

The logo for EiB, consisting of the letters 'EiB' in a bold, blue, sans-serif font. The 'i' has a dot. The background of the entire page is a faded image of a modern building with a glass facade and industrial pipes.

**E X C E L   I N   B U S I N E S S**

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Automated Analytics. Powerful Insights.

# WHERE ARE THE ROBOT UNDERWRITERS?

InsurTech, Underwriting Profitability and The Impact of Data Quality in  
the Insurance Industry.

An Excel in Business Report | March 2018

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## OUR EXPERTS



### **Robin Patterson**

#### **Performance Analytics Manager at Charles Taylor plc**

Having plied his trade as an Underwriter for over 10 years, Robin joined Charles Taylor plc in 2017, as their Performance Analytics Manager.

Focusing on the delivery of technology enabled solutions, Robin has a breadth of experience on reinventing established processes and implementing future-ready solutions that deliver measurable benefit and improve data-driven decision making through InsurTech.

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### **Garry Watson**

#### **CEO, Walsingham Motor Insurance (MGA)**

Garry has been the CEO at London based MGA, Walsingham Motor Insurance, since 2012. Providing commercial Fleet Products to the UK Broker Market, Walsingham write in excess of £20m GWP, and are early adopters of InsurTech, which has significantly helped them achieve their operational objectives writing a profitable and sustainable account.

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### **Nick Pester**

#### **Head of Insurance & InsurTech, Capital Law LLP**

Nick joined Capital Law as Head of the Insurance and InsurTech practices in 2017, having spent 13 years at City insurance firm RPC. His expertise encompasses everything from traditional insurance work such as policy coverage and wordings, recoveries and liability claims, to a significant amount of regulatory and compliance work.

On the InsurTech side Nick assists with everything from T&Cs reviews through to setting up whole new MGAs and carriers.

## OUR EXPERTS



### **Stephen Goldstein**

#### ***Country Director USA, Pivot Ventures + Author, Daily Fintech***

A Global Insurance Executive with over 10 years of experience across the US, European and Asia in Distribution, Operations, Audit, Market Entry and Corporate Strategy.

Stephen is currently working with Pivot Ventures as the US Director, advising start-ups on their marketing, business development and other growth initiatives. Stephen is also helping InsurTech Asia Association to build a more collaborative insurance ecosystem between the US and Asia.

Further, Stephen is an Author for Daily Fintech, a Fintech trends and analysis blog with over 22,000 subscribers from across 130 countries.

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### **Nico Kichenbrand**

#### ***CTO, Excel in Business (EiB)***

Chief Technology Officer at Excel in Business, Nico Kichenbrand has been developing analytical applications for over 20 years.

Having previously worked at Gentia Inc., a NASDAQ listed pioneer in OLAP technology, Nico then spent 2 years as Head of Business Intelligence at Sage before establishing EiB in 2017.

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## THE AUTHOR



### **Lauren McMenemy**

#### ***Founder & CCO, The Content Type***

Lauren is a freelance journalist and content writer with over 20 years' experience.

Before turning freelance, Lauren spent 10 years working in-house for the likes of Sage, TMF, the NHS and the Guardian. Lauren has worked with a wide spectrum of global experts in the fields of legal and financial compliance to create thought leadership and regulatory updates which challenge the status quo.

## Executive Summary: Automation is coming

There's no hiding anymore - the robots are coming to the world of insurance. But while insurance has traditionally been quite reluctant to adopt new technologies - being a risk-averse industry to the core - InsurTech is now sufficiently mature that it's piquing interest.

