explosion," with existing species flourishing and new species (such as hedge funds and private equity partnerships) increasing in number. Yes, there are giants such as Citigroup. But, as in the natural world, their existence does not preclude the evolution and continued existence of smaller species.

Indeed, the very difficulties that arise as publicly owned companies become larger and more complex—the diseconomies of scale associated with bureaucracy, the pressures associated with quarterly reporting—make it very probable that new kinds of private firm will proliferate. What matters in evolution is not your size or your complexity. All that matters is that you are good at surviving and reproducing your genes. The financial equivalent is being good at generating returns on equity and generating imitators employing a similar business model. Both are easier for small firms.

Meteors Fall

Mutation and speciation have usually been evolved responses to the environment and com-

petition, with natural selection determining which new traits become widely disseminated. However, the evolutionary process has been subject to recurrent exogenous disruptions in the form of geopolitical shocks, financial crises, and regulatory interventions (or lapses). The Great Depression of the 1930s and the Great Inflation of the 1970s stand out as times of major discontinuity, with "mass extinctions" such as the bank panics during the 1930s and the Savings and Loan crisis in the 1980s.

Could something similar happen in our time? Certainly, the sharp change in credit conditions in the summer of 2007 created acute problems for some hedge fund strategies, leaving the funds vulnerable to redemptions by investors. But a more important feature of the recent credit crunch has been the pressure on banks.

More than \$180 billion of write-downs have so far been acknowledged by the world's leading banks, but it is widely assumed that as much as \$400 billion of subprime-related losses will eventually come to light. Pressure is mounting on some banks to bring the assets of other novel organisms—conduits and strategic investment vehicles—back onto their balance sheets. Yet the difficulty of pricing these assets in highly illiquid markets and the need to maintain capital adequacy are making this easier to say than to do. Some banks must sooner or later choose between increasing their capital and restricting their lending.

And what of the market for mortgage-backed securities? Recent events have certainly checked the hopes of those who believed that the separation of risk origination and balance sheet management would distribute risk optimally throughout the financial system. U.S. asset-backed issuance has collapsed. So has the issuance of collateralized debt obligations, another relatively novel financial life-form.

Nevertheless, the problems of the banks are simultaneously opportunities for some big hedge funds, particularly those that seized the

moment to go public when stock markets were buoyant, and for sovereign wealth funds, which are acquiring stakes in big-brand banks at what seem like bargain prices.

Regulators' Dilemma

There is one big difference between nature and finance. Whereas evolution in biology takes place in the natural environment, where change is essentially random, evolution in financial services occurs within a regulatory framework where, to borrow a phrase from anti-Darwinian creationists, “intelligent design” plays a part.

Sudden changes to the regulatory environment are rather different from sudden changes in the macro-economic environment, which resemble environmental shifts in the natural world. The difference is that there is an element of endogeneity in regulatory changes, since those responsible are often poachers turned gamekeepers, with a good insight into the way that the private sector works. However, the net effect is the same as climate change in biological evolution. New rules and regulations can make previously “good” traits suddenly disadvantageous. The rise and fall of the savings and loan institutions, for example, was due in large measure to changes in the regulatory environment in the U.S.

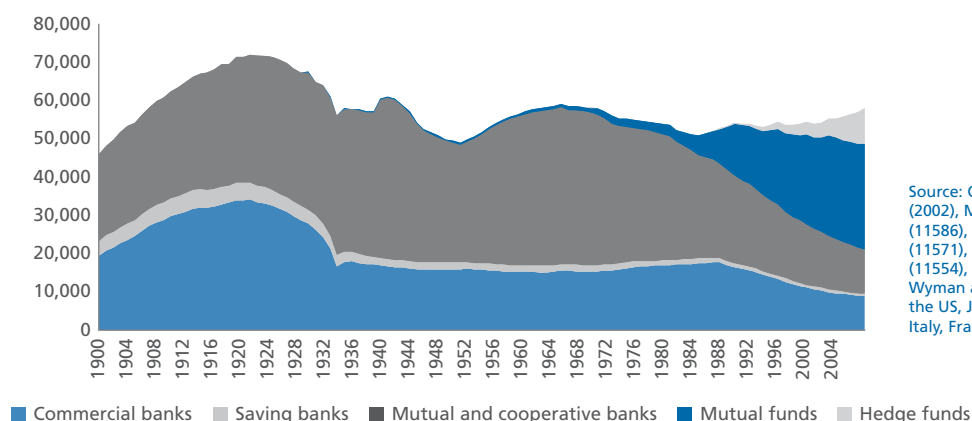
The primary focus of most financial regulators is to maintain stability within the sector,

thereby protecting the consumers whom banks serve and the “real” economy that the industry supports (Exhibit 3). Companies in non-financial industries are neither so fundamental to the economy, nor so critical to the livelihood of the consumer. The collapse of a leading financial institution, in which retail customers lose their deposits, is an event that any regulator (and politician) wishes to avoid at all costs, a fact of which the British authorities were painfully reminded by the run on Northern Rock, the mortgage bank.

