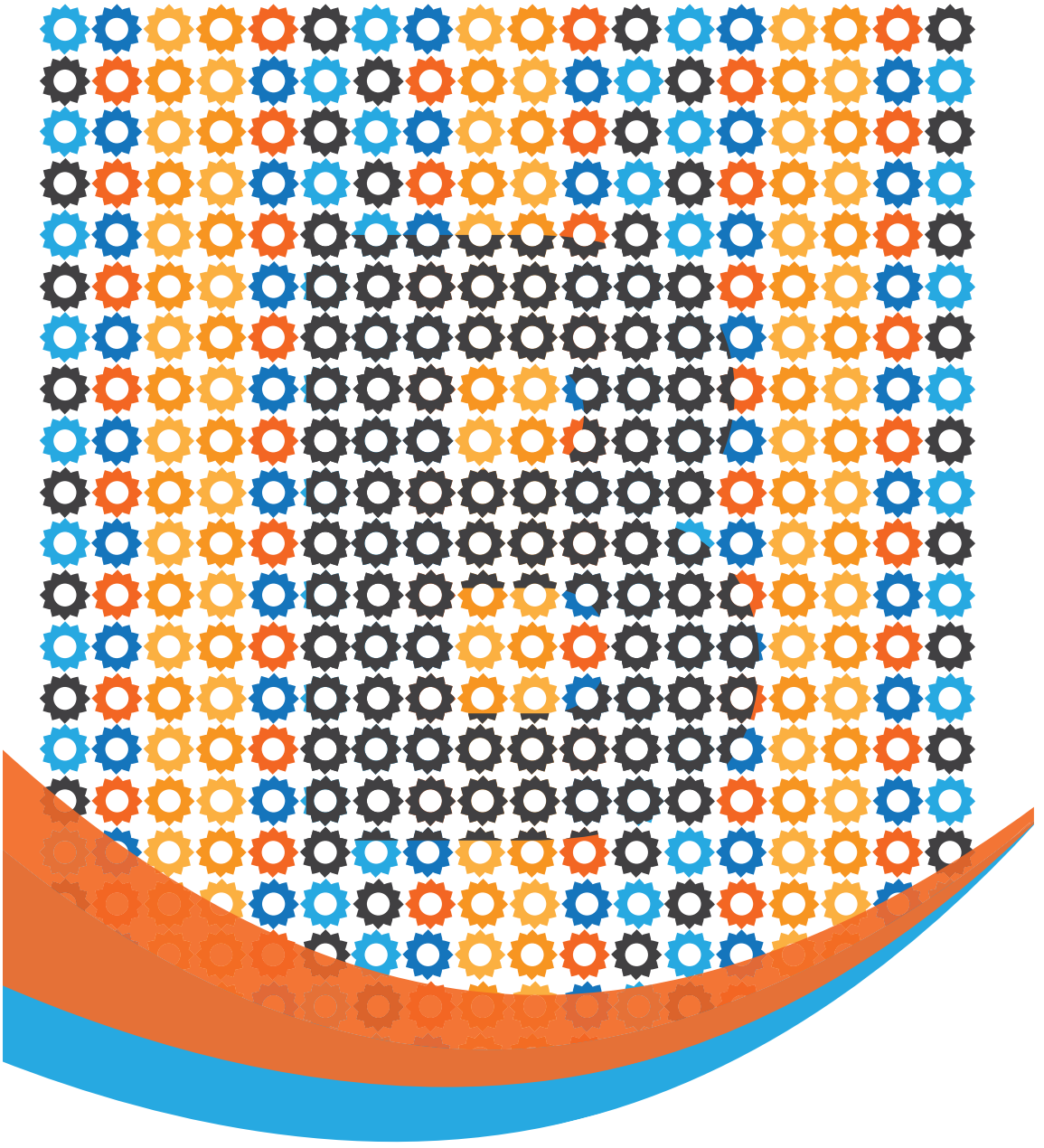


Brickendon Journal 06

BRICKENDON

Christopher Burke, Managing Director

Brilliant Brickendon Brand

"First and foremost we are an innovative company"

Welcome to the launch of this, our sixth, quarterly journal. When we began this journey of giving our specialist consultants the opportunity to contribute to a journal for clients and partners, we had no idea there would be so much interest. Many of the early editions required additional reprints and now we are printing 300 per cent more than we ever expected. This edition is especially exciting for the team here at Brickendon, not just for the content, but because key articles will also appear on our new website which went live in June.

In April this year we embarked on a review of Brickendon's offering to the market and of our overall brand positioning. We wanted to refine how we work with our clients and to best represent the great service we give to them. To this end, we travelled to Gothenburg in Sweden to find a company who had recently done great work for other businesses, including Caterpillar and SKF to mention a few.

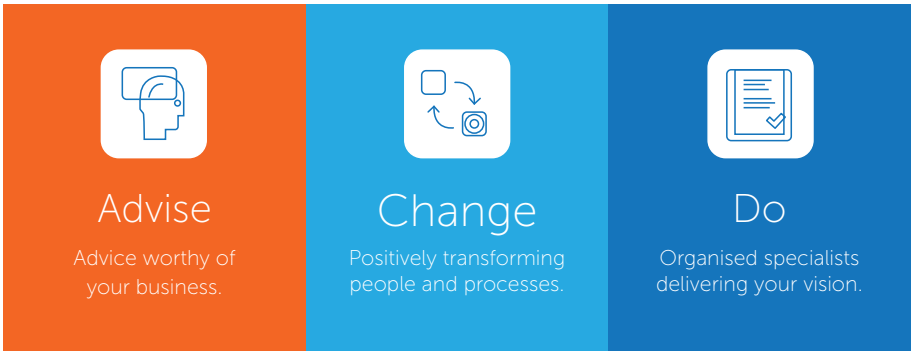
We set out on a journey not just to adapt where Brickendon sits in the market, but also to completely refresh our web presence. This was an incredibly exciting piece of work as it allowed us to spend time with experts from outside Brickendon, who could instantly see the power in what we are doing in the market place and of the significant differentials between what we are offering compared to our competitors.

We saw that there was a crisp clean way in which to represent how Brickendon serves its clients. First and foremost we are an innovative company. Our research and development teams are always looking for new and unique ways to solve existing problems and this, more than anything else, defines who we are as a company.

Wrapped within this innovative framework are Brickendon's three core offerings: Advise, Change and Do.

We ADVISE our clients across both business and IT by providing substantial expertise in strategy formation, organisational transformation, architecture and risk management. We offer CHANGE management services, where our methodology provides teams who are proactively accountable for ensuring the business or IT benefits are realised. Finally we DO the work. Having spent years building Brickendon's reputation for getting things done, this is an extremely important part of our offering, where we use our highly-trained specialist consultants to solve our clients' challenges with the aim of adding value from day one.

Innovation that drives business



In May we set about expanding our business away from a purely European offering to include the Asia Pacific market. We had repeatedly been asked whether we could serve our clients in Asia and now seemed like the right time to start this business. As a result we now have a regional office in Hong Kong, which will act as a base to expand across the entire region.

One final point of note, is that B-FIELD, our Brickendon Facility for Innovation and Excellence in Local Delivery, has been operational now for six months and has already successfully provided clients with a flexible, secure and private offsite (but nearby) facility to meet their project demands. B-FIELD is provided as part of our engagement framework as required and agreed with clients.

We hope the articles packed into this edition are both informative and thought provoking and we look forward to hearing from you, our readers, as to how we can assist in further supporting your business and IT objectives.

Contents

Basel's Prime Broker Balance Sheet Headache

There are many effects of regulation on the prime brokerage world, but a key change in the landscape has been caused by the increase in balance sheet capital costs for those offering financing to hedge funds, driven primarily by reforms such as Basel III.

Basel III is designed to strengthen the regulation, risk management and supervision of the banking sector. The reforms aim to improve the banking sector's ability to absorb shocks, risk management, governance and transparency. Reforms are targeted at two levels: a) individual bank (or microprudential) regulation, and b) banking sector wide (or macroprudential) regulation.

These two approaches to supervision are designed to be complementary as greater control at the individual bank level reduces the risk of system wide shocks.

One of the key results of these reforms for the individual business lines is a vastly increased cost of capital, which is now more closely aligned with the quality, liquidity ratios and type of assets being financed. Prime brokers are historically a large user of the balance sheet. This is against a backdrop of ever increasing return on equity targets from the parent banks. The result? Prime brokers are now forced, more than ever, to optimise the balance sheet. There is only a finite amount of balance sheet to use for client-generated financing activity, and prime brokers need to use it to maximise profitability in the most efficient way.

"One of the key results of these reforms is the vastly increased cost of capital"

As such, as well as turning some client business away, prime brokers are being forced to adapt their operating models and enhance their operating efficiency simply to stay profitable. A key way to achieve

this is ensuring that the right complementary client inventory is coupled with a sophisticated collateral management process.

Netting or internalisation of this inventory is key when considering which clients to bring on board. If the new client assets can be used to satisfy an existing demand for collateral or lending then this will maximise efficiency.

A basic example would be where a hedge fund client wishes to borrow a security from the prime broker. Rather than go out to the street to borrow the stock and incur expensive (normally cash collateralised) borrowing fees, if the prime broker can source the security from its own inventory then this is balance sheet and cost netting in its purest form and this drives down capital costs. Matching long clients with short clients in the same markets is the most efficient way this can be done – an example of one client's inventory complementing another.

"Collateral optimism teams are these days key revenue generators"

Prime brokers will have balance sheet inventory from a number of sources – long equities that are purchased as hedges for synthetic equity swap positions, long securities from hedge funds that are encumbered as collateral for cash financing, other collateral balances from clients, and other street side counterparties (cash and/or non-cash). As we have seen, anything that sits on balance sheet will now be a greater cost to the business.

Another way to optimise inventory is to also use it as collateral for demand from other street lenders, or simply as collateral for cash refinancing to reduce demands on the Prime Brokerage's treasury. If you have an operating model that allows you to match collateral demand from one part of the business (for example a street counterparty from which the prime broker has borrowed stock) with collateral supply (the inventory) then you will fully optimise balance sheet usage.

Key to a successful collateral and inventory management process is sophisticated systems, people and processes. Normally a prime broker will have a separate part of the business running this inventory optimisation process – with a front, middle and back office function similar to other parts of prime. After all, efficiency can be easily tracked and there are large profit and loss gains available when on-lending or sourcing cheap funds externally. As well as increasing efficiency, the collateral optimisation teams are these days also key revenue generators.

Complex optimisation systems suggest where collateral might be best used (for example understanding each financing counterparties' preferences for cash or non-cash securities), will track where assets are at all times including corporate event monitoring, and will have ways of instantly recalling securities (should they be sold at short notice by the hedge funds). Access to tri-party facilities where non-cash assets can be easily moved between counterparties to act as collateral is also normally a key part of the process. Offering these services is now a major product offering for many banks and custodians.

All of this is normally on top of the other systems at prime brokers that work out legally which client assets can be rehypothecated – not an easy job given that each hedge fund client will normally negotiate different percentages of their indebtedness (basically the net cash borrowing amount) that will allow a prime broker to rehypothecate their assets.

So it can be said that whilst prime brokers' client facing offerings have not changed significantly in the last five years, there has been significant investment and change in the machine behind the scenes. Moreover, the type of hedge fund clients are also now more carefully selected based on the type of assets they will bring to the prime broker when compared with existing inventory.

The impact of this microprudential regulation still remains to be seen and will likely remain uncertain until the next market shocks. Still, we are in no doubt that members of the Basel committee will be pleased with the change in focus.

Regulation and Innovation – Friends or Foes?

