

The Importance of Plasticity for the Evolution of the Life Insurance Industry

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Abstract: *Innovate or die... But just how to do it is the make or break question. Through her analysis the author suggests that innovation will be at its best when it comes from within. But beyond that there is something inherently more powerful - something that can only be generated internal to an organisation - **plasticity**.*

Drawing on inspiration from conceptual application of biological principles to build more resilient businesses (inspired by Reeves & Levin, Scientific American, March 2017), the author explores and evolves these ideas more specifically to the insurance sector.

*The author generates the novel concept of **plasticity** in the business and insurance context referring to it as optimised, proactive and reactive innovation. **Plasticity** can't be outsourced; it can only be generated at an organisational level through leadership and culture committed to building capacity and honesty.*

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The proverb “innovate or die” has become a mantra for companies all around the world. Many financial services companies are investing in “InsurTech” and innovation hubs. The fact that these are often outsourced or facilitated through external investments, highlights an unfortunate challenge within the current structures. There appears to be either a lack of capability and/or willingness to genuinely commit to organizational innovation particularly within the life insurance industry.

In order to survive and drive our own destiny, we must bring our companies along with us on the journey to innovation. Continuing the same processes will simply lead to the long-term deterioration and decline in fitness of our companies and our industry. We must evolve or we endanger ourselves.

This paper will consider the leadership of companies using concepts drawn from biology, ecology and evolution. It will then outline the DNA required for financial services companies to autonomously evolve, and the actions that leaders should take to ensure this evolution aligns with the aims of their boards and of their shareholders.

This paper assumes that the financial services companies are currently operating and are not under threat of takeover or extinction; in those cases, other strategies and considerations would naturally be required.

Biology

Simon Sinek’s book, *Start with Why* ⁽¹⁾, has become an all-encompassing fascination among management. Yet this fascination is in stark contrast to a scientific mindset which -- rather than considering “why” -- focuses on the study of organisms, their behaviors, their interactions within their ecosystem, and their fitness and selection in terms of evolution. Considering an organisation from a biologist’s point of view does not ask why it exists but rather focuses on the fact it does exist and examines how resilient it is in the changing ecosystem.

In terms of a financial services company, we can consider both the capital and the products such an organisation produces. We also need to consider, however, the nuance of the company, which must include consideration of its place in the ecosystem: its importance to its customers, to its community, and to its employees. If the company rates low in importance to any of these stakeholders, it is going to struggle to withstand environmental changes and pressures. Table 1 below outlines the challenges that are facing the life insurance industry in regards to its ecosystem:

Table 1

Stakeholder	Impact
Customers	Insurance companies should be highly important to their customers. At its core, insurance is a promise to pay an amount of money in the future upon a distressing event for the policyholder, whether a property event or a life insurance event. In the case of life insurance, this can be a promise to pay claims many years into the future. Given the customers’ requirement that they be able to trust their insurance providers to fulfil this promise, there are a slew of regulations that must be adhered to in order to conduct business. Yet regardless of the oversight and controls in place, insurance companies are less trusted by consumers than supermarkets. ⁽²⁾
Community	Insurance companies are vitally important to the financial health of many individuals, and through them, to the economies in which they exist. This importance to the financial ecosystem was the key driver to the regulations around systemically important financial institutions (SIFIs) and the globally systemically important insurers (G-SIIs). ⁽³⁾
Employees	Employee engagement has been shown to materially impact the financial results of a company. Specifically, units in the top quartile of employee engagement outperformed those units in the bottom-quartile by 22% in profitability. ⁽⁴⁾ This remains a significant challenge for insurance companies with Deloitte surveys suggesting that the industry culture is a top priority for which many companies are not ready to tackle. ⁽⁵⁾

Evolution: The Past

The earliest nuclei of life insurance related to funeral expenses for the Roman Army. Burials were at the time considered vital to provide spiritual peace, thus troops would pay coverage for all those who served.⁽⁶⁾ It evolved slowly through tontines in the 1600s and as protection to assist widows and children in the 1700s, with the core that life insurance related to a promise to pay an amount of money in the future in the event of death of the policyholder.

