Summary

Enterprise sustainability is becoming increasingly difficult to achieve. Companies are living shorter and more hectic lives as the evolution of technology and business models accelerates. In order to survive, companies must be capable of transforming quickly to meet external threats and incipient opportunities. Given the ubiquity of technology-driven business processes, digital transformation is not a mere need, it is an existential imperative.

We believe that *sustainability* depends on *business agility,* which is enabled by *architecture.* If your organization, processes and systems are architected to support the challenges that you are likely to confront, then you can transition more rapidly and with less risk. If you haven't done the integrated planning necessary to have a valid Enterprise Architecture model or if you've allowed your architecture to emerge piecemeal from the individual projects you've executed then you've probably sacrificed a great deal of your business agility.

Many companies employ rapid development approaches, such as Agile programming, that favor *doing* over *planning* in a misguided attempt to create responsiveness by building disposable solutions quickly and cheaply and replacing them when the need arises. Agile may accelerate delivery of solutions at the cost of the ability to evolve them over their lifetime because, unfortunately, it often produces bad architecture.

It takes discipline in a number of areas of architecture, commitment to innovation and R&D, resources and time to get off this track and many companies are unable or unwilling to commit to it, regardless of the potential to enhance their competitiveness. There are a number of reasons that they don't, including unsuccessful past efforts at integrated Business and Technology planning and lack of internal expertise. This is where Archemy™ can help.
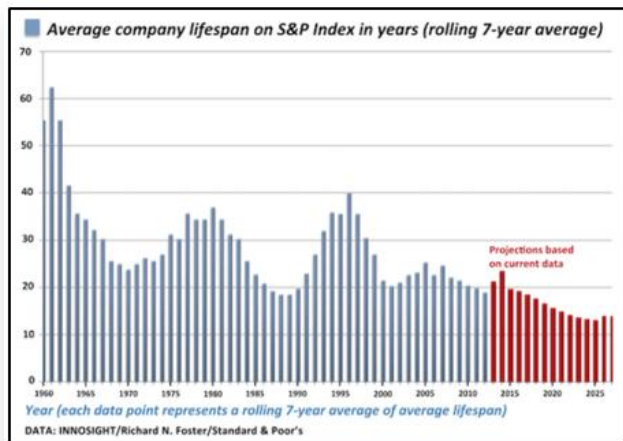
Archemy™ can help you to:

- articulate and document your business context (strategy, business model, operating model, SWOT concerns) with enough detail to perform integrated planning,
- compile and prioritize a portfolio of transformation initiatives,
- identify relevant evolving technologies and business models, define the portfolio of innovation and R&D projects you need to accomplish your transformation goals and work with you to manage and execute them and
- partner with you to execute your initiatives, with our ArchDev™ methodology, incorporating proven, reusable architecture and solution Archifacts™ from our Enterprise Catalogue, supported by our Archemists™, who are vetted architects and engineers.

Our methodology, IP, tooling and staffing are all intended to help you identify what needs to be done and then accomplish it cost-effectively, efficiently and with lower risk. We can provide experts in disciplines that you may not have and produce results that will meet your immediate needs today while maintaining the flexibility to transform to meet your downstream needs, tomorrow.

For more detail, continue reading.

The Challenge

Average company lifespan on S&P Index in years (rolling 7-year average)

Projections based on current data

Year (each data point represents a rolling 7-year average of average lifespan)
DATA: INNOSIGHT/Richard N. Foster/Standard & Poor's

". . . The life expectancy of large companies, faced with the challenges of technological disruption, has been reducing for some time. . . the real story is less about . . . impending death . . . and more about their need to adapt - to move through business and product life cycles more quickly. . ."

Source: Neil Perkin

Sustainability is becoming increasingly harder to achieve. Companies are living shorter lives and the rate at which technology and markets are changing continues to increase. Digital Transformation is critical to survival.