Innovation is a somewhat overused term these days. Many people use the term but what does it actually mean? Whilst not wanting to start this piece with a dictionary definition, it's important we define the key terms from the outset. Innovation is the use of a novel idea or method, whilst invention is the original creation of that idea or method. Innovation is not improvement – improvement is all about doing something better, whereas innovation involves doing it differently (and hopefully much better!)

Regulation on the other hand is a set of rules meant to control behaviour for the greater social or economic good. According to a recent report by the Organisation for Economic Co-Operation and Development (OECD), regulation directly affects innovation. While few would dispute this claim, the relationship between the two and the impact they have on each other has been, and continues to be, the theme of much debate.

When considering the arguments, three broad types of regulation are generally referred to:

- Economic regulation – intended to improve the delivery of goods and services in the marketplace. It includes competition enhancing and securing regulation, mergers and acquisitions, restrictions on pricing and market entry / exit.
- Social regulation – intended to protect the health and rights of the general population. It includes environmental protection, health and safety, workers' rights and buyer protection.
- Institutional regulation – sometimes also referred to as administrative regulation and intended to guide the management of the private and public sectors. It includes taxes, bankruptcy laws, employment protection, distribution logistics and intellectual property rights.

The impact of both new regulation, and regulatory reform, on innovation is not as straight forward as you might imagine. Obviously there are no hard and fast rules here, only patterns that have been observed:

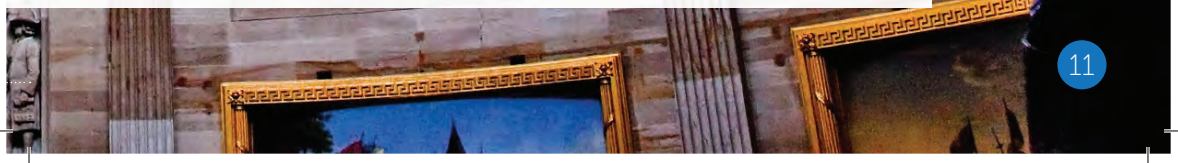
Economic regulation often leads to competition in the marketplace, which in turn drives research and innovation.

However, too much economic regulation can provide larger barriers to entry into the market for new players and therefore stifle competition. Social regulation can often be the source of technical challenges that frequently require novel approaches to be solved.

Institutional (or administrative) regulation is largely seen as neutral in its impact on innovation as it is simply intended to set fair ground rules for all involved. However, more restrictive bankruptcy laws have been seen to divert focus and investment towards less risky, and therefore often less innovative, activity.

Innovation can also be grouped into compliance innovation and circumventive innovation (Stewart A Luke, 2010 The Impact of Regulation on Innovation in the United States). Circumventive innovation tends to occur when the scope of the regulation is relatively narrow. A good example of this was the common use of equity swaps to circumvent the US dividend withholding tax, the subsequent introduction of HIRE Act 871(m) to treat these as "Dividend Equivalent Payments" with very narrow definitions (the seven deadly sins), some further circumventive innovation, and finally the draft regulation to bring 871(m) to a more delta-based test for dividend equivalency (now pushed to 2017). This sort of feedback loop is quite commonplace with narrow regulation and circumventive innovation. By contrast, compliance innovation occurs when the regulatory coverage is broader and the resulting innovation remains within it's scope.

But what about the reverse? Can innovation, particularly in the area of technology, impact regulation? The short answer is yes in somewhat deregulated scenarios, such as the emergence of the Windows operating system and its bundled software. In this case, as has been seen in other areas, the market was so effectively cornered that it was



exceptionally challenging for competitors to enter and do anything about it. In these cases regulatory intervention is often the only way to lower the entry barriers and introduce some healthy competition.

"technology advances and innovation can fundamentally alter the operation of a marketplace"

Additionally, technology advances and innovation can fundamentally alter the operation of a marketplace and cause existing regulation to become ineffective. This would obviously lead to further regulatory reform as the rules try to keep pace with the changes. One example here could be said to be the lowered cost of electronic trade execution, the subsequent emergence of high-frequency trading (HFT), and the manner in which this has been used (in part) to justify the introduction of Financial Transaction Taxes (FTT).

Innovation is also heavily dependent on financing, often venture capital, to support the higher-risk investments in smaller technology based companies. The US has a very well established and mature venture capital industry compared to the more tightly regulated and less developed European market. It's interesting that innovation in venture capital itself could be coming to the rescue as crowdfunding fills the gap by spreading the risk across larger numbers of smaller investors. Innovation breeding innovation.

Competition is also a factor in the spread of technology and innovation. Interestingly, more physical innovations such as ATMs and telecoms have been seen to spread fastest in deregulated markets. By contrast, softer technologies like on-line sales, are more readily adopted in competitive markets where regulation has levelled the playing field and established buyer protection.

Finally, there is also a time dimension to the relationship between innovation and regulation. Often short-term reductions in innovation are seen with regulatory reform as institutions struggle for quick and dirty compliance. However, longer term innovation tends to increase as institutions begin to rationalise and also have time to think through the challenges they face and how best to deal with them.

So what's the conclusion; are regulation and innovation friends or foes? Well, the reality is not so black and white. Regulation and innovation are always going to be together. When regulation becomes burdensome, Innovation will find ways to make it work. When innovation finds new ways of circumventing, regulation will step in to protect. Through good times and bad; sometimes helping each other and sometimes hindering; sometimes one starts it and sometimes the other does.

So if anything, they are more like siblings. 

Are you making the best use of your capital?

BRICKENDON

Brickendon teams are helping some of the world's most successful banks to measure and manage their capital adequacy charge. Moving from CEM to SA-CCR? Confusing your AVC with your CVA? Data issues leaving you with costly approximations? Don't know how to tackle BCBS239? Give Brickendon a call, we can help.

To find out more visit www.brickendon.com or scan this code to contact us now

Read our case studies at www.brickendon.com

Why Change Fails: Part 1 of 3 – People

"ambiguity between inherited and learned behaviour"

None of us are strangers to change. So why is it that the financial services industry has such difficulty in implementing effective and lasting change? Of course it's a highly complex landscape with multiple competing priorities, but it's also an environment that contains some of the brightest and most driven people you're ever likely to meet. So why can't they crack it?

There is no end of statistics and horror stories to draw from, but in this set of three articles we would like to explore some of the underlying patterns associated with change failure by looking at the problem from three distinct perspectives – people, process and technology. This article will focus on the people elements of change failure.

Many institutions continue to hope that employees included in their change initiatives will universally embrace the changes thrust upon them. They make the gross assumption that everyone's reaction to the change will be predictable and positive, and assume that everybody will do what they are told, enthusiastically, and to the best of their ability. Why is it then that we're all surprised when that isn't the case? Moreover, why does it take so long for that realisation to arrive... often too late in the program to easily mitigate?

It will be your employees who represent the largest variable in whether the change successfully achieves its desired outcome, so how do we improve the odds? Well, firstly we need to appreciate why people typically resist change, and for that we need to dip into behavioural drivers.

"Nature versus nurture" is a very old phrase popularised by Sir Francis Galton in his 1869 book Hereditary Genius, inspired by his

half-cousin Charles Darwin. Many scientists now believe this line of discussion to be out-dated due to the ambiguity between inherited and learned behaviour and the levels of mutual feedback on both sides. But there is no doubt that everybody has learned behaviour – sometimes consciously learned, sometimes unconsciously. So it's very useful to understand what negative behaviour might have been learned within the organisation and what that means for change.

- **Trust nobody -** Those responsible for, or involved in, the change could have previously demonstrated behaviour that has broken any feelings of trust, as often happens as a by-product of aggressively forced change. In these cases, the trail of collateral damage is often considered to be worth it in the short term... but the long term good-will of staff can cause issues with active resistance within future change initiatives (Change Anchor).

"business cases fail to motivate 80% of the workforce"

- **Keep your head down –** In these volatile times many people have learned not to stand up and speak out, but to put their head down and stay under the radar. So although this is unlikely to be a source of active resistance, it definitely represents a loss of positive contribution and often passive resistance (Change Drag).
- **Ignorance is bliss -** In today's relentless environment of change many people will have learned to cope with the overload of demands by focusing exclusively on what's urgent. This often results in passive resistance followed by intense fire drill activity as it becomes urgent. What makes this worse is that many delivery options that could have been more suitable if started earlier are ignored due to fire drill time pressures – leading to sub-optimal tactical solutions (Change Panic).
- **Be afraid –** Basic concern for job security, or stunted career development, as a result of the change will cause many employees to actively resist the change. Often demonstrated by claiming unique subject matter expertise, other conflicting priorities, and pointing out all the reasons it could possibly (and hopefully) fail. This can be a very active generator of change resistance (Change Anchor).

"rooted in the culture and hierarchy of the organisation"

So, how can these behavioural responses be transformed into a more positive relationship with change? Well, there has been a great deal of research on the topic and three main ingredients emerge:

- A Champion – Someone respected who can represent the change and inspire the right behaviour.
- A Story – A narrative that can explain what the change is, what's driving it, and why it's important. A good change narrative is based on logic and reason, but a great one also triggers an emotional response.
- An Opportunity – the chance to build the necessary skills and engage positively with the change in order to be a part of its success.

Identifying a leader (or sponsor) for any significant change program is something that is very much rooted in the culture and hierarchy of the organisation, and as a result, is very difficult to influence. However, what can be influenced is the level of visibility, engagement and clarity provided by the sponsor. A successful change requires a set of behaviours and actions taken from the top. This starts with the building of the story.

To build a story that people can believe in we need to understand what really motivates people in the workplace. Studies have shown

that professional motivation is typically spread equally across five main areas – me, my team, my company and shareholders, clients, or society. So any reason for change that talks to shareholder return will appeal to only about 20 per cent of the workforce. This is quite worrying as it means that most single-facet business cases fail to motivate 80 per cent of the workforce. To be really compelling, the reasons for change need to touch on as many of the five areas as possible. If this can be achieved up front, then a huge amount of positive support can be unlocked.

So we've now hopefully given a little thought to understanding and unlocking some of the behavioural constraints, but how do we go a step further and turn this into a positive force for change?

Well, that's both the simplest and most difficult thing to do. Simple, because it's conceptually straight forward, and difficult because it involves doing something that doesn't come naturally to many change leaders. We've already mentioned that financial services institutions employ some of the brightest and most driven people you're likely to see. We've looked at some simple steps to inspire and engage employees, so the next step is for the change leadership.

They have to listen, really listen.

Only when change leadership listens to the opinions, insights and solutions from their employees will those employees feel like they have the opportunity to play an active part in the change and really make a difference.

Once you have that, you no longer have a change programme, you have a change culture.... And that's something worth striving for.

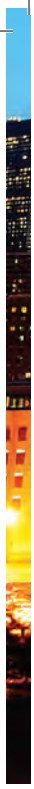
Driverless Disruption

There is much discussion within business and technology circles on the future of driving and driverless cars. While it offers the prospect of potentially safer and more comfortable journeys, there are far-reaching ramifications for our society and economy.

From a societal point of view, the most prevalent benefit is the reduction of road injuries and fatalities. However, the corresponding job losses and reduction in taxation receipts could equal, or even outweigh, the overall social benefits. The economic implications are also multifaceted.

To quantify the overall impact is an extremely complex task as it effects government policy and taxation, personal liability and insurance, as well as each individual's earning and spending patterns. One thing however that is certain, is that as the pace of this change hits our communities, governments will need to be proactive in their approaches and policies to ensure that the societal benefits outweigh the negative impacts.