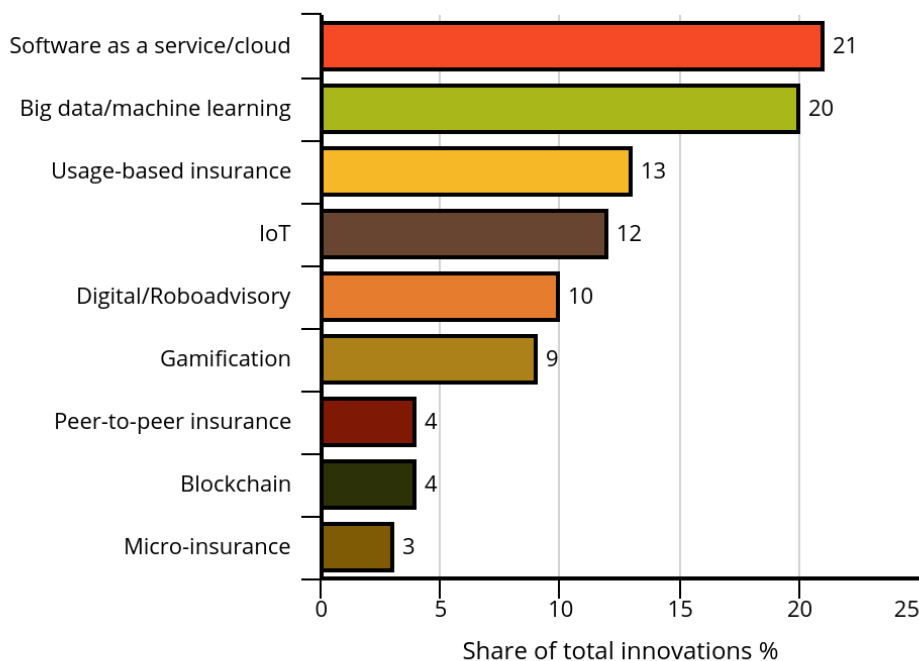
"Perhaps traditional insurance lines in marine, aviation and transport have not needed to innovate in the data and analytics space to the extent of higher volume and more homogeneous lines," says Robin Patterson of Charles Taylor. It is worth noting that Charles Taylor now has an entire organisation dedicated to InsurTech.

"With overcapacity squeezing margins and a high cost of doing business, efficiency savings and pricing insights may now appear a more attractive means to protect the bottom line."

It's the pricing and underwriting side of firms that are set to feel the impact of InsurTech first, and with good reason. Underwriters can typically take 4-5 days each month delivering MI to the business; often, they're using data that is inaccurate, either through legacy systems, lack of comprehensive data validation, or human errors in input.

**"THE MARKET FOR UNDERWRITING IS SET TO GROW BY OVER 60% BY 2020"**  
- STATISTA

### Leading Global Innovations in the InsurTech Industry in 2016



Source: Tableau

An underwriter spends 48-60 days underwriting each year. So, when you consider the cost of that high-value employee delivering inaccurate MI for strategy decisions on the back of bad data, you can see why automation and accuracy are becoming essential to firms seeking cost efficiency.

In this report, we will look at the role of the underwriter in this new world, and the need for those underwriters to be working with better data. The thing to stress is that yes, automation is coming, but short-term thinking will not help here.

Companies must think of the long-term impacts and strategies that can be brought by embracing automation and freeing up talented staff to tackle the bigger picture.

### **The legal view: Nick Pester of Capital Law LLP on the impact of InsurTech on the insurance industry**

We're now moving on from the knowledge-gathering stage. Last year was very much insurers learning what InsurTech was, what it could do for them, and some traditional incumbents ignoring it altogether thinking it was a fad that would blow over.

I think this year there will be a greater focus on testing and implementing ideas and partnerships. A lot of insurers who had originally opted against getting involved are now realising that technology will continue to advance and play a greater role in the whole process.

There has also been some resistance to change in terms of the prevailing culture within the market – things have been done in a certain way for many years and some don't want that to change. But I think we're in a perfect storm at the moment in that change is now being driven by the economic reality of the situation. Rates are not going up. There's too much capacity and too much competition in the market.

I do feel this is going to be a big year actually, as far as InsurTech is concerned. I think we'll see some big partnerships, and some traditional incumbents going in totally unexpected directions. Also expect to see a lot more external capital entering the market (e.g. Amazon) looking to disrupt the status quo.

## **The new role of the underwriter?**

"MGAs have a unique role in the insurance life cycle, and they will either innovate and evolve or be eliminated from the food chain," writes Cory Crosland for [Insurance Thought Leadership](#). "The insurance industry is one of the oldest and most straightforward businesses in the world. It's a numbers game. Risk gets calculated, quantified and priced. If the odds work out, the house always wins."