A significant transformation occurred in the 18th century with the beginning of mutuals. With this progression, along with the growth of the financial services industry and life insurance companies, we started down an evolutionary path that led to the variety of products we offer today.

While these characteristics of the industry were changing, so was the environment in which we were working. There were changes to working conditions; women in the workplace; and the introduction of calculators, and later, computers and email. There have also been significant market and company failures that have influenced new requirements and regulations of companies, from accounting standards and Sarbanes-Oxley to privacy laws and ORSA (Own Risk and Solvency Assessment) requirements.

Evolution: The Present

Life insurance companies have thus become complex organisations that are integral to the financial services ecosystem. They provide mechanisms for individuals to manage savings and wealth creation as well as provide protection against the financial impacts of poor health and death.

This increased complexity in both the product offerings and the environment in which we operate has resulted in life insurance companies becoming vast organisations. They span product distribution to asset management; administration to medical expert underwriting. It is no longer enough to manage the product sold in the environment; leaders have to manage the insurance company as an ecosystem in itself with its vastly different needs and desires.

In addition to managing the complexity leaders are facing a difficult environment. Shareholders continue to demand steady growth; yet the environment presents challenges. Low interest rates and improved mortality are leading to changes in demand for our standard products. Moreover, it is difficult to keep up with the pace at which technology is changing. Specific technology starting to make its mark includes the use of AI for underwriting and the digitization of personal health.

Life insurance companies must confront some material issues related to how to keep pace with this changing environment. Companies must acknowledge inherent flaws in the legacy business that lead to a lack of innovation, including:

- The long-term nature of life insurance means many of our associates in claims, actuarial, and administration could maintain their existing roles for the rest of their working career without the need to innovate.
- The inherent problems in our capital regimes that mean new products are not scalable. For example, if you decide to cover a new protection product, you face larger mis-estimation and volatility risk, and therefore need to hold additional capital. This means that, as an organisation, you must have a limit on the volume of this product thus not wanting it to be successful.

To deal with this, many life insurance companies are now investing in innovation hubs, and many regulators have started regulatory “sandboxes”: These are equivalent to using CRISPR on the DNA of a life insurance company. These are an admission that there are material flaws in our capabilities, cultures and our structures.

CRISPR refers to Clustered Regular Interspaced Short Palindromic Repeats, or more generally to the CRISPR-Cas9 genome editing technology.

This is a technology that is rapidly evolving. It involves specifically finding and permanently modifying parts of the genetic code in a cell or organism. (23)

Evolution (or Extinction): The Future

Life insurance companies can get blasé about duration; we have products with low lapse rates, and therefore long durations. We guarantee that we will be around to pay our customers’ claims for many years to come, so we don’t easily admit to ourselves that companies, including life insurers, have a life span. Organisations, like organisms, are influenced by their environment and influence their environment, and eventually they either

propagate or die out. Specific brands and companies are mortal but as leaders we must ensure the continued financial survival of the organisation. None of us want our organisations to become extinct.

What causes extinction?

There are rare **Mass Extinction** events that wipe out the majority of living plants and animals. The asteroid-hitting-the-earth theory of what occurred to dinosaurs is an example of this type of event. Mass Extinction events are the same risk that concerns regulators creating the SIFI regulations; such risks may be presented through a global pandemic, or through interactions across the financial services industry of the type we saw during the global financial crisis.

Symptoms that your organisation may not be resilient to this type of event include having similar risk appetites, sales practices, products, or customers to competitors.

However far more common than these rare events is **Background Extinction**. This refers to the standard rate of extinction that occurs in an ecosystem. Some species are simply unsustainable with the way the world is evolving.