Anyone imagining a world with virtually no vehicle crashes has to be excited by the prospect of the removal or reduction of the needless loss of lives on our roads. Most accidents, in varying degrees, are the



result of driver error and research from the Institute of Engineering and Technology indicates that "for every 10,000 errors made by a human driver, an autonomous vehicle will make just one". With such incredible predictions on the safety of driverless cars, it is little wonder that manufacturers are bringing the technology to our vehicles as it becomes available.

What is occurring, is that driverless technology is appearing in waves rather than as a big bang scenario. We have already seen an increase in partial driverless technology with cars purchased in the past decade. For example, some cars are already capable of breaking when the car in front is getting within a distance that a human would be unable to stop in an accident; of warning the driver if lanes are changed; and of changing cruise control speeds to suit the traffic levels. Step by step cars are doing more than humans to stay safe on our roads.

"the removal or reduction of the needless loss of lives on our roads"

In the future, this will expand to a point where a car is completely automated but a driver will sit at the steering wheel as he or she currently does, able to take over if an emergency presents itself. The 2017 release of the Audi A8 is expected to be one of the first production cars with a driverless capability. Up until this point, progress has been slow, and it is only in the final phase that the big shake up that we have seen in other industries is expected.

This is the phase where cars go truly driverless. Where there is no longer a driver, or even a steering wheel, and the passengers can sleep or read, or do whatever else they like. Elon Musk, chief executive of electric vehicle manufacturer Tesla Motors, believes this is just eight years away. If Musk's prediction is accurate, from 2023 we will start to see some massive changes to the entire transport industry. The impact won't just be felt in the motor sector either, liability and insurance will become a big issue.

Whilst every care will be taken with the release of this technology, there is clearly, unfortunately, going to be some fatalities especially as the technology is in its infancy. Most countries assess the liability issue by determining "who was in control of the vehicle" at the time of the accident. This responsibility becomes complex once a car has no driver. The fault could sit with the manufacturer who built the car, or potentially with the driver who directed its course, or a combination where decision patterns are derived in certain scenarios after input from both groups.

Looking at some of the philosophical (and awful) scenarios being pondered by manufacturers where the car must chose to drive into

five people or drive into two, it is possible to argue that the reduced injury and loss of life in the latter scenario is preferable - that is unless you are one of those two people. Two lives have been lost and five lives have been saved; however, there are critical legal issues around culpability (including murder and manslaughter) in the event of death as the car "chose" to direct itself into them as opposed to other possible paths.

"responsibility becomes complex once a car has no driver"

Another big impact will be the effect the introduction of this technology has on jobs. According to the Society of Motor Manufacturers and Traders (SMMT), the car industry in the UK currently employs 770,000 people, producing 1.53 million cars a year. In addition, figures from the UK government show that there are 297,000 people licensed to drive taxis or private hire vehicles and 375,000 with licenses to operate heavy machinery like lorries and busses.

If cars are able to be "summoned" or "sent" as required to drop passengers or goods off or collect from work or school, families may no longer need to have multiple cars and the requirement for taxi and lorry drivers will fall. Moreover, driverless cars will not get fatigued, will presumably be more reliable and can operate 24 hours a day as necessary. Only deliveries which need a person at each location would require a person in the vehicle.

As a result, fewer cars will need to be manufactured as families and communities share vehicles, severely impacting those employed in the automotive sector. Unfortunately, there is no guarantee that any technology jobs will be created in the UK to offset these losses.

Another area to consider is the impact on government taxation revenue. The policy changes here appear to be substantial. The reduction in jobs in both manufacturing cars and transportation-related activities would without doubt have a negative impact on taxation receipts collected from PAYE. There would also presumably be the almost total disappearance of revenue from speeding fines, which generated £284 million in 2012/13 as cars would be programmed not to speed or at the very least, to know where cameras are placed.

Local councils would see a reduction in parking fine revenue as driverless cars should either be smart enough to work out parking regulations (which we humans can't) or simply drive themselves around the block whilst you shop, removing the need to park the car at all. Governments should also expect reductions in tax collected from car taxes as there are fewer cars on the road. Finally, there is the potential for reduced tax collection as large global technology

companies target to dominate this sector and they aggressively use offshore tax structures and hybrid and electric vehicles become more prevalent reducing fuel duty.

The final area of concern is around the potential hacking of driverless vehicles. Vehicles need to assess each situation on its merits and follow the best course of action. Vehicles, if hacked, could on a potentially massive scale reverse the braking to accelerating actions putting the lives of those in proximity to the vehicle at risk.

Whilst there are many concerns and challenges to the introduction of driverless vehicles, there is one massive positive, and this time. The act of summoning a driverless car will save hours. Mothers would no longer need to drop the kids at school, or collect grandma for Sunday lunch, the car could do it on its own, freeing up massive amounts of time for leisure.

Without doubt, driverless technology is an incredibly exciting prospect which is not going to go away. It has enormous social benefits as casualties are reduced both for passengers and pedestrians. However, the social and fiscal ramifications will be substantial and governments will need to plan carefully to ensure that the overall benefit to society outweighs the negative impacts on jobs and revenue to pay for services.

"the social and fiscal ramifications will be substantial"

Ever dream about working in Asia?

Brickendon has recently opened its Hong Kong office to support its growing global client base. We are now looking for management consultants who would like to experience a new culture, new environment and a new way of working to join Brickendon in its APAC expansion.

To find out more visit
www.brickendon.com
or scan this code to
contact us now

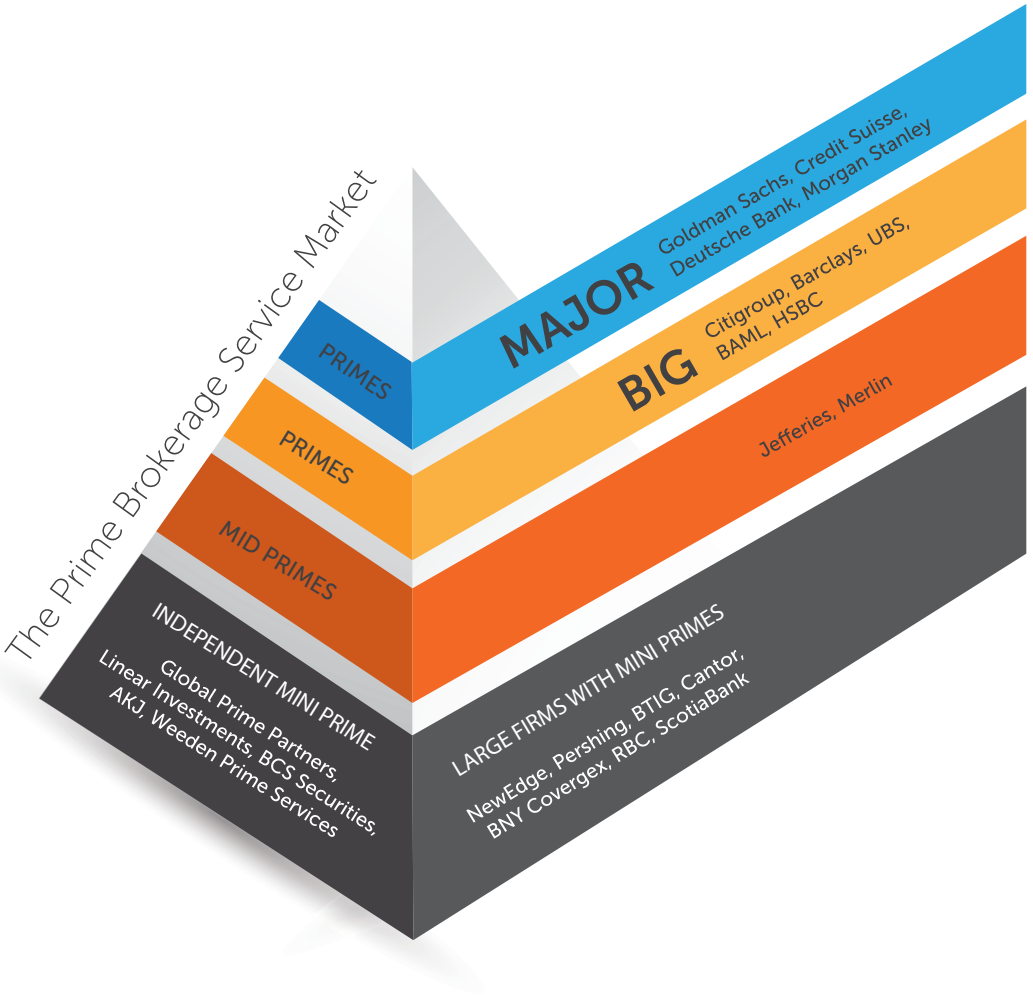
BRICKENDON

Rise of the Mini Prime

We live in a world where the tendency is for bigger to be better and the view of a prime broker has never been different: bigger balance sheets, greater market coverage, leading to larger Assets under Management (AuM). However, as the biggest primes have begun to re-focus, is there room for smaller players to enter the fray?

Over the past few years, Tier one banks have been faced with a raft of regulatory and other changes, which have significantly impacted the organisational structure of their prime divisions. As a result, banks have been forced to reduce levels of existing business that consume large amounts of assets and re-price it based on whether or not the

"balance sheet pressures have never been greater"



client has enough non-balance sheet related revenue to meet their required return on assets (ROA).

With the introduction of Basel III, balance sheet pressures have never been greater, leading tier one primes to concentrate on the top 10 to 20 per cent of their clients. It's more cost-effective to increase the wallet share of a USD10bn hedge fund from 5 per cent to 7 per cent than to add 10 new clients.

Many tier one primes have taken the decision to terminate certain hedge fund relationships, which could provide opportunities for the mini prime industry to develop, particularly in London. Unlike in the US, there is limited competition in the mini prime brokerage space in London, and with the large banks scaling back this could

reap rewards for mini primes. A number of prime brokers including Goldman Sachs and Credit Suisse have made no secret of the fact that they will cease working with hedge funds that they view as being unprofitable or unscaleable as they are unlikely to grow AuM to sufficient levels.

So how does a mini prime model operate? They are essentially acting as "introducing brokers" to the traditional prime brokers. These mini primes pull in a lot of smaller managers and then feed that aggregated AuM as a larger client to larger prime brokers. They provide execution, clearing and custody services through correspondent clearing relationships with these banks. Mini primes also have access to the financing and stock loan capabilities of the top-tier prime brokers, so their clients can apply leverage and take short positions.

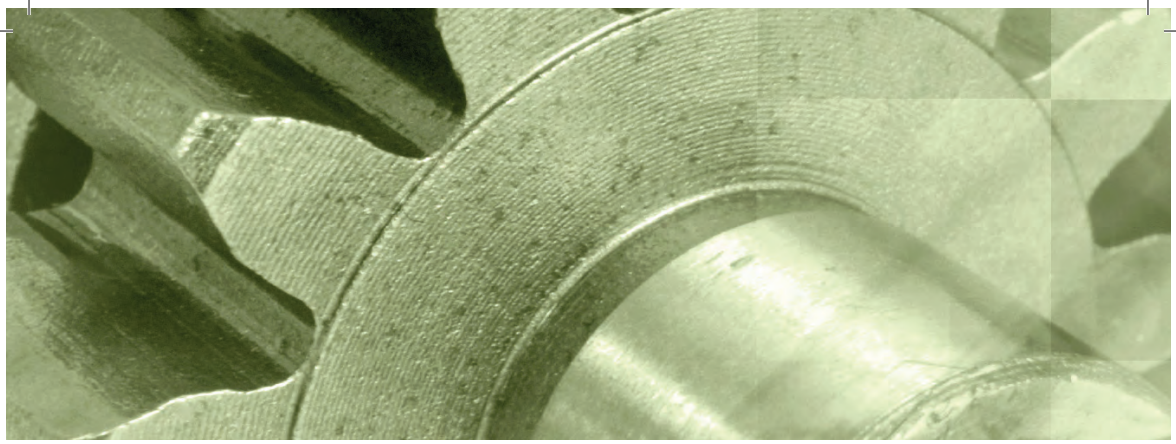
"provide execution, clearing and custody services"

Total AuM into hedge funds is anticipated to reach record levels in 2015 and by March had already passed the $3tn mark. There has recently been a change in allocations by pension funds away from larger managers to smaller ones, who continue to outperform. The backdrop for mini primes to grow has never been better.