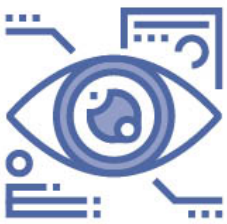
The underwriter is largely considered the most at-risk from InsurTech thanks to AI's predictability and reliability, but this technology also provides a golden opportunity for underwriters to move from being hands-on to a much more strategic advisory role.

"We see technology feeding into what is effectively AI - automated underwriting - so you've got a constant loop of data being harvested, amalgamated, analysed, and feeding into algorithms to actually produce the pricing," says Nick Pester of Capital Law. "It also means we can have much more by way of on-demand insurance - hiring a car for a day, for example, or insuring a property for a week."

This, in turn, impacts the work that an underwriter performs, regardless of company size or where in the insurance chain they sit.

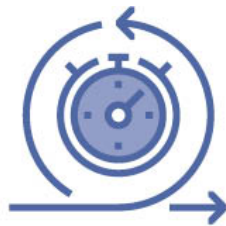
Indeed, underwriting is seen as one of the most promising areas for intelligent automation.

Unlike traditional underwriting, automation leads to objective, consistent decisions based on set rules. It can also make those decisions based on all possible previous applications and claims if desired - all in the blink of an eye. This means the automated underwriter will produce the same assessment on the same application every time, with no human bias or human error creeping in. Pricing remains consistent and predictable.



**87%**

**of Insurers agree that technology is no longer advancing in a linear way, but rather at an exponential rate**



**86%**

**believe they must innovate at an increasingly rapid pace simply to retain a competitive edge**



**96%**

**think that digital ecosystems are having an impact on the insurance industry**

**"UNDERWRITING IS SEEN AS ONE OF THE MOST PROMISING AREAS OF INTELLIGENT AUTOMATION"**

**Source: Accenture**

"Our underwriters are divided on this," says Robin Patterson of Charles Taylor. "Some of the more traditional underwriters do not see the need to "over-complicate" by developing innovative pricing techniques or using analytics platforms in the search for new insights.

They are skeptical about the benefits, and perhaps perceive that they can manage just fine without exploring these new opportunities.

"On the other hand, some are optimistic that newer techniques and possibly AI could be used to help them better understand and price risk - to be able to process such vast volumes of data that hitherto would be impossible."

Pester says in the short term we should expect to see a lot more automated underwriting: "It's really a simplification of the underwriting process. When I first started in insurance in 2005, it was still the norm to have human underwriters producing pricing for home and motor.

**"40% OF LIFE  
INSURERS  
WORLDWIDE, ARE  
STRUGGLING WITH  
UNDERWRITING  
AUTOMATION"**

**-STATISTA**

That just doesn't really happen anymore unless there's a particular issue with a proposal. They tend to have pricing analytics teams responsible for algorithms that produce the price, so for these guys they've already reduced a considerable amount of exposure to change.

"The best underwriters will adapt by taking on more of an oversight role on books of business - it will be less about individual risks, although there will always be very large complicated corporate risks that do require a more hands-on approach, but other than that these guys will be much more sitting in an overarching role looking at books of business and judging profitability."

And with those high-value underwriting resources no longer manually combing spreadsheets to decide pricing, they can instead turn attention to helping grow the business and inform deep strategy instead, bringing invaluable insight that would otherwise have been tied up in manual processes.

### **The need for better data**

It's cost pressures that are driving the increased interest in InsurTech. To date, insurers have been reticent as data was notorious for being error-prone and unreliable. AI and InsurTech are helping to address those concerns.

"Not having a single version of the truth has probably been a major contributor to a lack of confidence in MI; results that inexplicably move over time or do not agree with other benchmarks," says Robin Patterson of Charles Taylor. "Always being able to reconcile the data has got to be the first barrier to address."

Those data quality issues aren't necessarily common knowledge; many believe smaller firms are oblivious to data quality issues, and forge ahead with making strategic decisions based on bad data. Patterson has this advice for mitigating bad data: "Develop some tighter internal procedures for data entry and to develop a software-based mechanism to check it. Automate to the greatest extent possible to avoid human entry error."

He says the insurtech boom is taking in MI data and analytics "more and more": "Exploring new ideas and techniques has the support of some of the most senior managers in our business as an area to focus on."

