FRS Invest | Pro™

a Constellation Software Inc. Company

Machines for Doing and Humans for Reviewing

The role of automation in building a leaner, more tech savvy operation

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This paper is adapted from the keynote speech delivered by Matthew Baldwin from Financial Risk Solutions (FRS) for the Fund Management Operations Summit, November 2020.

While 2020 has thrown up many difficulties and challenges, it has also provided an opportunity for the investment and funds industry to take a step back to review and refresh our operations, both on the technology front and with our teams, to ensure we weather this storm and are successful in growing our firms and staying resilient in the years to come.

The catchphrase I want to frame this discussion with is "Machines for doing and humans for reviewing." We coined this mantra at Financial Risk Solutions (FRS) to keep us focused as a technology company on ensuring our own operation is lean and efficient and also in thinking about how we deliver this same value to our clients. Formed 21 years ago by a team of actuaries and technology experts, FRS provide fund and investment administration software - InvestPro - to life and pensions firms, outsourced fund administration providers, wealth managers and asset management firms.

To make sure we are on the same page, let's start with a definition of what tech savvy actually means. To me it isn't being able to code or having the ability to decompile a binary file – rather I see it as being able to competently take on new software and being adaptable to change. This definition applies to individuals as well as organisations.

I believe the investment and funds industry can actually learn a lot from technology firms, and in this paper I want to leave you with some ideas on how to think about streamlining your operations both in terms of technology and your teams.

So let's break the topic down into its two constituents starting with the role of automation in creating a leaner, tech savvy operation or as we frame it machines for doing.

And let's start by addressing the leaner aspect of the topic. Being a tech company naturally puts us ahead of the leanness curve versus other businesses. There are two reasons for this. Firstly, technology and automation are always our first thoughts, unlike perhaps in funds businesses where compliance, regulation, the investment process itself are given most thought.

Secondly, being lean is a natural state for all software business (or at least it should be). In tech companies, people are our largest overhead. That doesn't mean to say it is about having fewer people, but it is about the taking tasks off them that we can do via automation.

Which leads us to modern technology. I've spent all of my 35 year career in fund and investment admin and I have seen significant technological change in that time. I still remember clearly the introduction of the first PC's into my workplace in 1987 and how that dramatically changed our world. Being part of an investment operations team that was implementing a new and exciting PC based system on green and black screen PC's with a Novell network seems prehistoric given where today's technology is at but at the time it was truly cutting edge.

My reason for sharing this story is that the operational structure – the procedures, the team makeup and the control frameworks that we had in place in 1987 are completely inappropriate for 2020 especially given the work from home world that we all find ourselves in and the capabilities of modern exception based systems. Yet, we still see firms operating on outdated systems that require multiple complex spreadsheets to get the processing done.

Why is this the case? It's interesting that the rate of adoption of newer technologies by individuals is rapid - think iPhones, FaceTime, Zoom and Teams, Google maps and satellite navigation - but as organisations, especially in financial services, we are slower to adopt. To illustrate this a little more, satellite navigation technology is something we use without any thought. Very few of us would consider navigating using a physical map these days. But some firms in the investment and funds industry are still using the equivalent of a physical map. By this I mean the black and green screen tech of thirty years ago.

A large part of the problem, I believe, is the perceived pain of change. As individuals we don't give much thought to software upgrades on our phones. They are seamless and painless. We only need to take a few minutes out and then - mostly - everything works as expected and we carry on with our lives. In financial services however, the risk associated with software implementations and upgrades is perceived to be high and so it is put off either indefinitely or planned over long cycles.

I've seen firms delay an upgrade for 10, 12 or even 15 years. The problem with this approach is that the upgrade effort becomes so big that it can be bigger than the original implementation and ironically, this actually increases the risk. Sticking with the phone analogy, this is like changing from a Nokia 3220 brick to the latest iPhone 12 in a single step – think of how painful that would be in terms of setting and bedding down all the new logins and features.

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The perceived risk is high because of history and experience. We all know about or may have been involved in some software project failures. And anyone who has been following the UK's attempt to build a track and trace solution or even count the number of COVID-19 cases without the spreadsheet filling up will know they still occur.