A fly in the ointment was the recent announcement from J.P. Morgan that the bank has notified the "introducing brokers" it works with, that it will no longer clear trades or offer financing to their hedge-fund clients. The brokers have 90-120 days to find new clearing banks for clients that had been using J.P. Morgan and the move is estimated to affect about 800-1,200 hedge funds.

This abrupt retreat of J.P. Morgan from the mini prime arena marks the first time a major prime broker has stopped working with introducing brokers altogether.

So what next? As continuing regulatory change aligned with liquidity and capital adequacy requirements continues to place pressure on the funding models of primes, will we continue to see a re-balancing of their existing client bases? With the European landscape light on mini primes, will US shops look to expand from their traditional US bases? Will the move by J.P. Morgan encourage other banks to follow suit, undermining the mini prime business model? The world of prime brokerage remains anything but predictable.



Rules Rule

There isn't much in our lives today that isn't governed by rules, and businesses and business practices are no exception. In fact, rules in business are so commonplace today, that rule engines, systems built specifically to execute these rules, have been developed.

There are many ways to implement a rule engine, ranging from the most basic through to the highly sophisticated. This article will concentrate on a specific type called an inference engine. Inference engines evolved from artificial intelligence research into expert systems and are capable of logically reasoning about data via rules that are hand crafted by a human. The rules then form what is called a knowledge base. If you combine an accurate knowledge base that tackles a specific problem area with an inference engine, you have an expert system.

A related technology is business process management (BPM). BPM software provides tools that allow non-programmers to specify business rules via graphical tools. Often the BPM rules run on an inference engine.

Building Blocks

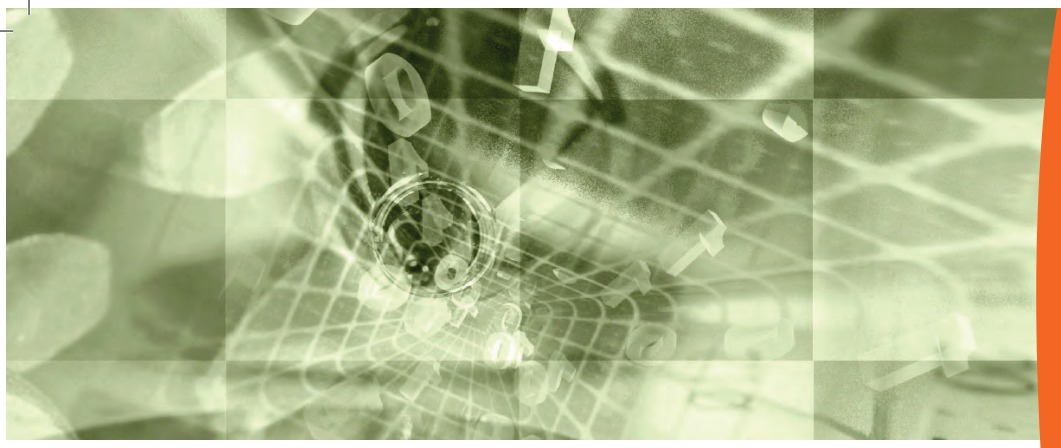
An inference engine can be classified into the following components:

- Knowledge base: this consists of the rules
- Data/Facts/Memory: this consists of the data that the rules will operate on
- Inference Engine: these are algorithms that may interrogate and infer conclusions based on the knowledge base and the data presented to the rules engine

Defining the Knowledge Base

The knowledge base (kb) defines the rules in the system. Rules are specified as if/then statements, however the language syntax may use "when" or "on" instead.

The rule will have a left-hand side specifying the "if" part, and a right-hand side specifying the "then" or consequence part.



Note that the knowledge base is unlikely to consist of a one-dimensional list of rules that may execute sequentially. Such an application has little need for an inference engine and may be programmed in an imperative or object-oriented language such as C or Java.

Instead the kb consists of a network or graph of rules, the output of certain rules feeding into the input of others. This allows complex problems to be modelled by breaking down the problem into a number of smaller parts.

It should also be noted that the programmer doesn't control the order in which rules are executed, that is left to the inference engine, and there are different approaches to navigating the knowledge base.

This programming style is called declarative programming – the programmer specifies the logic but not the execution flow.

Inference Algorithms

Inference means coming to a conclusion on the basis of evidence and reasoning. An inference algorithm uses logical reasoning to infer conclusions based on the data and the knowledge base. There are two approaches – forward chaining and backward chaining.

"Inference engines evolved from artificial intelligence"

With backward chaining you give the rules engine an end state, termed a goal. It will work out if it is true or false by evaluating the consequences of rules in the knowledge base, and therefore what rule clauses need to be true to support the initial query. It works well with interrogative applications (i.e. expert systems) that typically return a true or false answer, perhaps with some supporting information.

With forward chaining the engine starts with an initial state – the current memory. Rules that have a left-hand side that evaluate as true against the initial data will 'fire'. The consequences of fired rules

may modify the memory, thus causing new rules to fire by their left-hand sides evaluating to true. This will continue until no more rules are fired and the engine will reach an end state. Forward chaining is suited to event-driven applications.

"the programmer doesn't control the order in which rules are executed"

Both approaches organize the knowledge base into a graph of nodes. With backward chaining a depth first search may be used, with forward chaining an implementation/enhancement of the Rete algorithm is often used.

Forward chaining is somewhat favoured over backward chaining because it can infer new facts as it goes along. Backward chaining typically only answers the query you provide it.

There are famous examples of both – Prolog employs backward chaining. CLIPS the "C Language Integrated Production System" and Drools utilize forward chaining.

Programming Languages and Modelling Tools

Rule engines typically utilize their own unique programming language. The syntax can vary widely, but all support a declarative programming style whereby the programmer specifies a series of if/else statements with little/no execution control. The language itself will more often than not concentrate on business logic only.

Business users with some technical ability may be able to specify rules with the language, particularly as many undergraduate courses have some programming modules. As the languages concentrate on business logic they tend to be concise and therefore arguably easier to learn than full-blown languages that cover a wide spectrum of application areas.

However, other related tools exist that are even easier for business users. Business process management or business rules management tools typically offer a graphical interface for business users to design rules. Typically these will employ a workflow methodology with the user designing the workflow in a GUI.

Decision tables allow rules to be specified in tabular structures, often spreadsheets that may be uploaded or edited directly via a web interface. Tables may also be employed to create static data facts for the rule engine.

The BPM and decision tables then generate code in the rule engine programming language.

Criteria for Use

When would you want to use an inference engine? If you are modelling a large and complex problem with many layers, which also sits well with the true/false logical reasoning employed by forward and backward chaining, then using an inference engine would likely be beneficial. Developing the same logic in a traditional language would be more problematic.

However, if you have some simple linear business logic that can easily be programmed in a traditional language such as Java or C++, then using an inference engine would be overcomplicating things.

Additionally, there is the case where the logic is of small or medium complexity, but where empowering business users to write rules would be advantageous. As such, the criteria should concentrate on the suitability of the tools to provide a productive environment for business rule development. The internals of an inference engine, if the BPM engine has one, is not really apparent to somebody developing rules with the provided tools.

Drawbacks

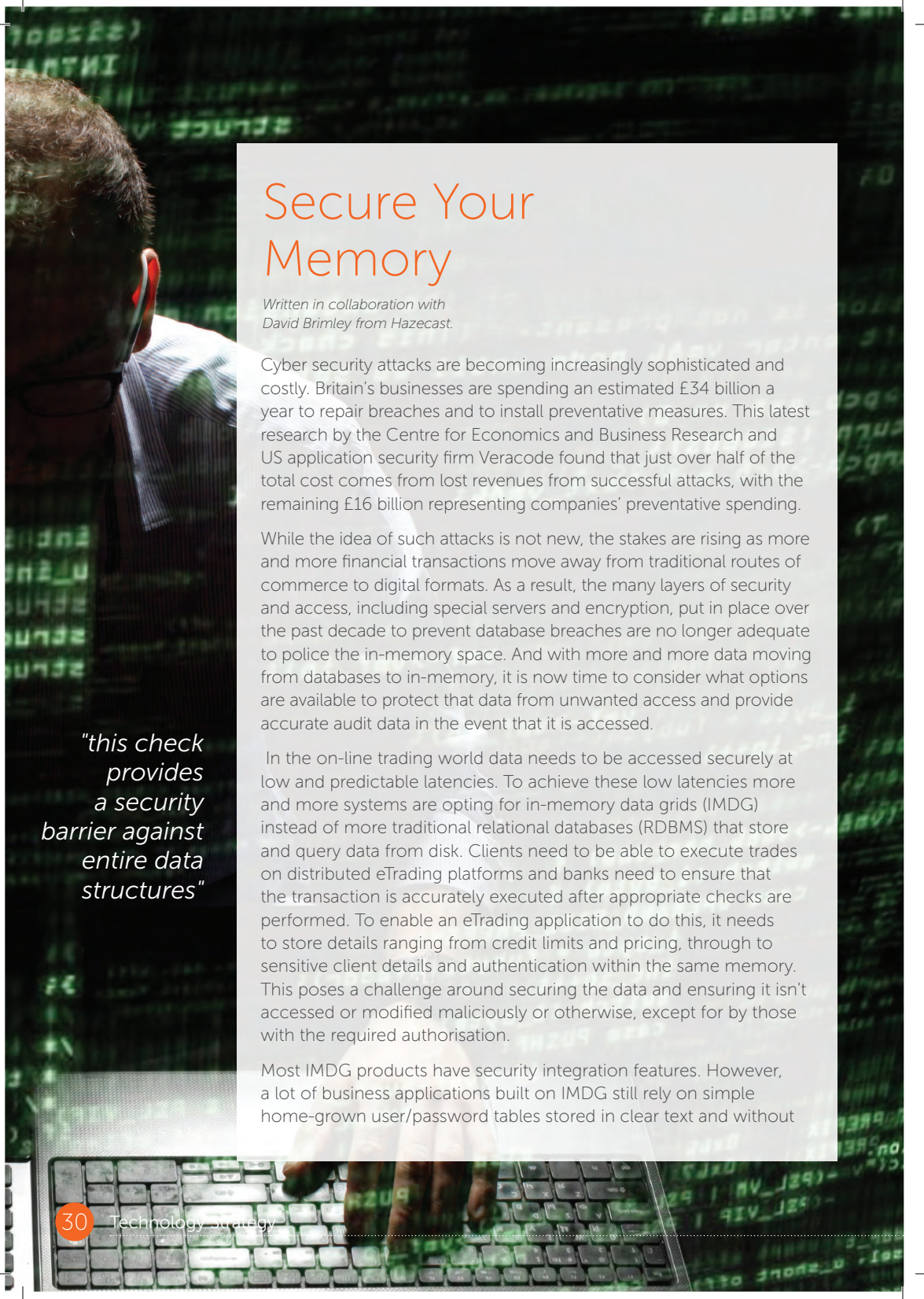
A big drawback is a lack of standardization. Rule engines and BPM tools employ proprietary languages and tools. They may be considered niche skills in the industry and therefore it is difficult to find individuals who have prior experience with the platforms.