Generally there are four reasons for Background Extinction:

1. Genetic aberration or genetic pollution
2. Environmental impacts
3. Predators
4. Co-extinction.

Organisations similarly can be considered to be put at risk from these reasons:

Extinction Risk	For Organisms	For Organisations
Genetic aberration or genetic pollution	This refers to the risk of a mutation being passed through generations; this can be seen in some dog breeds which have been bred for certain features, but which may make it impossible for them to have natural births. (7)	For organisations, this relates to operational risk that is inherent in cultural issues or entrenched tacit business practices (e.g., make the quarterly numbers at all costs) that puts the company at risk. This can range from a corporate culture focusing solely on growth without fully acknowledging the risk, to poor HR policies which open the company to potential litigation. There are many examples of failures caused by poor organisational cultures. These are very easy to see in hindsight; however, given the number of corporate

		scandals, it seems obvious that these are not as easy to acknowledge during the time the practices are underway or issues are being addressed.
Environmental impacts	This relates to changes in the environment that are inconsistent with survival. For organisms, one example can be witnessed in considering the impact of the melting of the polar ice-caps to the polar bear population. ⁽⁸⁾	For organisations, this may be driven by changes in the customers, changes in regulation, impact of artificial intelligence (AI), or workplace changes. For life insurance organisations, there are also risks around medical and genetic advances. In order to be resistant to environmental changes, a company must be able to adapt to these changes in a timeframe that is consistent with these changes.
Predators	This risk is present when predators are stronger and more dominant in the ecosystem, breaking the reproductive cycle. It is considered that nearly 60% of recent extinctions have been caused by invasive predators, like feral cats, killing native birds or reptiles. ⁽⁹⁾	For organisations, this risk can be considered as both the impact of competitors, and the impact of other companies that may produce substitute products and services. Life insurers need not only to be aware of what products and services their competitors are creating and marketing, but also what other organisations such as data analytics companies and health providers are producing.
Co-extinction	This occurs generally when a key part of the ecosystem becomes extinct. Those that feed off that organism may also become extinct. These extinctions are sometimes hard to establish, but a probable example is the extinction of the large blue butterfly of Britain that became extinct when the ant species that its caterpillars exploited was no longer available. ⁽¹⁰⁾	For organisations, this may include the impact of counterparty risk, the impact of an ageing agency force, or simply the impact that bad behaviour of other organisations may have on the reputation of the industry as a whole.

Comparing the extinction risks with the four major issues facing the global insurance industry as cited in the EY Global Insurance M&A Themes 2017 ⁽¹¹⁾ and the Global Insurance CRO Survey (2016) ⁽¹²⁾ suggests the industry is facing material threats.

Item	Extinction Risk	
EY Global Insurance M&A Themes		
Political and Macroeconomic Factors	Environmental & Co-extinction	The current political instability and low interest rate environment not only reduces investment income but has wider impacts for our businesses. If unemployment increases we will see increased lapses, but also will see potentially increased claims due to fraud or other means.

		Furthermore, this instability can reduce consumer confidence, and therefore consumer spending, on items such as insurance.
Industry Regulation	Environmental	The regulatory landscape continues to change around the globe. Insurance companies need to navigate the regulatory changes deftly, robustly, but also efficiently, in order to flourish.
Innovation and Customer Disruption	Predators	<p>Data analytics, process automation, and the impact of AI are changes in insurers' environments; the risk for insurance companies comes not from these changes specifically, however, but instead from what competitors may do with these technologies.</p> <p>Insurance providers face risk from the anti-selection spiral that may occur if their company's data analytics do not keep up with those of competitors, as well as from companies providing a substitute, such as data or analytics firms or health services providers.</p> <p>This may present long-term risk for life insurance companies, as they get squeezed out by health analytics providers.</p> <p>Insurance companies will also have to manage the impact of process automation, and what this means to both their new business but also importantly to how they manage their legacy portfolios.</p>
Demographics and the need for insurance		<p>There are changes in demographics around the world. We are seeing an ageing population in many countries that requires different products and services.</p> <p>Furthermore, among targeted ages for traditional life insurance, individuals are able to gain a better understanding of their individual risk through data analytics and genetics information. This will alter the demand for insurance and the expected products.</p>
Global Insurance CRO Survey 2016		
CROs aware of potential improvements in operational risk management	Genetic Pollution	<p>Companies need to be concerned about the external environment. Chief Risk Officers note the need to ensure the appropriate control of operational risk within the company.</p> <p>The latest risk noted by the Chief Risk Officers was in relation to ensuring their companies' management of cyber risk in particular.</p>

Requirements for survival

Martin and Reeves suggested there were six concepts from biology that result in a resilient business. ⁽¹³⁾ As you read through these points, however, it is obvious that company leaders face conflicting priorities.