Managers in today's environment are repeatedly faced with the choice between trying to accelerate transformation of asubset of their organization and taking a bigger-picture view. Often they trade off good for fast and cheap. Agile and DevOps are major enablers of this.

Sustainability derives from Business Agility, which depends on Architecture. It's simple; modifying or transforming something that is well-architected is easier, faster and cheaper than replacing it.

What makes this all possible—Enterprise Architecture and related disciplines, integrated planning and design—is the prerequisite to producing a robust architecture. In many cases, the departments and disciplines needed to collect the information and execute the processes it takes to stay on top of an ever-evolving enterprise aren't there. At a lot of companies, Enterprise Architecture teams, Architecture Review Boards (ARBs) and Governance, Risk Management and Compliance (GRC) groups were either never instituted, had their scope or domain constrained or were starved of resources and died. Similarly, companies have failed at achieving benefits from PMOs and PgMOs, which they, through the expedient of magical thinking, expected to somehow address architecture issues. In the struggle to meet immediate challenges, anything not associated with ongoing development or operations was perceived as discretionary overhead, and killed.

A similar thing has happened to Innovation and Research & Development. While many new technologies are quite promising, companies tend not to be particularly good at Directed Innovation or R&D to produce maximum value from them. Part of R&D is an outward-focused activity, actively monitoring and validating emerging products and enabling technologies. The rest is focused on matching promising developments with what the enterprise needs to enable its overall transformation plan. If the target state and the path expected to take the company there are not well understood and articulated, then it's likely that there is no practical basis for innovating or managing R&D properly.

In this context, this quote from *Alice's Adventures in Wonderland* seems particularly apropos:

> *"Would you tell me, please, which way I ought to go from here?"*
> *"That depends a good deal on where you want to get to," said the Cat.*
> *"I don't much care where–" said Alice.*
> *"Then it doesn't matter which way you go," said the Cat.*
> *"–so long as I get SOMEWHERE," Alice added as an explanation.*
> *"Oh, you're sure to do that," said the Cat, "if you only walk long enough."*
> *(Alice's Adventures in Wonderland, Chapter 6)*

Much of the time what comes out of R&D efforts are trivial proofs of concept (POCs,) which are not of much further use beyond the initial demonstration of the technology from which they're built.

Innovation is a key to business agility and sustainability. It can occur on a spectrum of levels including basic Research or that which provides Sustaining, Enhancing or Breakthrough impact to the enterprise. When focused properly, it is equally applicable to legacy businesses as it is to completely novel ones. Generally, healthy enterprises maintain an innovation portfolio focused on issues of interest to business lines at all stages in their lifecycles. For mature businesses characterized by high market share and low market growth, incremental operational cost savings are a likely target. For emerging products or services, feature or function enablement is more often the goal and speed is a crucial factor. In any case, new approaches to things such as internal or external collaboration, supply chain integration and customer interaction are of interest to almost any business.

Innovation may take two forms—do what you're doing better or do something different that provides competitive leverage. The former focuses largely on the synthesis of current enterprise imperatives and options for addressing them. The latter emphasizes the potential for employing new or different enabling mechanisms to produce results that will be valued in the marketplace.

Consider this quote:

> *"Scientists discover the world that exists;*
> *engineers create the world that never was."*
> — Theodore von Karman

Enterprise building is, for all intents and purposes, *engineering* as von Karman views it. Obviously, scientific R&D is required for *invention* of products and services, but *engineering* is what is required to *innovate* and *innovation* is what we seek when we look to apply new enabling technologies, methods and processes to transform an enterprise.

Perhaps, then, we should think of the work commonly called R&D within enterprise CTO's departments as *Discovery* and, if intent-driven, *Directed Discovery.* It is one cornerstone to *innovation.* Mapping useful enablers that are discovered to projects intended to move the enterprise along its intended transformation path is the other.