Why has it historically been difficult? The cartoon above has been around since the 1960's or 70's and illustrates in a fun way the many points where things can go wrong during a project. All of which are essentially due to assumptions and poor communication.

But fortunately it doesn't have to be this way. The modern agile approach to software turns this completely on its head. Software companies who use 'continuous deployment' methodologies can offer software upgrades closer to the app model. Not quite plug and play, but in two key areas it is possible to remove the biggest risks and pain points of software implementations and upgrades in our industry.

REMOVING THE RISKS OF SOFTWARE UPGRADES WITH CONTINUOUS IMPLEMENTATION

Last year at FRS we implemented virtual continuous software deployment for InvestPro. Continuous deployment is part of an agile approach to software development and delivery. In simple terms it enables faster delivery of features to clients and improves the quality of our software.

Continuous deployment allows automated upgrading of the client's software to the latest release and automated testing of that upgraded release. This enables our DevOps team to work with clients and carry out early testing on the latest version of InvestPro to remove the uncertainty in an upgrade or to ensure compatibility with a client's requirements before deployment of InvestPro.

To achieve this, we clone each client's production environment internally and wired it into the nightly software builds. We couple this with automated testing, using client-specific scenarios for each environment. Some of the automated tests are created by our clients themselves. The result is that both the client and FRS DevOps team have a daily view of each system change and its impact on every client.

As part of the agile mindset, our clients are encouraged to explore new versions of our software. These clones can also be hosted on the public cloud, allowing clients to directly interact and carry out early testing on the latest development copy of the software.

Whilst system change and software refreshes are high impact decisions for the enterprise, this is a great example of how a modern software vendor can lower the entire project risk and enable the benefits of change to be analysed and prototyped pre-delivery.

Overall this allows for more frequent refreshes and less effort with reduced risk. I would encourage you to ask your CTO and your software vendors about their approach to continuous deployment and automated testing. If it isn't world class you will be paying for it via time consuming and expensive manual testing during implementation projects and upgrade cycles.

Client Type	Staff Count (FTE)	Multi Asset Funds	Fund of Funds	Mirror Funds	Schemes/ Individual Accounts	Funds per FTE
Pensions Fund Admin	6		6,000	1,000	800	1,300
Third Party Administrator - Life Funds	2.5		370			148
Life and Pensions Organization	3	150	1,925			691
International Life Co	3	300				100

While technology advancements that have occurred over the last 30-40 years are nothing short of game changing, unfortunately many businesses including software businesses have failed to keep pace. Some investment firms and outsource service providers are still running software from that era rather than the highly automated and exception based solutions that have evolved in the last 15-20 years.

These modern systems now enable you to have fewer people in the investment admin teams as illustrated by our clients' experience as per the slide on screen now which shows the full time equivalent headcount, the number and type of funds as well as the funds per FTE from four of our clients.

The table above demonstrates examples of operational efficiencies some of our clients have realised using InvestPro software. The 'International Life Co' on the last line of the table is a great case study of the benefit of automation. Prior to using our software, this client outsourced their 300 daily priced funds to a global custodian. The outsourcer used a popular Investment Accounting software package, yet still required 107 spreadsheets to complete the daily process.

Bringing that process back in-house and deploying InvestPro eliminated the need for any spreadsheets. Automation meant efficiencies were gained and the number of staff required was halved. Previously six staff were required to oversee the outsourcer, whilst today three people process the 300 daily priced funds in-house on shorter timescales and with lower operational risk.

INVESTING IN TECHNOLOGY CHANGES THE SKILLSET

Investing in modern exception based systems changes the skillset of the team significantly. Not only must they be more technically savvy but also more investment admin savvy. By that I mean they must have a thorough understanding of the end-to-end process and the relationships between all of the steps involved.

If you are running the 'type-writer' technology on the image above right, the processes, procedures, control frameworks and the type of person you recruit are going to be totally different to a business who is using the 'laptop' technology on the left. Put another way, think of the what someone with the right training can do with the laptop compared to what someone with the best training in the world can do with the typewriter.