Commercial offerings often come with hefty price tags and frequently require the use of the vendor's consultants to help implement solutions with very high daily rates.

Open source platforms run the risk of not being actively developed and becoming obsolete technology. There are many open source projects out there, but many of them seem to have stalled.

Conclusion

Whilst there are advantages and disadvantages with rule engines at present, the technology does look promising and may provide an insight into how business logic will be programmed in the future. It is possible that one day a new killer technology will evolve from the concepts explained in this article and radically change how businesses program their business rules. However, right now it is probably fair to say that we'll have to wait for such a game changing technology to appear. 



Secure Your Memory

Written in collaboration with David Brimley from Hazecast.

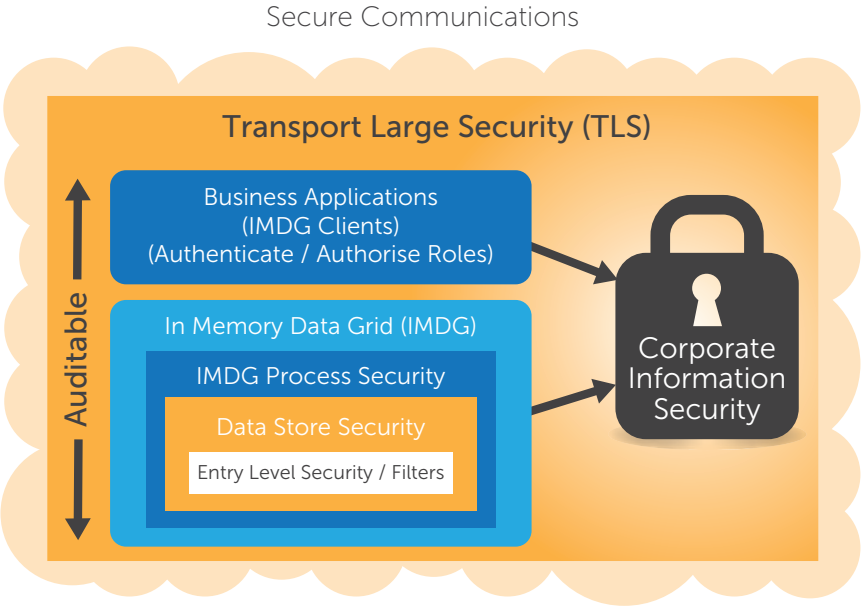
Cyber security attacks are becoming increasingly sophisticated and costly. Britain's businesses are spending an estimated £34 billion a year to repair breaches and to install preventative measures. This latest research by the Centre for Economics and Business Research and US application security firm Veracode found that just over half of the total cost comes from lost revenues from successful attacks, with the remaining £16 billion representing companies' preventative spending.

While the idea of such attacks is not new, the stakes are rising as more and more financial transactions move away from traditional routes of commerce to digital formats. As a result, the many layers of security and access, including special servers and encryption, put in place over the past decade to prevent database breaches are no longer adequate to police the in-memory space. And with more and more data moving from databases to in-memory, it is now time to consider what options are available to protect that data from unwanted access and provide accurate audit data in the event that it is accessed.

"this check provides a security barrier against entire data structures"

In the on-line trading world data needs to be accessed securely at low and predictable latencies. To achieve these low latencies more and more systems are opting for in-memory data grids (IMDG) instead of more traditional relational databases (RDBMS) that store and query data from disk. Clients need to be able to execute trades on distributed eTrading platforms and banks need to ensure that the transaction is accurately executed after appropriate checks are performed. To enable an eTrading application to do this, it needs to store details ranging from credit limits and pricing, through to sensitive client details and authentication within the same memory. This poses a challenge around securing the data and ensuring it isn't accessed or modified maliciously or otherwise, except for by those with the required authorisation.

Most IMDG products have security integration features. However, a lot of business applications built on IMDG still rely on simple home-grown user/password tables stored in clear text and without



encryption. Another issue is that many of these home-grown security solutions secure just the application API layer and not the underlying IMDG, making it relatively easy in these cases to hack directly against the IMDG. The lack of corporate security integration in these systems could be due to the fact that IMDG infrastructure is still very much controlled by the development teams. Many organizations and their central operations teams still don't understand or control central IMDG infrastructure, in the same way we might see a central DBA team control production databases.

Let's take a look at the various layers of security available within IMDG solutions, using a look at a concrete set of examples from the market-leading open source IMDG, Hazelcast (www.hazelcast.com).

Firstly, as an IMDG is a distributed system we need to make sure that all communications between processes over the network are secure. Most IMDG products provide Transport Layer Security (TLS) that encrypts this on the wire communication between cluster members. Hazelcast provides the ability to secure network traffic using TLS between cluster members, from client to cluster and finally between interconnected clusters over wide area networks.

The second layer we'll describe as "process security". Unlike traditional RDBMS which remain static, it is common for processes to be started and stopped frequently within a production cluster. This is how an IMDG provides elastic scalability. By adding extra processes into the running cluster we can increase the memory and computer power available. This in itself

presents a stability problem and in this environment we need to ensure that rogue processes do not accidentally or deliberately join the wrong cluster. It would be potentially disastrous for a production cluster to have a process from a developers test cluster join together. This is an accidental issue, but it would be just as easy for a hacker to insert another process into the cluster and potentially read sensitive data. To prevent this we need "process security", which usually takes the form of a mechanism that allows the cluster to check any new process joining the cluster. The check is entirely bespoke and would usually take the form of exchanging secure certificates. Hazelcast provides this feature in the form of a "SocketInterceptor" callback, within which the developer can code their security check.

With communication and process security in place, we can now start to think about how to secure the data and also how we audit data access. It is at this level of security that we need to integrate with Corporate Information Security (CIS) systems. These CIS systems usually store application security meta-data backed by data stores such as LDAP or Active Directory. It would usually be the responsibility of the CIS system to authenticate a user and then to provide a set of roles for that user against a business system. Hazelcast has the ability to integrate with CIS systems via its JAAS (Java Authentication and Authorization Service) framework. JAAS is a standard framework that can be used to authenticate and authorise a user's session against the IMDG platform. When a client of the IMDG platform makes an initial connection attempt, Hazelcast can take authentication tokens from the client, connect and pass these to the CIS system. Once authorised as a valid user, the CIS system would then return a set of roles back to Hazelcast. These roles map to a set of data structures and allowed operations within Hazelcast, for example an "admin" role may allow updates to certain trade or counterparty data whilst a "read-only" role will, as the name suggests, allow only reads.

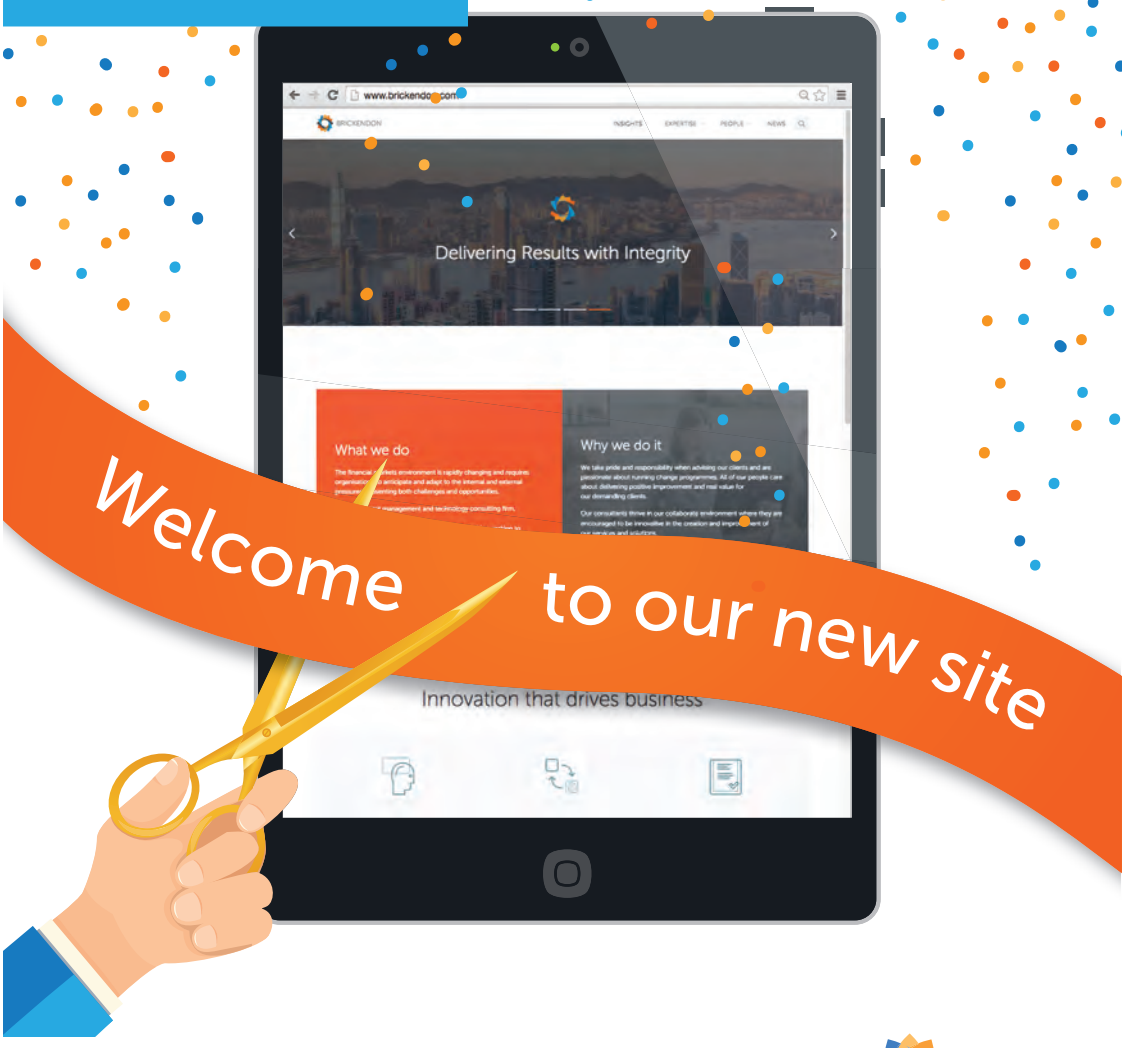
As we can see, this check provides a security barrier against entire data structures in memory based on client membership of a role. But what if we want to allow access to just a few elements or rows of a data structure? For this we'll need a more finely grained set of security meta-data and checks. Some, but not all IMDG products provide this entry or row level security check. Hazelcast provides a callback mechanism called a "SecurityInterceptor". This provides the application developer with the relevant information required to make a data entry access decision. On request, the pre-authorised client credentials along with the data row requested can be verified in real time against the CIS system. The CIS system would store finer business meta-data to determine access rights to an entry. For example, using an inclusion or exclusion mask a client could be allowed access to certain counterparty entries and not others.

Finally, we are discovering an ever increasing requirement for data access audit within systems. This presents challenges to latency requirements for many systems as auditing access should not slow down general operations within the system. Hazelcast again provides a callback mechanism which allows bespoke integration, which can take the form of connections to a central audit system or at its simplest form writing out to a file system.

New Structure

Fresh Design

Exclusive Content



Welcome to our new site

www.brickendon.com

BRICKENDON

Offshore Testing - Will it Save your Business £ $ €?

£2.23 million is spent on the average big application after it has gone live

Offshore test management is not just a job or a role. It's a critically strategic skillset for any sizeable organisation to foster, and for those who practice it, it's more art than science.