And bad, inaccurate data just drives further mistrust in the technology. Nico Kichenbrand, CTO at EiB, says machine learning is showing "a lot of promise" in learning customer behaviours, claims patterns, and so on, but data quality must improve before this can really take hold.



“Data quality and lack of integration is by far the biggest issue in delivering MI to the insurance industry,” says Kichenbrand. “The percentage of errors, incomplete and missing data in this industry is very high and this directly impacts the quality of the MI data being provided.”

“There are many tools around that can visualise MI data quickly, but very few that focus on data quality and managing the insurance business logic properly. It is easy to put a simple earnings model together in Excel, yet this quickly becomes a nightmare to manage. Considering that MGAs earnings are based on their loss ratios over a 24-36 month period, it is frightening that they rely on error prone and incomplete Excel models for this. I strongly believe that better data quality is essential for any MGA, and the sooner they invest in MI technology that centralises and manage their MI data, the better.”

A [recent survey](#) by Bain found that more than two-thirds of companies are investing heavily in data and analytics. Not surprisingly, they wrote, 40% of those expect to see “significantly positive” returns on their investments, with another 8% going as far as predicting “transformational” results.

“Even so,” [write the authors](#), “30% of these executives said that they lack a clear strategy for embedding data and analytics in their companies. And despite the best intentions of the 70% whose companies have strategies, many will lose their way with their data because of one simple reason: people. A company can have the most sophisticated tools and the most brilliant data scientists, but its efforts will fail without the behavioural changes necessary to support decision making and action.”

Kichenbrand says initial focus should be on data collection and quality, but that the demand for MI information will quickly take over.

This won't be a problem if there is a solid foundation.

“By using hand-crafted spreadsheets, the MGAs mask the problem until they have no choice but to address it. It is much easier to implement better business practices and additional source validation than trying to fix the errors once you have thousands of transactions and under pressure to deliver quality MI.”

In addition, pressure for MI is not just internal given many insurance organisations have investors such as carriers.

Carriers can rightly dictate their MI requirements to the MGA, which needs to respond quickly and accurately or risk serious ramifications. Carriers can (and do!) easily withdraw their support if the MI they receive does not prove the MGA is on top of their business.



**BY USING BETTER DATA IN THEIR MI, WALSINGHAM COULD SHOW THEIR REINSURERS WHERE THEY HAD REDUCED EXPOSURE BY 33% OVER THE LAST 12 MONTHS.**

### **The MGA's view: Garry Watson, CEO of Walsingham Motor Insurance, on data accuracy and MI in the insurance industry**

We employ six underwriters, and we're all about making sure we deliver a good profit for the carriers behind us. What we found in the early years of our trading was that the bespoke software that was available just didn't have the level of management information behind it to be able to do that job. So, we struggled badly for two or three years; everything we did had to be done manually, from downloads of spreadsheets, manipulating, and so on. That brings two major problems. First, the possibility that when it's being downloaded, mistakes happen with the Excel spreadsheet. And the other side is the more obvious one: do you trust the data?

We engaged EiB and their Insurance Analytics software near eliminated the manual side of our reporting. Previously, we downloaded masses of data into Excel and produced Pivot Tables to slice and dice the data in the way required. We hoped rather than knew the results were fine. When we first ran our data through we found 10-15% of our data wasn't what we thought it was. We had claims being reported that in theory were before a policy period started! We had mid-term adjustments (MTAs) happening that were outside a policy period. Of course both are impossible, but with Electronic Data Interchange (EDI) transactions updating our back office, the errors originated from original human interaction, which were then replicated into our database. The EiB software created a long list of transactions which we then had to cleanse.

The impact of better MI and better data, has been significant. The obvious one is that I employ underwriting staff, all of whom are trying to produce their own reports, which previously added a considerable additional cost.

The bigger thing, though, is being able to make underwriting decisions with degrees of certainty. Bad MI means making decisions based on bad information. We discovered some amazing insights once we began producing good data. As an example, the South West of England is an area that we've always targeted for our taxi business; it's renowned as being successful and Devon and Cornwall are not the busiest of roads. We were heavily trying to promote that area, get more business there, only to find out when we had some proper MI that it was one of our worst performing areas. That's pretty fundamental.