And the connection here with Investment systems – is that older systems relied heavily on manual entry and user-initiated processing. You knew everything that was going on because it was all done manually and therefore people's roles and knowledge of the process was often siloed – you had a specialist corporate actions team, a settlements team or even a data entry team.

Controls were therefore very siloed and process driven. By process I mean you followed a process to complete your work or clear a system error rather than having to understand and manage the issue or investigate an exception. Now with automation and exception-based processing you need a totally different skillset. The team must understand exactly what the system is doing and what the exceptions mean. It's a much more holistic view of the process that is needed now.

This generates a different set of needs for training and learning, as well as documentation.

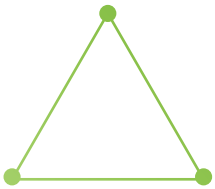
As an aside, this is why spreadsheets and end-user computing tools can be so dangerous – the handoff from the person who built them to a new operator is fraught with risk. Further, the ability of someone to understand exactly what the spreadsheet is doing is often limited due to lack of documentation, help desk support, testing etc.

Of course a modern software solution from a well run software company makes it easier to determine what the issue is but your training and education processes need to provide your team with the abilities and knowledge to thrive in this new world.

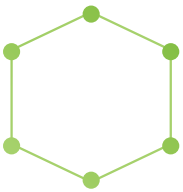
HUMANS FOR REVIEWING

This provides a nice segue into how we go about building our teams, and how we think about hiring and career progression given the expectations of today's workforce are shifting and many of recruits for the roles we regularly hire for, such as software developers, implementation consultants and business analysts, are likely to be of the Millennial and Z generations.

KEEP YOUR TEAMS SMALL AND YOUR PROCESSES LEAN



3 Members
3 Links



6 Members
15 Links

12 Members
66 Links

50+ Members
1225+ Links

In the early days of Amazon Jeff Bezos introduced a rule - every internal team should be small enough that it can be fed with two pizzas. The thinking behind this was and is simple. A smaller team spends less time managing timetables and keeping people up to date, and more time doing what needs to be done.

His rule is backed up by science as the illustration above shows the number of connections needed between team members as the team size grows. In fact it was Harvard researcher J. Richard Hackman who concluded that four to six is the optimal number of members for a project team and no work team should have more than 10 members. According to Hackman, this is because communication problems increase exponentially as team size increases.

Small teams are clearly more efficient, but scalability is also important here. Again it was Amazon who led the way for many a tech firm. And it was another Jeff Bezos edict that drove scalability – this one was that teams should only work with each other in a systematic way. If a team needed data on shoe sales to help with a decision on resource allocation they could not email the analytics team and ask for the data. They had to go to the analytics dashboard themselves and get it. If that dashboard didn't exist then it needed to be created. Crucially this approach needed to cover everything!

From there is was almost an afterthought to take the obvious next step and let others use the same technology that Amazon itself was using internally. This approach has driven a huge amount of innovation and growth at Amazon including the creation of the Amazon Web Services business and their newest initiative the Delivery Service Partner which was launched in the UK recently.

THE "NO PASSENGERS" RULE

Our approach is also based on similar simple rules. The "no passengers" rule is self-explanatory and is an important guideline, not just on a day to day basis, but also during the recruitment process. It can be very hard to accurately define from someone's history what their competence really is – and specifically their competence to solve problems rather than to follow procedures. One of my colleagues refers to this as looking for "masters of the machine" rather than a cog in the machine.

We use a series of tools when recruiting to get behind the CV so to speak. As you would expect we use online tools ranging from asking candidates to solve algorithms through to psychological assessments. This certainly helps determine those who will be good at the crucial aspect of their role, although it won't tell you if they will turn up to work on time.

So small teams comprising the right people working in a systemic manner to drive scalability is a great start – but we would add one more.

AUTOMATION TO DRIVE EFFICIENCY

We are constantly on the lookout for things that don't scale. If someone's workload increases when we take on new clients, this is a red flag for the need to automate. This has an unusual effect on people's day to day work over time. We have found that promotion, and for that matter your career path within FRS, isn't the same as it might be in other organisations.