SWOT (Strength, Weakness, Opportunity and Threat) analysis is a common framework for identifying and prioritizing transformation initiatives in strategic planning and Discovery should provide an ongoing stream of options for capitalizing on relative strengths, protecting or eliminating areas of weakness, exploiting opportunities or responding to threats.

When an R&D group spends time and resources building trivial POCs without concern for how they might be applied, it is largely *discovery* time wasted. When strategic planners envision and prioritize initiatives without a good *engineering* perspective for how they may be implemented or what risks might be involved, they are also wasting time and potentially taking chances with the enterprise's future. In either case, planning initiatives without knowledge of or concern for their potential impact on the enterprise's architecture risks impairing business agility and sustainability.

Now, many companies' fallback approach to maintaining technological currency is to rely on vendor-provided products available in the marketplace and contracted manpower, presumably with technology expertise and domain experience. To some degree, it is impractical to expect to keep up without acquiring knowledge and experience from outside the enterprise. However, it is crucial to maintain the proper level of hands-on oversight to ensure that the enterprise's priorities are observed and that the degree of experience that is contracted for is actually provided. It's all too common to have senior contract developers assigned to tasks that legitimately require experienced architects and end up with deliverables that do not conform to architectural standards, perform as expected or have the versatility or plasticity that they should.

In summary, then, enterprises must implement coherent Architectures informed by their strategies and which account for their organizational structure, processes and technological infrastructure to achieve business agility and sustainability. Digital transformation is not an option; it is an imperative and the agility, versatility, plasticity and robustness of the solutions employed in the process is of paramount importance to enable responsiveness to market changes and contain costs. *Innovation* and *Discovery* must be judiciously managed to enable the enterprise to evolve at the pace required to remain competitive.

What We've Seen

With over sixty years of experience in designing and implementing solutions for businesses, we have the following observations to offer:

- Many companies suffer from 'emergent architecture,' that results from executing projects without due consideration for their impact on the overall enterprise and its infrastructure.
- The notion that the ability to deliver software rapidly will allow the enterprise to pivot quickly by replacing what's no longer consistent with the latest strategy is all too prevalent. This is fallacious and acting on it actually undermines business agility rather than enhancing it.
- Agile SDLC and DevOps enable this and exacerbate the problems resulting from it. However, if a solid solution architecture is put in place prior to undertaking an Agile project, it stands a much better chance of succeeding.
- The idea of 'doing more with less' and the focus on doing over planning has undermined the disciplines needed to establish and maintain architecture that will truly enable business agility. Controls within the organization that might counteract this 'Ready, Fire, Aim' approach are dwindling or nonexistent at many companies.
- Trying to stay current with evolving technologies and business models is becoming increasingly challenging. Almost no company has the resources to manage *Discovery* and *Innovation* entirely on its own. External information resources and partnerships with vendors and advisors are required to fill the gap.

- Effective innovation requires both a comprehensive understanding of the company's strategy, its current and to-be enterprise architecture and *Discovery* that produces a comprehensive understanding of emerging technologies.
- There may be a useful solution out there but if you cannot identify it and relate to the problem at hand, then it's of little value. The solution you're seeking may have been implemented in a completely different context and, thereby, be nearly invisible to you.
- If your architecture and governance capabilities are not up to the job, it will be difficult to establish or re-establish them at a moment of need, say, when a critical threat arises. Agile, minimum-viable or just-enough enterprise architecture projects are useful when applied to the scope of a single initiative or program but the bigger picture must be addressed. Herein lies a potential miasma of time and costs that might ultimately produce benefits but can retard implementation efforts.
- Archemy™ is focused on addressing exactly these problems.

What We Do

Based on our assessment of what we have seen and what we continue to see, we have developed an approach to producing solutions with a foundation of cohesive architecture that can be delivered at similar cost to Agile projects but which provide lower Total Cost of Ownership (TCO) and better business agility than Agile and DevOps, alone.