Look at where we are today, and we've been asked by our re insurers to justify why our average premiums are dropping while the market is going up. At the push of a button we can identify the fact we've reduced our exposure in bad postcodes - Glasgow, Manchester, Greater London - by 33% in last 12 months. We can identify that immediately now. It justifies what we've been doing in our decision-making process.

## This is not a short-term exercise: think long-term

Whatever your role, whatever your thoughts, automation has arrived in the insurance market - for better or for worse.

“InsurTech is aiming to do to the insurance industry what Fintech did to the banking industry,” says Nick Pester of Capital Law. “Customers are demanding more information, more flexible products, efficient claims handling and the ability to make insurance decisions in a matter of minutes from smart devices. For this to work, technology has to play a far more active and sophisticated role and technology like IoT devices, real-time data streaming, and predictive analytics are all part of how InsurTech is looking to improve the insurance industry.”

If we assume underwriters can take 4-5 days a month to deliver inaccurate MI in Excel, the main onus is on how automation, accuracy and freeing talented staff can deliver the ROI for the business. Those in the insurance industry need to have complete peace of mind that their MI is accurate enough to influence their business decisions, and comprehensive enough to provide all internal and external stakeholders with trusted insights that will transform their data into the business' most strategic asset. If that assurance is not there, insurtech will struggle to take hold, and the insurance industry will suffer greatly.

“I believe the market is going through change and will continue on this path,” says Nico Kichenbrand of EiB. “On the one hand customers are demanding far more complex and flexible products, and on the other hand insurance companies are trying to make the customer journey as short and as simple as possible.

For this to deliver on both sides, I see technology playing an even greater role in the coming years, not necessarily in the way they operate, but more how they

operate, but more how they interact with customers, their understanding of customer behaviour and their ability to adapt products at very short notice.”

Adds Pester: “I think the reason we haven't seen as much of a change as perhaps we should've seen over the last couple of years is partly the culture - there has been a resistance from some parts of the market because people don't necessarily want things to change - but I think also there is a healthy amount of fear. Insurance is a heavily-regulated industry. The old adage that nobody ever got fired for buying IBM - that is absolutely the view that a lot of insurers take. Play it safe on a day-to-day basis; let others jump first, we'll follow those that succeed. You're not going to make any glaring errors that way, but you're not going to find any game-changers either.

“Having said that, there are things like the use of AI for pricing contrasted against data protection laws coming in May, which does actually present some pretty interesting issues. How do you regulate AI? When you have AI that is genuinely self-learning, how do you actually ensure its accountable? How do you ensure you understand the decisions that it's making, the decisions that it's declining? That's a really hard thing to do; as far as I'm aware there isn't a clear-cut answer right now. It's a real open-ended question, because as it gets more and more intelligent, you can't discount the prospect of a rogue AI employee.

“There are reasons why it's not moved as quickly as it should've done, but it has to go that way. People are starting to realise this because of cost pressures in the market.”

Investigating the state of the InsurTech industry, [Altus writes](#): “Over the last 30 years, the insurance product hasn’t fundamentally changed. An annual product, a standard set of risks, and customers that typically engage with the insurer once a year. This is changing as the world around it shifts. [But] Risk management is evolving. A changing world is introducing new challenges for underwriters

“More and more devices are available to give insurers data which can be used to make decisions. Risk and usage data can be fed into underwriting decisions, incident data can help inform claims liability, and real time customer journey data can help improve customer engagement. This becomes increasingly important as we look at the macro changes in ownership structures.”

Garry Watson of Walsingham knows first-hand the impact of better quality data on a business’s ROI; remember, his Walsingham reduced exposure in bad postcodes by 33% in the last 12 months by using better data in MI. “We make underwriting decisions now based on good facts, which is absolutely critical. Whereas in the past we were just sticking our finger in the air and hoping we got it right.”

Which leaves just one question remaining: how confident are you in the data used to make your underwriting and business strategy decisions?