Test services have been largely moved offshore in the last few decades and the skillset now required to manage dispersed teams is far more diverse than basic team management. Critically, new studies have now shown that the most obvious benefit of performing testing offshore, namely cutting costs, may only be true in the short term. In many cases, over a longer period, moving work overseas is proving more costly when it comes to maintaining the quality and quantity of work.

Good test management should provide software solutions into production that are functionally and non-functionally fit-for-purpose, and whose levels of performance, reliability, supportability and resilience are acceptable to the end user. Unfortunately, the service provided is not always up to the desired standard, and recent research by software quality tester Cast, found that on average an additional £2.23 million is spent on the average big application after it has gone live as a result of unexpected problems with the code. With such substantial costs being incurred to fix software post go-live, the whole agenda of 'cost-saving' through use of the offshore testing model is being lost. Most importantly however, in the future, the objective of testing will be lost if the critical issues are only identified after going live.

The solution for these significant issues relating to offshore testing, is not to revert back to a 100 per cent onsite testing model. The key, is to try to understand the root-causes of the problems with the offshore model through a detailed in-depth analysis of the situation.

The challenge in understanding this problem is accepting that there is not one resolution which will suit all offshore testing projects. The issues and the resolutions depend on various factors specific to a project, such as geographical location, time zone differences, quality of analysis and code, to name but a few. Therefore the key for a successful offshore testing model is:

1. **to understand the root-causes previously faced by offshore projects and the current project, and**

2. **to convert the resolutions into a robust test strategy and test process**

Testing professionals who work within offshore test teams or co-ordinating projects across different parts of the globe, need to understand the root-causes of various problems. Here is a list of factors which strongly influence the major issues in an offshore testing model. Also, understanding these common factors will help move into the next level of performing in-depth analysis of the root-causes.

1. Time difference

The difference in time zones is a key factor. As the working hours are not the same, onsite and offshore testing teams rely heavily on the so-called 'overlap hours', namely the few hours in a day when both teams are working at the same time. This lack of correlation with working hours means that time is wasted waiting for instructions, clarifications and delivery, and is something that must be understood and addressed in the test strategy and process.

Some of the problems can be alleviated by establishing a robust communication flow diagram, as well as producing information workflow sheets and templates, and centralizing the information. This will help to improve the clarity between the two teams and ensure the seamless flow of information. The test strategy should also establish a strong process for forecasting the issues, while the testing process should ensure that the testing releases, deliveries, environment updates, etc. are aligned with these time restrictions.

2. Language

Though English is spoken in offshore locations, the accents can be very different and language can often be ambiguous in its application. It's very natural to have difficulties in understanding during the initial test design phase. Unfortunately, this is where the problems start. The test design phase requires thorough understanding and any wrongdoing or mishaps as a result of a misunderstanding or misinterpretation can be very costly. To address this major issue, the test process and strategy should ensure there is proper documentation of all testing artefacts and that there is a robust test review process. It is also necessary to have a good overall written communication model. Brickendon's exclusive testing methodologies can help to efficiently address this issue.

3. Culture

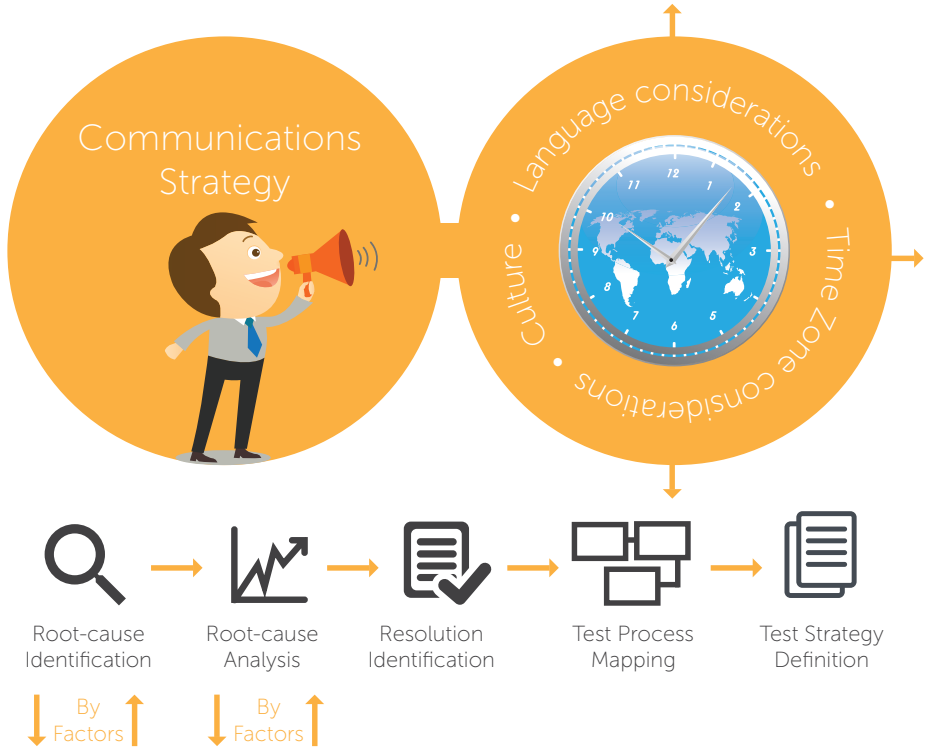
It's very important to understand the difference in work cultures (between offshore and onsite teams). For example, the work culture in China or India is very different to that in the UK. The test process and strategy must take account of this factor and should ensure that neither the offshore or onsite team is alienated. It is very important to win the confidence and trust of both teams. The testing process must ensure active involvement and accountability of offshore teams throughout the project life cycle. The process must also account for all local practices. For example, in Germany it is necessary to

seek approval from the workers' council to carry out testing at the weekend. The key is to embrace the difference in cultures rather than to challenge them.

The other major factors include lack of face-to-face communication, trust, mutual understanding of pain points and regionally specific challenges. All of these require a detailed in-depth analysis to fully understand the root-causes and then to address the resolutions through robust test strategy and test process.

So, is 'offshore testing a 'real' cost-saving model? The answer is it can be, provided everyone involved in the project has a detailed understanding of the issues and the ability to convert all the resolutions into a robust test strategy/process. Brickendon's successful Offshore Test Strategy/Framework helps in detailed root-cause analysis and builds a robust offshore test strategy and process. In short, it helps to ensure offshore testing is the 'real' cost-saving model it was expected to be, without losing any of the quality.

"It is very important to win the confidence and trust of both teams"



Scrum Down for Better Software

"requirements or priorities can change"

The way a software project is managed can make or break it, both in terms of delivering on time and budget, and in terms of the quality of the resulting software. Early project management methodologies used for software projects emerged from hardware and electronic engineering disciplines, but were quickly found to be unsuitable for software projects where requirements are often hard to set in stone before work begins.

How things HAVE been done

Probably the best-known software project management methodology is one of the earliest – Waterfall. So-called because of the way each stage 'flows' into the next, meaning that progress goes only one way and there is no real opportunity to go back and revisit an earlier phase.

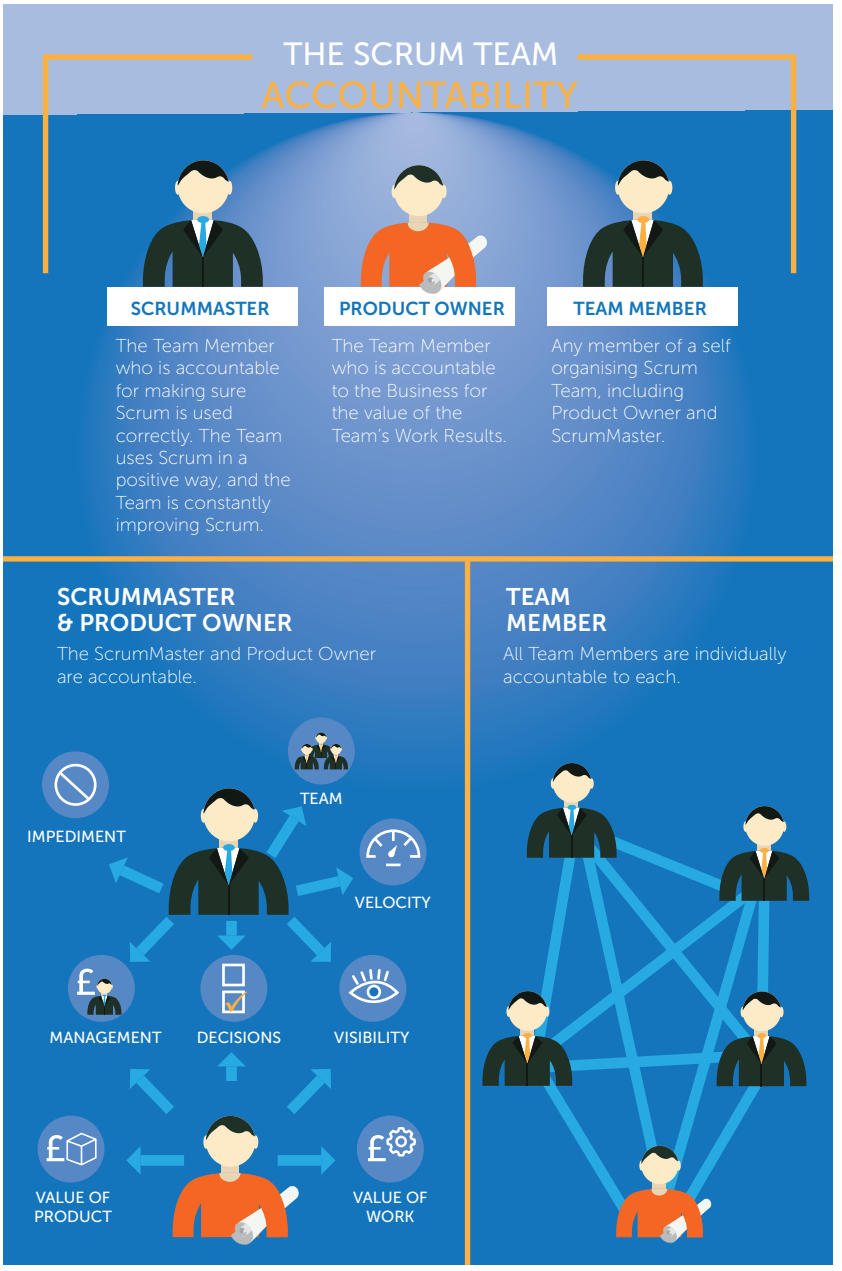
This can present significant challenges for software projects where it is often the case that requirements or priorities change as the project progresses, or technical decisions need to be rethought. It also means that, in many cases, although development is continuing, there's no guarantee that any part of the project can be demonstrated at any point in time, which lowers the transparency of the project's progress with stakeholders.

Why is Scrum different?

Rather than a fully-fledged methodology, **Scrum** is a framework within which a team can design and develop software in an iterative way. Scrum promotes three key pillars:

Transparency has many facets within a software project. Transparency of the process, of progress, and of successes and failures are all important to maintain confidence and momentum.

Inspection In Scrum, this means the inspection of both the process: is work being completed in a timely manner; are we steering the priorities of the project in the right direction; and of the resulting product: is the quality high enough; do the developed features match the original requirements?


THE SCRUM TEAM
ACCOUNTABILITY
SCRUMMASTER
The Team Member who is accountable for making sure Scrum is used correctly. The Team uses Scrum in a positive way, and the Team is constantly improving Scrum.
PRODUCT OWNER
The Team Member who is accountable to the Business for the value of the Team's Work Results.
TEAM MEMBER
Any member of a self organising Scrum Team, including Product Owner and ScrumMaster.
SCRUMMASTER & PRODUCT OWNER
The ScrumMaster and Product Owner are accountable.
TEAM
IMPEDIMENT
VELOCITY
MANAGEMENT
DECISIONS
VISIBILITY
VALUE OF PRODUCT
VALUE OF WORK
TEAM MEMBER
All Team Members are individually accountable to each.