- We augment your R&D lab and Architecture efforts. We maintain an Enterprise Catalogue of reference architectures and ArchiFacts™, proven architectures and components that can be adapted and reused to accelerate transformation initiatives, control costs and mitigate risks and are constantly adding to our inventory.
- We employ ArchDev™, our methodology to elaborate the big-picture context and select or develop a target architecture that we will use as a foundation for your Digital Transformation initiative. This involves:
    - o acquiring enough EA information to establish a business context for the transformation you're planning, which may require a focused Agile Enterprise Architecture Management (AEAM) exercise to ensure we're working within a valid framework,
    - o applying this knowledge to your initiative of interest to provide context for *what* your required solution should provide or enable and *how* it should be implemented and
    - o working in combination with your staff, members of our vetted community or other outside partners to execute your initiative.
- We provide ongoing architecture monitoring for all solutions acquired through us. When technology advancements produce a new solution to a problem we've helped you solve, we'll let you know that it may be time to re-evaluate it.
- If we've built a custom solution for you, we can help you monetize your investment by extracting the architectural design and components and posting them in our Catalogue.
- In short, we help you establish and execute a Digital Transformation plan to create a coherent architecture for about the same cost and in the same timeframe as merely implementing a project would require. Adaptive Reuse enables this and reduces risks by employing proven architectures, components and approaches.

What We Provide

The enablers we provide include:

- Our Intellectual Property:
    - **ArchDev™** is our methodology, whose processes address every stage of transformation from inception to implementation. **ArchDev™** is a counterpart to Agile and DevOps. When used in conjunction with one-another, **ArchDev™**, Agile and DevOps provide significant project acceleration while ensuring consistency with targeted architecture.
    - **Enterprise Catalogue of ArchiFacts™**, proven architectures and components that can be adapted and reused.
    - **Proprietary Ontology/Taxonomy**, which is used to classify all of the assets in our Enterprise Catalogue and which drives the ArchNav™ search.
    - **ArchART™**, our Architecture Reference Taxonomy

- Our Tooling:
    - **ArchNav™**, an application based on our proprietary, multidimensional **Ontology/Taxonomy** that allows you to search our Catalogue for solutions or components that you can license and employ as a foundation for the solution you're trying to implement.
    - **EAMTk™**, the Enterprise Architecture Management Toolkit, which we have compiled from the best and easiest-to-use elements of the most well-known EA frameworks.
    - **ArchViz™** is a visual tool that allows users to explore candidate solutions to recurring business problems. It provides access to **ArchiFacts™** that are either reusable knowledge components or information about them. The information includes details about reusable component structures as well as the **ArchDoc™**–enabled documentation of the process by which the knowledge **ArchiFacts™** were developed and evolved, along with their technical specifications.
    - **ArchNet™**, an OTT Cloud-based environment that enables the use of Archemy tools via their common Ontology.
    - **ArchKnow™**, the Cloud-based Knowledge Repository containing **ArchiFacts™**
    - **ArchStor™**, a web-based storefront, through which solutions may be licensed or subscribed to or other services purchased.

- Our Staff Resources and Community:
    - **Archemists™**, a community of architects, consultants and developers with the expertise and experience to perform all necessary tasks to help you achieve the targeted transformation. **Archemists™** may also have contributed architectures and solutions to the Catalogue.

- Innovation team
    - **Archcellerator™** is our not-for-profit incubator and R&D Lab, operated in conjunction with NYU and supported by commercial project sponsors.
        - It provides **ArchiFacts™**, which enrich the **ArchKnow™** repository
        - It can be directed toward specific problems/opportunities

In Conclusion

Many companies impair their agility by pursuing the wrong approach to solution realization. Agile development may be quick but what you may save on implementation, you may lose on versatility and plasticity when threats or opportunities present themselves. Archemy™ can provide highly-targeted, proven, reusable architectures, solutions or components that can accelerate your projects while reducing costs and risks and, in so doing, create business agility.

If you need a solution, let Archemy™ provide you with architecture for the cost of chaos.