When managing our businesses, the benefits realized through the positive application of these concepts are countered by strong, persistent opposing forces:

Resilient Biological Concept ⁽¹³⁾ .	Positive Application for Business	Opposing Force
<p>Redundancy</p> <p>In biology, genetic redundancy refers to situations where several genes exist in an organism, all performing the same role to some extent. It is noted that in these cases there are few mutations.</p>	<p>Applying genetic redundancy to a business or organisational context is quite easy. If a company has multiple areas or people that can each perform the same role to similar extents, the company should be more resilient to unforeseen events. Specifically, resources could be reallocated as necessary, and independent checking and reviews could be in place.</p>	<p>Efficiency</p> <p>Companies are responsible to their shareholders and are under pressure to ensure efficiency.</p> <p>During times of low growth, expense management and efficient processes can often become key areas of focus.</p>
<p>Heterogeneity</p> <p>In biology, heterogeneity refers to the state of being diverse. In the study of biology/ecology, the more diverse the environment is, the more diverse the species cohabitating in it are. ⁽¹⁴⁾</p>	<p>At the organisational level, heterogeneity refers to diversification of people, products, and services.</p> <p>Research has increasingly shown that a diverse workforce produces better financial results. ⁽¹⁵⁾</p>	<p>Consistent Culture and Focus</p> <p>Companies, however, are expected to have a consistent culture. Investors want to understand the company and its goals; the company's goals cannot be so broad as to cover everyone's interest.</p>
<p>Modularity</p> <p>In biology, modularity refers to the fact that organisms are made up of units that are individually identifiable and singular, yet form part of a larger group. Cells, tissues, organs, and systems are all individually clear and robust. Modularity in biology allows for dissociation, duplication and divergence. ⁽¹⁶⁾</p>	<p>At the organisational level, modularity refers to business units that can easily be separated to focus on or solve different business problems.</p>	<p>Silo Mentality</p> <p>Too many modules/business units can result in people working in silos with differing objectives and goals.</p>
<p>Adaptation</p> <p>In biology, adaptation refers to phenotypic or adaptive traits that have evolved through natural selection. Adaptation enhances the evolutionary fitness of the organism.</p>	<p>At the organisational level, adaptation refers to ability of the organisation to reinvent itself in order to respond to changing dynamics.</p>	<p>Consistency and Trust</p> <p>An organisation that adjusts too regularly does not show consistency. It is therefore difficult to build trust and respect among its customers and employees.</p>
<p>Prudence</p> <p>In biology, prudence refers to the nature of animals to act in a cautious way. Particularly interesting is the way many predators in a sustainable ecosystem will eat prey in a way that does not overexploit the prey.</p>	<p>At the organisational level, prudence refers to the risk appetite of the organisation.</p>	<p>Aggressiveness</p> <p>Organisations that are overly cautious can experience low growth. This may not align with shareholders' expectations and may make those organisations takeover targets.</p>

Embeddedness In biology, embeddedness refers to the way an organism forms part of a larger ecosystem.	At the organisational level, embeddedness refers to the importance of the company to the industry or the customers, or how embedded it is within the everyday.	Impact of Legacy Many companies are not interested in their importance to the industry today but rather their importance tomorrow. The burden of a legacy portfolio can be material.
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Business leaders cannot focus only on the resilient, or positive, forces outlined above, when creating their own destiny. Instead, they must balance and constantly consider both countering forces of aggression and resilience; innovation and risk management.

Key to Survival: A Culture of Evolution

From the analysis above it is clear that leaders face many worrying issues. The world is changing rapidly and there are many opportunities and potential extinction events that all need to be considered at any given time. Many insurance companies gain comfort on their sustainability and growth from myriad data points and projections. These, by nature, are based on backward-looking information, yet we know that the environment tomorrow will be different. Focusing on single metrics, problems or solutions can lead to being blind-sided by a foreseeable combination of issues. We need our businesses and our associates to be forward-looking in a multidimensional way.