Adaptation to changing requirements and priorities is paramount on many software projects, but it is also important that the process can adapt and learn from itself, for example, retrospection of a past sprint may reveal ways in which future sprints can be improved.

Overview of Sprint and how it works

Scrum splits periods of work into sprints - a period of time less than a month, often two weeks, within which a set of tasks are to be completed. These tasks are agreed in the Scrum planning meeting by the Team Members and Product Owner with the Scrum Master helping them by removing obstacles from this and upcoming sprints. At the end of each sprint, it is intended that any developed code is a 'potentially releasable increment' – that is, the work completed in this iteration can be released, even if only to a development or test environment to be evaluated or demonstrated. This gives greater opportunity for project stakeholders to have regular access to the project, and is more tangible than a progress report.

Tasks are taken from a product backlog, which is where requirements are placed before they are chosen for a sprint. While a task remains in the project backlog it can be continually refined to make sure that enough detail is available to the development team when the task is chosen. Items in the product backlog may start as large, high level requirements, but through refinement it is likely that these will be broken down into smaller tasks.

It is the job of the Product Owner to maximise value of the project to the business by determining the priority order of the features of the project. The Product Owner directly faces off to the business, so it is in his or her interest to continually evaluate the product backlog and prioritise it. In the sprint planning meeting, where tasks for the upcoming sprint are decided upon, the product owner and the development team must agree which tasks will be possible to complete while maximising value of the sprint's iteration of the product.

Within the Scrum framework it is expected that the Team Members be cross-functional, meaning that the team should have the expertise within it to complete any tasks – for example a task may require programming and database work, so the team should include members capable of these disciplines. The team should also be self-organising, they should take ownership of the items in the sprint, ask questions where a task requires further clarification, and communicate properly so that issues are raised in a timely manner – they should not require hand-holding.

Done properly, Scrum presents a great improvement in managing software projects where requirements may frequently change or new priorities override old ones. It allows the team to react quickly to the changing environment around them, while still maintaining control over the current sprint. However...

If the whole team does not 'buy in' to Scrum, it will not work.

If any member of the Scrum team does not buy in to Scrum, the process is likely to fail. This is equally true regardless of that member's role in the team – a Team Member who takes ownership of only his own work and not that of the sprint in its entirety will contribute to the failure of the sprint just as equally as a Scrum Master who does not care to check in to issues and remove obstacles faced by the team. Poor communication between development Team Members, or members taking their own path rather than working as a part of the single self-organising team, will stall progress.

Motivating a team to adhere to Scrum depends on the Team Members themselves. A team who work well together already may fall in to a Scrum process easily, whereas a less cohesive project team with high attrition is unlikely ever to adopt a process where ownership, responsibility and transparency are so highly valued.

Summary

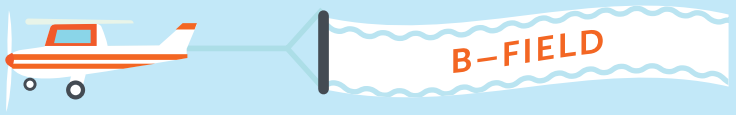
As with any of the myriad of other methodologies for software project management, the most important thing is that the process is suited to both the project and the project team. That being said, Scrum can provide numerous benefits for your software project at all levels.

From a stakeholder perspective, they have visibility into the progress of the project, and can be given access to a tangible, demonstrable iteration of the project on a regular basis.

For the Product Owner, they have a defined framework in which to enter the project's requirements. They can track, amend and reprioritise as they need, and have regular communication with the Scrum team to ensure that the work items being completed are those that maximise the project's value to the business.

The Scrum team have control over what is scheduled into their sprints, allowing them to maintain a productive but sustainable pace. Ownership over the sprint items can motivate better teamwork.

These aspects of Scrum contribute to a successful software project, and help to build and maintain trust between stakeholders and project teams.



Brickendon – **F**acility for **I**nnovation & **E**xcellence in **L**ocal **D**elivery

Brickendon Consulting provide **B-FIELD**; a local business and IT delivery facility, to address the challenges of your resource and location strategy.

Facility: A secure and flexible client-exclusive working environment providing opportunity for face-to-face collaboration.

- Deployment Times: Staff can be deployed to aggressive timelines, utilising the existing pool of experienced Brickendon consultants.
- Local: Our first facility is located in Canary Wharf, with other facilities available to suit clients in other locations.
- Delivery: Dedicated telecoms and peripherals ready for simple plug-and-play of client laptops. In simple terms, B-FIELD works as if you had a team deployed on a different floor of your own office, but without the location costs.

BRICKENDON

B-FIELD can help our clients cut through the cost, location and space challenges in order to meet the demands of their business and clients.

To find out more visit www.brickendon.com or scan this code to contact us now

Read our case studies at www.brickendon.com

Coco-NUTS

The humble coconut has long been deemed a superfood, with nutritional experts claiming its oil, meat, flour, milk, and now water, are the perfect antidote to the stress of modern life. Alongside the bottles of pre-packed water in supermarkets, we are now seeing coconut water, thanks to independent companies such as Vita Coco and some larger players including Coca Cola and Pepsi.

Perfect for hydration, experts claim that coconut water boosts your immune system, cleanses your body against bacteria and can even help defeat the common cold. Whether you believe this to be true or not, there is no denying the recent increase in popularity of the product and the ensuing surge in sales. Vita Coco, credited by some as the creator of the market and currently the market leader in the US and UK, sold almost $270 million worth of packaged coconut water in 2013, 300 times as much as in 2004, and double the amount sold in 2011. As a result, it is one of the fastest-growing beverage categories in the US and UK.

"the perfect antidote to the stress of modern life"

Realising the benefits of coconut water is nothing new. Natives of the plantations where coconuts traditionally grow have long been aware of the water's hydrating properties - electrolytes such as potassium, magnesium, sodium, calcium and phosphorous help the body's cells to generate energy and function as they should. An imbalance in these electrolyte concentrations also stimulates the thirst mechanism, which is no doubt one of the reasons why coconuts have in the past been favoured in tropical climes as a means of rehydration for farmers, hunters and labourers. Moreover, later on, World War II doctors in tropical areas used coconut water as an intravenous fluid replacement instead of saline.

Coconut palms thrive on sandy soils and cope well with high salinity, preferring areas of regular rainfall and high sunlight for good growth.

"coconuts have in the past been favoured in tropical climes"

Traditionally, coconuts have been found near coastal areas and thanks to their buoyancy have been able to use the sea as a means of natural distribution. The coconuts found inland are generally cultivated, and as a result, have thinner husks and higher endosperm (the solid and water content that provides the nutritional value of the coconut) in order to improve the economic benefit of the fruit. Coconut palms are now grown in more than 90 of the world's countries and an estimated 30 per cent of the world's population are dependent on them for their economy as well as food.

Coconut water was first mass released as a packaged drink to the US market in 2004. Much of the initial growth was attributed to Vita Coco, which was started by two entrepreneurs inspired by asking a pair of Brazilians in a bar what they missed from home.

The drink appeared to be the successor to unnatural sports drinks that were already the alternative hydrant to water in an increasingly health-conscious middle class. Cholesterol and fat free, with the aforementioned electrolytes and potassium, coconut water looked like a winner. The product received a further boost with Coca-Cola's takeover of coconut water label Zico and Pepsi's launch of its own version, O.N.E.

The product has also been endorsed by a raft of health conscious

Country	Production (tons) 2009	% of World Production	Acreage under Production (ha)	Yield/ha (tons)
Indonesia	21,565,700	34.9	3,231,710	6.67
Philippines	15,667,600	25.4	3,401,500	4.61
India	10,148,000	16.4	1,903,000	5.33
Sri Lanka	2,099,000	3.4	394,840	5.32
Brazil	1,973,370	3.2	284,058	6.95
Thailand	1,380,980	2.2	237,882	5.80
Vietnam	1,128,500	1.8	121,500	9.29
Mexico	1,004,710	1.6	155,713	6.45
Papua New Guinea	930,000	1.5	216,000	4.30
Malaysia	459,640	0.7	166,400	2.76
WORLD	61,708,358		11,864,344	5.20

Source: FAO Statistics 2009

FUN FACT: The term coconut is actually derived from the 16th century Portuguese and Spanish word coco which means head or skull, not just inspired from the round form but the three divots on the shell are seen to resemble facial features.

Hollywood stars, including Madonna, Demi Moore, Rihanna, and most recently Jessica Alba.

Despite the strong demand in the US and UK, Brazil remains the world's leading seller of coconut water. This highlights the future scope of the market, with the idea that the beverage companies based in the region where coconuts prosper can also successfully produce and sell a packaged version sold at a premium as an alternative to the cheaper fruit.

For the tropical countries it actually draws a comparison with the UK and US' love of bottled water and gives an indication of the possible size of the market. In some areas bottled water has been found to be inferior to tap water, yet in the UK we still purchase over 2.6 billion litres, at an estimated cost of £2 billion annually. Whether this is due to a rise in disposable income, laziness on the part of the consumer, or just clever marketing and the perception that packaged is cleaner, is for now irrelevant as the markets continue to grow.

"draws a comparison with the UK and US' love of bottled water"

"We want to own coconut water"

Controversially, the benefits of Coconut water did come under fire in 2011 as the products were marketed with their superior nutritional and super hydrating value. Yet it was found that sodium, an important electrolyte lost through sweat, was significantly less in Vita Coca and O.N.E coconut Water products than Gatorade. This led to a lawsuit and related $10 million payout from Vita Coco.

Environmental concerns also have to be considered. Coconut palms in North America and Europe are few and far between, and there are certainly not enough to meet demand. This increases the need for transportation, adding to the already high level of greenhouse gas emissions associated with food transportation. In addition, there is also the need for packaging as mass-produced products cannot be presented in the natural husk, as was traditionally the way.

Another concern is the fact that coconut palms become less fruitful as they age, making it necessary for farmers to replace the plants in order to meet demand. This re-farming of the same land reduces the level of natural fertilizers and calls on chemical assistance, which may reduce the attraction of the drink as a healthy option. It is also worth noting that the main coconut farming countries tend to be poorer tropical areas. Unfortunately, in these areas health and safety regulations are often lacking, allowing dangerous, and often unethical practices to be used. In some cases children are used to carry out the work and it has been reported that in Indonesia, pig-tailed macaques are trained to climb the palms and retrieve coconuts whilst chained to their master.