An old question that has raised its head once again in recent months is how far implicit guarantees to bail out banks create a problem of “moral hazard,” encouraging excessive risk-taking on the assumption that the state will intervene if an institution is considered too big to fail—meaning too politically sensitive or too likely to bring a lot of other companies down with it. From an evolutionary perspective, however, the problem looks slightly different. It is, in fact, undesirable to have any institutions in the category of too big to fail, because without occasional bouts of what economist Joseph Schumpeter termed “creative destruction,” the evolutionary process will be thwarted. Japan’s experience in the 1990s stands as a warning to legislators and regulators that an entire banking sector can become a kind of economic dead hand if institutions are propped up despite underperformance.

Exhibit 3 Number of financial institutions in selected developed countries

Financial evolution is not primarily a story of concentration but of speciation, with new forms of services and institutions emerging to take advantage of subtle changes in the economic environment.



Source: OECD, Bundesbank, Davies (2002), Mura (115156), Duet (11586), Bätz-lazo (2004), Sheppard (11571), Pohl (11582), Torgerson (11554), Schiffer (11562), Oliver Wyman analysis. Countries included are the US, Japan, UK, Switzerland, Spain, Italy, France, and Germany

Every shock to the financial system must result in casualties. Left to itself, natural selection should work fast to eliminate the weakest institutions in the market, which typically are devoured by the successful. But most crises also usher in new rules, as legislators and regulators rush to stabilize the system and protect the consumer/voter. The critical point is that the possibility of extinction cannot and should not be removed by excessively precautionary regulation.

As Schumpeter wrote more than 70 years ago: “This economic system cannot do without the ultima ratio of the complete destruction of those existences which are irretrievably associated with the hopelessly unadapted.” Creative destruction, in his view, meant nothing less than

the disappearance of “those firms which are unfit to live.”

The coming months will determine how far, in terms of its economic impact, the current crisis is a true ice age as opposed to just a severe winter. It will also determine which among the world’s financial groups are the dinosaurs and which are the fittest mammals.❖

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Practical Lessons for Industry Leaders

The evolutionary theory of finance does not offer conventional lessons to CEOs, supervisory boards, and heads of strategy. The take-home message here is not simply grow or die, diversify or perish, stick to your core knitting or unravel—alluring though such simple mottos may seem. In this sidebar, we suggest some more profound lessons and apply them to a few of the problems that many industry participants currently face.

Lesson 1: Keep it natural.

“Natural evolution,” based on building incremental capabilities, markets, and businesses, works well and creates sustainable entities in a world that is inherently volatile and instable. This type of evolution can be through organic or non-organic growth, or even through spontaneous creation of a small, innovative fast-growth firm. By contrast, “forced evolution” —the type that creates a Frankenstein monster by bolting together unconnected entities with different DNA and metabolisms— invariably fails.

Another aspect of “keeping it natural” is to make sure your internal rules reflect the rules of the

real world. Too many financial services providers fall into the trap of managing their key resources according to esoteric internal lenses that drift far off the external world. If a wholesale bank does not differentiate bonuses greatly between superb and average producers, it will lose its best people because the market certainly makes such distinctions. If a payment processor deploys technologies that treat all customers as being the same as the “average” customer, it leaves the door open for many new entrants.

Finally, top management needs to be aware of “unnatural habitats” created by either too little regulation or the wrong type of regulation. These usually manifest themselves as attractive markets that are highly protected (banking supervisors who discourage foreign entry into a country), very high growth detached from fundamentals (subprime mortgages and consumer finance), or very low risk (countries where the state always bails out companies for political reasons). Such markets are decoupled from economic reality, and relying on them to guide a firm’s evolution usually results in institutional forms that are highly vulnerable to the removal of the market anomaly.

Lesson 2: Evolution does not wait for industrial plans.

With surprising conformity, financial services firms continue to define strategic visions and annually updated five-year plans. The idea is to carry out appropriate analysis that points to the optimal destination a few years out. In an evolutionary world, however, sustained superior execution beats the best-laid strategies every time. Your firm is in the middle of a journey and—since the end of the journey is too uncertain to be meaningful—evolving on the go is often the best strategy.

The most beneficial aspect of this lesson is that it avoids costly, even catastrophic, mistakes. Over the decades, elaborate, aspirational strategy-setting has frequently resulted in false destinations: retail banks trying to become global investment banks, wholesale banks becoming commodities traders, insurers becoming alternative asset managers with third-party clients, and many forms becoming “supermarkets.” If grounded in the reality of a natural evolutionary path, none of these expensive mistakes would have been made.

To make the most of the journey, learning (copying if necessary) and adaptation are most important. Continuous, stepwise innovations beat grand redesigns every time. That means finding the parts of your own businesses that provide real competitive advantage and learning from them how to perform better elsewhere. It means rewarding those that consistently deliver relative to market norms, rather than those that have great plans and presentations.