I believe the most important aspect of an organisation that will survive the environmental challenges ahead is one with a culture of **plasticity**.

The term **plasticity** in the field of ecology relates to the ability of an animal to adapt to changes in its environment and between habitats. Specifically interesting in this area is the study of neuroplasticity, which relates to the brain's ability to reorganise itself by forming new neural connections throughout life. Having greater neuroplasticity has been found to be able to compensate for brain injury and even Alzheimer's disease. ⁽¹⁷⁾

Plasticity is about making, seeking, and finding new connections rather than simply adapting to what is already happening. Connections are both related to connections with other people but also importantly making connections between different business issues. It is about having multiple potential solutions readily available

and considered and being able to act on them seamlessly as required. Plasticity needs to occur at an organisational level and needs to be encouraged at an associate level. I believe plasticity is something that can't be sourced externally, it emanates and is most effectively when it comes from within.

What are the requirements for Plasticity?

I argue there are two underlying requirements for plasticity of an organisation to occur: capacity and honesty.

1. Capacity

Capacity refers to the maximum limit of an organisation. It can relate to physical capital in terms of assets but can also mean the human capacity of your organisation in terms of time, knowledge, experience and flexibility.

It is well-understood and agreed that you need spare capacity in your physical capital to address issues as they arise, as specified by the various global capital frameworks.

It is also obvious that you need spare capacity in your human capital. Though this can be seen as inefficient in the short term, spare capacity is critical to adjust to crises, disruptions, and changes in the market. It is also known that operational risk increases when individuals are under stress ⁽¹⁸⁾ and therefore to appropriately manage the risks for our shareholders we have to ensure human capital is not stretched. However there are many more benefits from having some level of spare capacity across your organisation.

Spare capacity can and should be utilised in the best interest of the company during less-critical periods. Google founders Larry Page and Sergey Brin famously suggested the idea of spare capacity for “the new”, ie purely curiosity driven ideas. However this has not been found to be sustainable and even Google has officially abandoned this idea. ⁽¹⁹⁾ Rather than considering any idea of interest, I argue you want your associates to spend this time reflecting and connecting to what is happening in their team, in the organisation, in their profession, and importantly in the wider context. Individuals need “head space” to consider how issues may influence their role, their company, and the market.

2. Honesty

There is little point in associates having a view of what may impact the business if they have no ability to share it. In order to have plasticity, an organisation must have a culture of communication that allows for issues and ideas to be shared, and importantly for them to be listened to.

Communications must be honest, timely, cross-functional, and cross-generational. Views and ideas must be allowed to ruminate across the organisation and managers must not be dismissive even if they have heard the issue before.

How do you encourage plasticity in your organisation?

The silo mentality remains pervasive in life insurance. Agency forces have vastly different goals and incentives to underwriting, finance, and other corporate functions.

To evolve robustly, given the pace of change in the world and the uncertainty of the future, organisations need to continually form new connections between their business units and the people within them. These connections will allow better, faster, and less-disruptive movement of people between projects, particularly during times of crisis, but also as ideas develop.

Proactive investments need to be made and incentives given to overcome the focus on the short term and to manage this effectively.

Management should consider:

1. Structural mechanisms to support plasticity

Specific investments that have been found to increase performance include:

- Rotations and cross-functional projects ⁽²⁰⁾.
- Cross-functional teams with appropriate goals and empowerment ⁽²¹⁾

Though these are difficult to facilitate as manager's do not want to "lose" their strong performers, these opportunities allow for associates to begin to see how their function fits with others. To enhance project

performance, the rotations should specifically include a training element, as this should not be simply about redeploying resources. Further associates should be encouraged to communicate with the team they are rotating into, as well as the one they have come from, what they have learned. This final step of communication is key, not only because it gives them an opportunity to share their learnings, but very importantly it forces the associate to reflect on his or her experience.