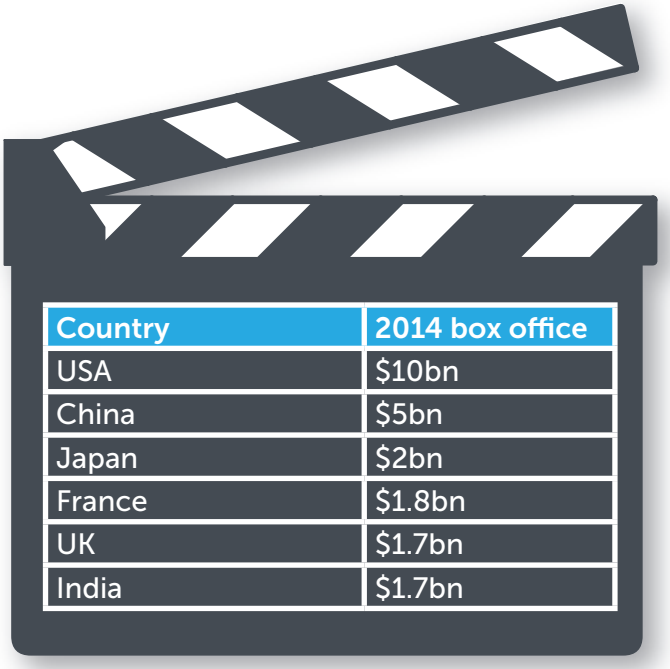
For the moment though, the future looks good for the coconut water industry, and Vita Coco in particular, as it challenges the big players in what is still a relatively new market for the UK and Europe. Michael Kirban, the firm's co-founder and chief executive, was quoted as saying: "We want to own coconut water like Tropicana owns orange juice or Gatorade owns sports drinks". It remains to be seen if he gets what he wants, but with a recent move into the kids drinks market and the obsession with children avoiding unhealthy drinks, it looks like he is onto a winner.

Movie Fail

The BFI's report into the British film industry (2003-2010) came up with a startling discovery: only 7 per cent of British films in this period made a profit. You could say that nobody's perfect, but how can an industry that consumes so much money still continue to receive financing if the vast majority of films are commercial failures? Will the long-term climb in stock price for big studios like Time Warner Inc. (TWX) continue? Or are the studios writing cheques that the theatres can't cash?

The difficulty in answering these questions is down to the complexity of film financing and the rapidly changing sources of film profits. Traditionally films lived and died by their box office returns – you had to sell the tickets first, then when you sell the tickets, you get the money and when you get the money you get a hit.

Box office returns still dominate movie statistics and numbers like Avatar's $1.8bn revenue for a $500m film cost grab headlines. However, this is no longer a guarantee of actual profit. A box office loss is still a loss, but a box office profit does not take into account a host of distribution costs



Country	2014 box office
USA	$10bn
China	$5bn
Japan	$2bn
France	$1.8bn
UK	$1.7bn
India	$1.7bn

"be afraid, be very afraid"

from film prints to advertising. Advertising, in particular, can run into the hundreds of millions of dollars, cancelling out most, if not all, profits. This is partly down to the reduction in vertical integration whereby a production company can no longer rely on returns generated purely from its own studios, distributors and theatres. It is also due to a fall in domestic US box office receipts compared to costs. As a result, studios have realised that they're going to need a bigger market.

Step up China. While the US box office is still the largest in the world, the Chinese film market is growing fast, overtaking Japan in 2013. The Lunar New Year is traditionally a strong month in China with February 2015 being the first month that the Chinese box office took more than the US. The US should be afraid, very afraid.

However, China is a difficult market to penetrate. Until 2011, the Chinese government imposed a quota of 20 foreign films per year, which severely curtailed Hollywood's access to the market. While the removal of the quota by the World Trade Organisation was seen as a coup, it has benefitted China significantly as it coincided with party policy to wield a greater soft-power influence internationally (as shown by the Beijing Olympics in 2008). Instead of a quota, China now has a system whereby all film distribution is controlled by the Chinese Film Group

(CFG). Within China, CFG has the power to pre-screen film scripts and decide the direction of film financing. Whilst CFG is seen as a profit-making organisation, its decisions tend to align with the stated aims of the State Administration of Press Publication Radio Film & Television, which has traditionally censored films for any content critical of the party. Now international filmmakers have realised that a studio's best friend is the CFG. Some of the results are very visible, with increased use of Chinese locations in films like The Dark Knight and Skyfall. It also has a less visible impact, with film scripts edited in advance of shooting to conform to Chinese requirements and additional scenes being shot for Chinese distribution including an additional 4 minute segment in Iron Man 3 to showcase several famous Chinese actors. Studios are happy to compromise because China has made them an offer they can't refuse.

"always been closing"

In addition to reaching for the international box office, film companies have always been closing sales in the post-theatre market. The vast majority of profits for a film now come from DVD, Video On Demand (VOD) and TV releases where the costs are much lower and the market much larger. The complications in these releases come from piracy and a lack of real understanding of how audiences are using these different formats.

The US film industry was last thrown into major confusion in the 1970s when a series of non-traditional films like Easy Rider and the Godfather started making serious money compared to the more generic fare that the studios were used to producing. This led to screenwriter William Goldman's famous quote "nobody knows anything".

Once again we are back in a situation where "nobody knows anything", leading to all sorts of release schedule confusion. Firstly there was the reduction in the 'piracy window' whereby films came out on DVD much closer to the theatrical release. This has since been followed with experiments such as multi-format releasing, where films are made available online, in cinemas and on DVD at the same time, and 'windowing', where a film is released onto, and then pulled from, different formats in sequence so as to maximise revenue. Straight-to-video is no longer the derogatory term it once was, with companies believing it's better to get busy releasing than get busy failing.

In addition to accessing as many audiences as possible through international markets and format experiments, production companies are looking to reduce their market risk. For the last five years, film critics have complained that the number of remakes and comic book movies has made them mad as hell and they're not going to take it any more. Production companies have ignored this, deciding simply that greed is

good and ignoring the criticism. By turning comic books into films or remaking classics they are accessing a 'built-in' audience of fans who will watch the movie independent of its actual quality. The downside is a reduction in funding for original stories that could have been a contender.

"an industry that is like a box of chocolates"

Another popular technique is to share risk across production companies. Up until the 1990s most films were made by a single company that shouldered all the risk and benefitted from all the profits. Recent movie-goers will have noticed that the opening sequence of most films now involves sitting through several animated logos as the roster of film financers is called. This distribution of risk is an attempt to improve the predictability of returns in an industry that is like a box of chocolates, you never know what you're going to get.

From this we can see a trend towards an increase in revenue sources but a decrease in income per source. So why are so many film companies profitable if so few films are returning a profit?

There is talk about the increase in costs due to union fees, but there have always been inventive ways to get around these restrictions (for example, the varied architecture of Toronto allows it to stand in for any American city with the added bonus of a 16 per cent tax break on Canadian labour costs for film shoots). The real answer probably lies in Kevin Smith's interview with Scott Derrickson to discuss his film The Exorcism of Emily Rose, where Derrickson stated:

"I had 5% of the net of that movie. That was in my contract. And it cost $19 million. And it made $150 million worldwide. There's no net. That's how movie math works."

If you can handle the truth, then there it is: nobody knows anything except the accountants.

Apologies to Some Like It Hot, Top Gun, Scarface, Jaws, The Fly, Psycho, The Godfather, Glengarry Glenn Ross, Shawshank Redemption, Network, Wall Street, On The Waterfront, Forrest Gump and A Few Good Men for mangling their quotes.

Contributors

James Baker

Chris Burke

Dean Gammage

Paul Heffernan

Frida Johansson

Lalin Liyanage

Priyanka Parekh

Mark Rogers

Claire Shoesmith

Biplab Sinha

Nathan Snyder

Richard South

Richard Warren

With special thanks to

David Brimley

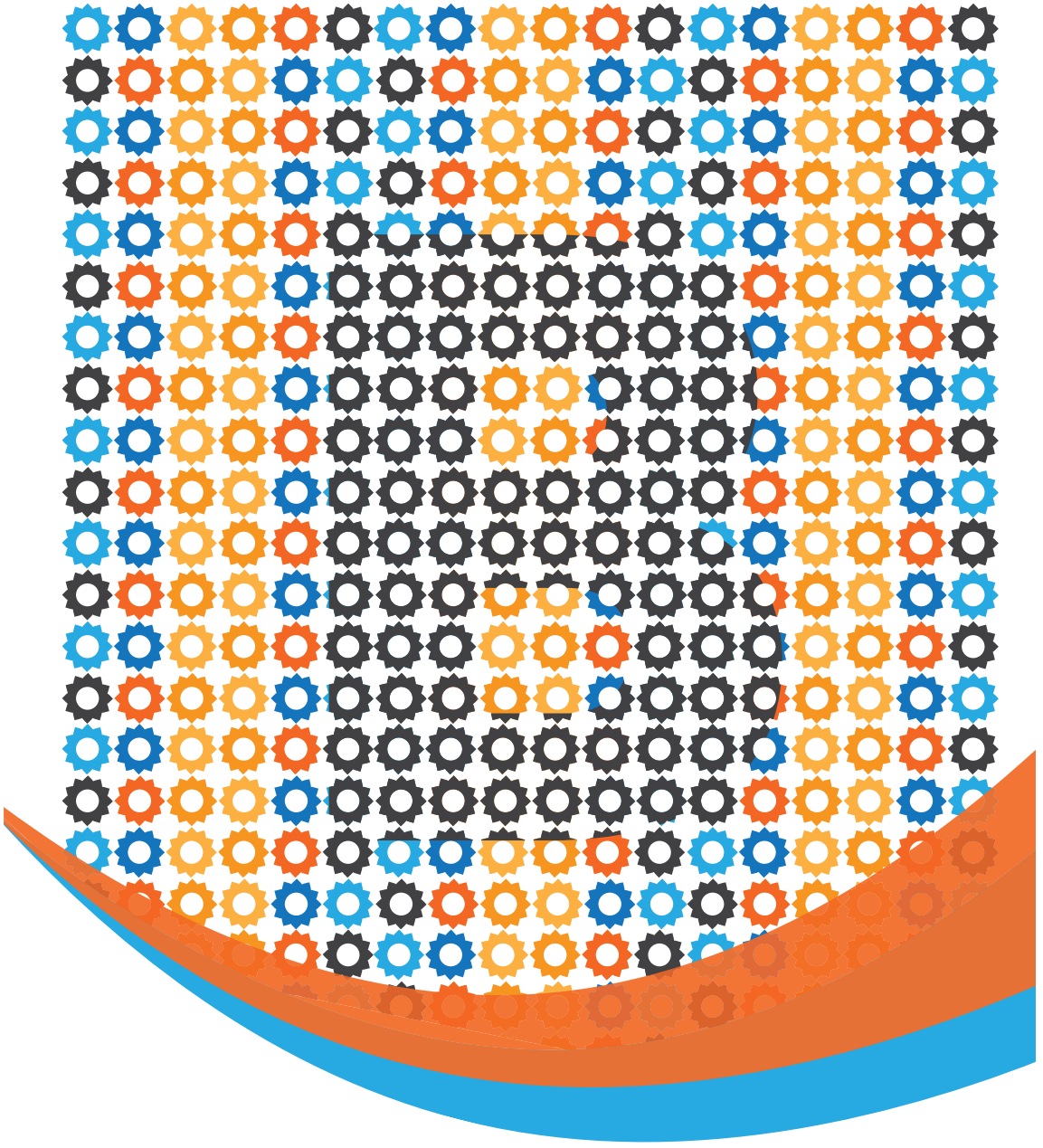
Brickendon provide consultancy services to solve the challenges, both internal and external, faced by businesses operating in the financial markets.

Today's business and trading environment is ever gaining in complexity. Over the last few decades, we have seen that the ability of organisations to remain competitive in the overcrowded financial markets is critical. An increasingly challenging regulatory environment has also made it essential for market participants to have a clear understanding of changes in order to drive their own strategic vision.

At Brickendon, we undertake proactive research in order to be able to respond to industry developments in the financial markets as they happen. We constantly perform in-depth analysis and evaluate the operational implications in banking and trading organisations. We are committed to maintaining high-level research integrity in order to provide independent and first-class solutions to our clients.

Contact us at:

LEVEL 30, 40 BANK STREET
LONDON E14 5NR
T +44 203 693 2605
E INFO@BRICKENDON.COM
W WWW.BRICKENDON.COM



BRICKENDON

Client aligned, business focussed