Promotion is actually delivered through the removal, through automation, of lower value activities from the individual's job description. This is an ongoing process as the list of tasks that can be automated grows every year – the zone of automation if you like.

We find this approach improves staff retention but presents a challenge with communicating and even planning someone's career path. However, from our experience this tends to suit Millennial and Gen Z recruits because they value workplace culture, collaboration and organisations that embrace technology over climbing the corporate ladder. These generations have no qualms about jumping ship and selling their skills to the highest bidder either, so it's vital that firms stay relevant and invest in new technologies to interest and attract the best talent.

A great example of how old technology can impact recruitment and add hidden cost to your business is with the programming language COBOL, this is a language that is still used by many in our industry and which first appeared around the time rationing from WW2 was ending – around sixty years ago. Many developers specialising in this are nearing retirement and finding graduates who are not only trained in this language, but who also have an appetite for developing pre-internet solutions, is near on impossible.

The amount of time and budget that needs to be invested in recruitment, interviewing, onboarding and training staff is a massive cost. If this inefficiency is in the software companies, then they are passing it onto the industry. If it's the industry firms that are inefficient then the cost is borne directly. The best employees will not be retained by firms that are using them to firefight problems associated with old technology. This is an area where I don't believe firms are pushing vendors hard enough on.

In summary, there is never a better time to invest in your operating model. In fact, operating model improvements should be a continuous process. Taking some tips from the tech industry there are some useful principles firms can lean on to create a leaner, more tech savvy operation.

If there were one key takeaway I could impress upon you, it would be to automate everything - from your investment admin process to the monitoring of systems, your implementation projects and system upgrades. Look to automate as much as you can to increase efficiencies and reduce risk. Automation also provides your people with more interesting roles that see them reviewing rather than doing – but remember this requires a different way of thinking about training, knowledge transfer and even career progression and don't let the team size become to large. It can all be summed up by remembering our mantra "Machines for doing and humans for reviewing."

Finally, challenge your software suppliers to ensure they are efficient and well managed – the cost of change is less than you think with the right supplier.

About Financial Risk Solutions Ltd (FRS)

With over 20 years delivering Investment Administration software, Financial Risk Solutions Ltd (FRS) is a trusted technology partner to life assurance, wealth and asset management firms worldwide. Led by an expert team of actuaries, compliance and IT specialists, clients license FRS software to help navigate the ever-changing challenges of growth, regulatory pressures and competition in the industry.

The award-winning* InvestPro™ platform is relied on by over 60 blue-chip financial services and BPO clients to reduce operational costs, increase efficiencies and mitigate risk in the manufacture and management of investment products. More than150,000 funds are managed on the Invest|Pro™ platform today.

Delivered on-premise or cloud-hosted, Invest|Pro™ securely automates multiple complex fund administration processes including unit-pricing, cash allocation and rebalancing; oversight and validation of operational activity performed by outsourced partners; and in Europe monitoring and reporting for PRIIPs, KID requirements, and Pillar III asset reporting for Solvency II.

FRS is part of the Constellation Software Inc. group and headquartered in Dublin, Ireland, with offices in Hong Kong and Sydney.

For more information visit frsltd.com or follow FRS on LinkedIn at www.linkedin.com/company/frs-ltd

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21 YEARS

Matthew Baldwin is a financial software specialist with a 30-year career in Asset and Wealth management in the areas of Portfolio Accounting, Mutual Fund Processing and Risk and Compliance software.

*2020 - GRC Product of the Year - Asia Risk.Net Awards, 2019 - Best Solvency II Tech Solution - Insurance Asset Management Awards, Pensions Technology Provider of the Year - Irish Pensions Award, 2017 & 2018 – Tech Firm of the Year – Insurance Asset Management Awards, 2016 – Tech Provider of the Year, Governance Risk and Compliance – Risk.Net Awards.

FRS Invest | Pro™
a Constellation Software Inc. Company

Matthew Baldwin

Global Head of Sales
Financial Risk Solutions

matthew.baldwin@frsltd.com