2. Communication mechanisms to support plasticity

A very important structural consideration is the physical location of your associates and how to encourage “water cooler” talk across floors, buildings, cities, and countries. Given a focus on expense management, it is very difficult to have staff meet face-to-face, yet rapport and trust is built faster during in-person communications. Technology solutions are available, though take-up has been slow to date, with more people still preferring to text rather than voice/video call. ⁽²²⁾ Companies need to consider what investments they are able to make in this regard but also what the communication norms are for the organisation: for example, is it acceptable to send an instant message (IM) to the person sitting next to you? Is it acceptable to take a conference call from your office when the other people on the call are in the same building?

Companies also need to have specific communication mechanisms for ideas and issues to be discussed and considered, and shared with management. Enterprise social networks are in their infancy but may provide an inclusive and broad place for these communications to live.

3. Behavioural mechanisms to support plasticity

In any organisation, managers’ and leaders’ behaviours will speak louder than their words. Their behaviours, good or bad, will be replicated across the company.

Performance assessments of managers should include consideration of collaborative but results-focused behaviours. Shared goals and rewards are essential. Furthermore, managers should be appropriately incentivised to build their staff’s expertise in ways beyond the technical requirements for their jobs.

How do you encourage plasticity in your people?

Consistent and reinforcing behaviours are required by management in order to have associates that are interconnected with each other but also with their markets and the world.

Some people are naturally social connectors and their importance has been well documented. But plasticity is not just about connecting with people it is about connecting ideas and in this way nearly all associates could be a source of untapped potential for your company.

The following behaviours should be recognised and acknowledged:

- A focus on heterogeneity of interests across the organisation, encouraging people to have interests outside of their company. This may be related to their professional lives, such as involvement in professional bodies, but may also be completely separate.
- An encouragement of reading, thinking and discussing.
- An encouragement of interactions, reflections, and communications.

Associates should be required to reflect on projects, meetings, and conferences and share their reflections on what they have learned with the teams and others, specifically answering questions such as “What does this mean for our company?”, “What does this mean for my role?”; and “What will I do next with this information?”.

This reflection is key in embedding a growth mindset in associates and in the organization that not only accepts that capabilities of the organisation will have to change over time but drives these changes forward.

CONCLUSION

As the pace of information and input increases, current frameworks, metrics, reward systems, and product offerings will be under pressure. Life insurance companies will not keep up with medical, technological, and regulatory changes without spreading the load. Information gathering, considerations of business implications and solution development will have to be part of the broader organisations responsibilities.

We cannot expect to currently know the shape that the evolution of our industry will take, though we know change is inevitable. Where survival of the fittest is key we can improve our odds by focusing on leadership, culture, systems and support. By developing plasticity, organisations should be better prepared for the inevitable industry challenges and evolution by balancing an ability to shape innovation and evolution and responding to external changes and developments.

***Disclaimer:** The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of, and should not be attributed to, RGA. Assumptions made within the article are not reflective of the position of any RGA entity.*