Along the journey, your firm will meet new life forms. They will have a different “DNA,” meaning different business cultures and different business models. Both behavioral adaptation and physical recombination can help you absorb their best features.

Lesson 3: Make yourself more attractive.

Both biological forms and financial services firms need the right type of resources to survive and prosper. Financial services firms have to attract and retain human talent, capital, customers, and techno-

logical assets. Too many financial services firms have completely undifferentiated messages for these different resources: “People are our most important asset,” “We run according to shareholder value principles,” “Your call is important to us.” Is your firm doing the right things to attract all three?

Talent, more than any other factor, has come to the fore in recent years, as companies have seen the power of human ingenuity create whole new markets that did not exist before. Several key “genes” in the adaptive firm are associated with talent management: Is our leadership attracting or deterring the best? Do we have a culture that promotes all the other value drivers (innovation, adaptability, discipline)? Do we over-reward under-performers and under-recognize superior performers in the name of “fairness”?

Capital is as indispensable as talent, but to be attractive to investors takes a different set of attributes. Unfortunately, the governance of many financial services firms has drifted off course to the extent that management priorities are mainly focused on job preservation and reward maximization rather than on shareholder value creation—and, crucially, there is no effective corrective action from the board of directors.

Perhaps the most fickle and elusive of all business resources is the customer. Customers, too, have largely been neglected and even systematically mistreated by many financial services providers. The mis-selling scandals in developed countries, the pyramid schemes in emerging economies, and generally low satisfaction rates among most retail customers speak for themselves. Instead of being wooed with better services and superior offers, customers are shackled by switching charges and captive products. No wonder other species, such as Internet innovators, retailers, and healthcare and automotive companies, are invading the financial services market.

Lesson 4: Habitats are more important than competitors.

No one can escape their environment. Research has shown that financial services revenues are driven

by two fundamental factors: exogenous economic production and endogenous innovation. The former is the key factor, accounting for over two-thirds of growth, with higher GDP/capita, higher GDP growth rates, and less equal wealth distribution all driving revenues. Many other factors, such as regulation, play a role too. This creates a rich diversity of finance habitats, each with very different characteristics. A key insight from our research is that habitat differentials are more important than competitor pressures in most of financial services.

Being present in the right markets is a big plus and it can be managed over time. Even seemingly monolithic markets (mass retail in a medium-sized-economy) are actually composed of several sub-habitats, each with its own features. Large value skews are a persistent feature of most financial markets and should lead to a continuous hunt for the best habitats.

There is ample evidence that much of the demand for financial services is latent and either goes unserved or appears as self-provision. Pension provision, insurance, and risk diversification are large areas of potential demand. By contrast, when new services have been made available—often by initially small start-ups such as Capital One (credit cards), PayPal (payments), and MAN (retail hedge funds)—the take-up has been fast.

Habitat loss is also a feature of the real world in finance. Cross-border payments in Europe used to be a hugely lucrative business for commercial banks, but with the advent of the single market, this “rent” is disappearing fast.

Lesson 5: Buy insurance.

Everyone agrees that large exogenous shocks—the economic equivalents of meteor strikes and ice ages—will happen again in the future. Such shocks occur at a much higher rate than previously believed, simply because there are so many distributions in play.

There are two ways of buying insurance against such shocks. The first is the most obvious and least palatable for those locked into quarterly earnings announcements: pay a premium to someone who will cover the extreme risks in your business portfolio. Most financial services firms in the world are not only aware of these risks, they quantify, monitor, and report them regularly. Hedging such risks, however, has an immediate cost to the P&L and is often dismissed as too expensive. In our view, boards should be much more proactive in requiring the explicit hedging of specific extreme risks in their firms. Where this works, as in Goldman Sachs’ experience in the credit crunch of 2007, it can be spectacularly rewarding for shareholders and employees.

The second type of insurance policy is to “become amphibian.” In some cases a management team might suspect that it is the wrong species with the wrong genes and maybe the wrong habitat. The temptation in such situations is often to attempt to turn the firm into something that it is not: from a universal provider into a distribution powerhouse, from a mature economy provider to an emerging markets player, from a broker to a principal investor.

Instead of such rash acts, it is possible to grow capabilities that are still linked to the core of the firm but create new growth options. Credit card firms need to find cheaper, more stable customer deposits. Domestic retail banks need to build a platform that is better for their customers and that can go cross-border. Having lungs and gills can be a great insurance policy as liquidity ebbs and flows.

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These lessons do not add up to a formulaic recipe that will create the financial services equivalent of *homo sapiens* at the top of the evolutionary tree. Indeed, every survival strategy has its own extinction buried deep inside it. Rather, the lessons serve as guidelines for leaders who face a barrage of often conflicting advice and demands. Boards, CEOs, and executive management teams who swim with the evolutionary tide are more likely to survive and thrive. ❖