Source: *Excel in Business BIBA Survey 2017*

**The influencer's view: Stephen Goldstein, Country Director of Pivot Ventures and Author of the Daily Fintech, on data accuracy and MI in the insurance industry**

I've read a lot of articles stating that data is the 'lifeblood of a business' and/or that data is the 'new oil'. I agree with this to a certain extent. When looking at data, one has to think, 'what is the business objective I am trying to achieve, what data do I need to achieve it, which data sets will I need to ensure that I can achieve that business objective in a most fruitful way and ultimately how will I use this data to give the policyholder a better experience?

In underwriting, there are some fundamental shifts happening in the industry:

- 1) Insurance carriers/MGAs can get more data on their prospective customers through third party sources - information asymmetry is changing
- 2) Insurance carriers/MGAs can get continuous data on their policyholders through sensors, telematics and wearables
- 3) Insurance carriers/MGAs are using the increased data streams to help their policyholders with risk prevention and mitigation

The process of underwriting should be more automated with technology being improved for this part of the insurance value chain. The automation can only happen when the rules are set properly from the start. This means that the talent of underwriters will no longer be used on just making risk-based decisions on a policyholder's application, but can now be used to assess how the new sources of data, continuous data streams and risk prevention/mitigation techniques will help to better derive an underwriting decision. Underwriting will no longer be about a snap shot in time for the customer, but an ongoing view of the policyholder from a risk perspective.

Insurance carriers/MGAs having more access data to data should ultimately help with more customized policies and engagement experiences with their policyholders. Policyholders want more tailor-made policies and some also are open to engagement from their carrier which can help to reduce their premiums.

At the same time though, I am worried of data being misused by carriers/MGAs to exclude risks that present any remote chance of financial loss to their balance sheet. Underwriting at it's core is to help a carrier/MGA to decide which risks it wants to take on and/or how much to charge for it. However, completely excluding risks because of something they found on social media or because a DNA test shows that my ancestors were preconditioned for some disease may seem a bit extreme. This data should be used, but in a careful & ethical manner.

This is still a relatively new journey and carriers/MGAs will need to work with regulators as they incorporate these new sets of data to ensure that they are using it properly and ultimately treating customers fairly.

## About EiB

EiB is a management information software specialist. Our core software product is EiB Analytics, an enterprise platform for delivering Business Intelligence applications. Processing information, adding domain based business logic (often with quite complex sets of rules e.g earned premium) and transforming this operational base data to accurate MI, is in our DNA. We genuinely care about the real-world data conundrum for small to medium MGAs and start-up insurance firms.

As we enter an increasingly digitised age for the insurance industry, with the insurtech revolution disrupting traditions, EiB wants to help facilitate businesses to adapt to such a significant transformation, through developing a scalable MI architecture, which empowers organisations to leverage the entirety of their data and gain significant competitive edge.

Our solutions are tiered both technologically and from a pricing perspective. Startups can invest small but achieve near instant ROI, yet they can scale to a multi national insurer all within a continuum of using the same EiB Insurance Analytics platform. Users use their device and front end application of choice, so we can deliver MI via the familiar Excel interface running on a laptop to delivering fully interactive applications on your Apple or Android tablet / phone.

However, unlike the mainstream Business Intelligence vendors, we make any issues with your data quality our problem and not yours. Our software can examine and reject invalid data from your MI, but best of all we tell you the reasons why. This allows you to get that information corrected at source (back office application or Premiums / Claims bordereaux files), so the next time the information just processes and your MI quality improves.

EiB Insurance Analytics handles these errors in a number of ways:

- We use a series of industry rules to determine if we have an error. For example, a claim with an incident date before the policy started is a good example of this. If we encounter an error, we automatically add additional information so customers understand why we rejected certain records.
- We implement customer specific business rules. For example we check for any policy that starts before the date the MGA started to trade.
- We look for missing data in key areas. For example, all MTAs must have a date when the MTA takes effect, otherwise without a date, we have no way of knowing how that MTA affects the earnings model.
- We also trap missing members in areas used for analysis. For example, if a specific column is missing some data, we dynamically remap those records to make sure they are still included in the MI reporting cube.
- We reconcile the source data to the data that ends up in the MI reporting cube, to provide a full and reconcilable audit trail.
- We are also investing in the areas of fuzzy groupings and matching to identify and correct incorrect data. For example, the car make might be specified everywhere, but there are five different spellings of the same name.



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