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Works Cited

1. Sinek, Simon. *Start With Why*. London : Penguin Books Ltd , 2011.
2. EY. Reimagining Customer Relationships : Key Findings from the EY Global Consumer Insurance Survey 2014. *EY*. [Online] November 11, 2014. [http://www.ey.com/Publication/vwLUAssets/ey-2014-global-customer-insurance-survey/\\$FILE/ey-global-customer-insurance-survey.pdf](http://www.ey.com/Publication/vwLUAssets/ey-2014-global-customer-insurance-survey/$FILE/ey-global-customer-insurance-survey.pdf).
3. Systemically important financial institution. *Wikipedia*. [Online] 06 23, 2017. https://en.wikipedia.org/wiki/Systemically_important_financial_institution#Non-bank_entities.
4. Sorenson, Susan. Gallup. [Online] 6 20, 2013. [Cited: 07 01, 2017.] <http://www.gallup.com/businessjournal/163130/employee-engagement-drives-growth.aspx>.
5. Deloitte. Human Capital Trends in the Insurance Industry. *Deloitte*. [Online] [Cited: 07 01, 2017.] <https://www2.deloitte.com/.../human-capital-trends-in-the-insurance-industry-2016.pd...>
6. A brief history of life insurance . *thinkadvisor*. [Online] 9 9, 2013. [Cited: 7 1, 2017.] <http://www.thinkadvisor.com/2013/09/09/a-brief-history-of-life-insurance>.
7. *Proportion of litters of purebred dogs born by caesarean section*. KM, Evans and VJ, Adams. 2010, *Journal of Small Animal Practice*, pp. 113-8.
8. WWF. Polar Bears. *WWF*. [Online] 6 26, 2017. <https://www.worldwildlife.org/species/polar-bear>.
9. Glen, Al. Invasive predators are eating the world's animals to extinction - and the worst is close to home. *The Conversation*. [Online] 6 26, 2017. <http://theconversation.com/invasive-predators-are-eating-the-worlds-animals-to-extinction-and-the-worst-is-close-to-home-64741>.
10. Shouhei Ueda^{1, 2}, Takashi Komatsu³, Takao Itino^{1, 4}, Ryusuke Arai⁵ & Hironori Sakamoto^{6, 7}. Host-ant specificity of endangered large blue butterflies (*Phengaris* spp., Lepidoptera: Lycaenidae) in Japan. *Nature*. [Online] 6 26, 2016. <https://www.nature.com/articles/srep36364>.
11. EY. Global Insurance M&A Themes 2017 : Dealing with Uncertainty. *EY*. [Online] 4 12, 2017. [http://www.ey.com/Publication/vwLUAssets/ey-gloal-insurance-themes-2017/\\$FILE/ey-gloal-insurance-themes-2017.pdf](http://www.ey.com/Publication/vwLUAssets/ey-gloal-insurance-themes-2017/$FILE/ey-gloal-insurance-themes-2017.pdf).
12. —. Global Insurance CRO Survey 2016. *EY*. [Online] [Cited: 07 01, 2017.] <http://www.ey.com/gl/en/industries/financial-services/insurance/ey-insurance-cro-survey-2016>.
13. Martin K. Reeves, Simon Levin. Building a Resilient Business Inspired by Biology. *Scientific American*. [Online] March 17, 2017. <https://blogs.scientificamerican.com/guest-blog/building-a-resilient-business-inspired-by-biology/>.
14. *Environmental heterogeneity, species diversity and co-existence*. Riin Tamme, Inga Hiiesalu, Lauri Laanisto, Robert Szava-Kovats & Meelis Pa`rtel. 2010, *Journal of Vegetation Science* 21, pp. 796–801.
15. Vivian Hunt, Dennis Layton, and Sara Prince. Why diversity matters. *Mckinsey & Company*. [Online] 1 2015. <http://www.mckinsey.com/business-functions/organization/our-insights/why-diversity-matters>.
16. Gilbert, SF. *Developmental Biology. 6th edition*. Sunderland (MA) : Sinauer Associates, 2000.

17. Neuroplasticity. *Wikipedia*. [Online] [Cited: 07 01, 2017.] <https://en.wikipedia.org/wiki/Neuroplasticity>.
18. Kodz J, Davis S, Lain D, Strebler M, Rick J, Bates P, Cummings J, Meager N. Working Long Hours: a Review of the Evidence. *Institute for Employment Studies*. [Online] 10 2003, 2003. <http://www.employment-studies.co.uk/resource/working-long-hours-review-evidence>.
19. D'Onfro, Jillian. The truth about Google's famous '20% time' policy. *Business Insider*. [Online] 4 17, 2015. <http://www.businessinsider.com/google-20-percent-time-policy-2015-4>.
20. ADJEI, DORA. *THE IMPACT OF JOB ROTATION ON EMPLOYEES' PERFORMANCE*. Kumasi, Ghana : Kwame Nkrumah University of Science and Technology, 2012.
21. *Investigation of Factors Contributing to the Success of Cross-Functional Teams*. III, Edward F. McDonough. 2000, *The Journal of Product Innovation Management*, pp. 221-235.
22. China Chanel. WeChat Data Report Dec 2016, Stats From WeChat. *China Channel*. [Online] 12 29, 2016. <http://chinachannel.co/2016-wechat-data-report/>.
23. Broad Institute. Questions and Answers about CRISPR. *Broad Institute*. [Online] 6 27, 2017. <https://www.broadinstitute.org/what-broad/areas-focus/project-spotlight/questions-and-answers-about-crispr>.