



NEW EA

M A G A Z I N E

Ardoq's magazine will help businesses achieve a return on investment with their EA projects, and is packed full of advice on how to realize its full potential.

R O I E D I T I O N

NEW EA

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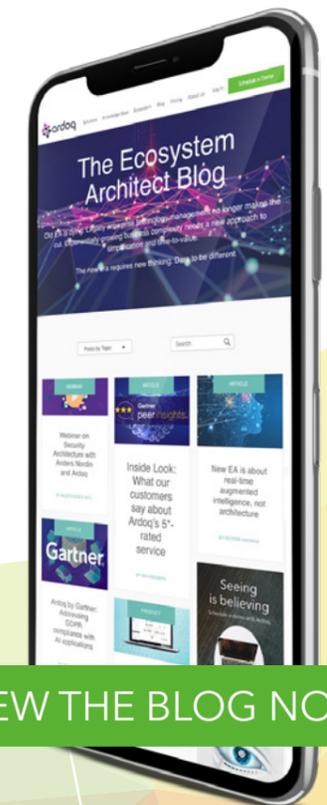


FOREWORD NEW EA

This special ROI edition is cutting through the noise to focus on getting tangible value from EA. We're sharing our expert advice to help you efficiently maximize the benefits of EA, and democratizing EA to make it data-driven, accessible, and valuable to many. You can explore what is meant by data-driven EA, and why it also needs to be business friendly, visually appealing, and provide instantly informative analysis. Finally, we're uncovering what AI is, and what it isn't.

Enjoy!

Magnus Valmot,
CEO, Ardoq



[VIEW THE BLOG NOW](#)

EVER HEARD OF ROI WHEN IT COMES TO ENTERPRISE ARCHITECTURE FRAMEWORKS?

With businesses struggling to get tangible value from EA, we share our expert advice to help you efficiently maximize the benefits.

Want to drive down the total cost of IT without damaging strategic business initiatives? Want to better connect your business operations to IT? Want to get an overview of how people, processes, data, and applications interconnect that can be shared with all stakeholders to empower them to make better decisions daily? To all the above, enterprise architecture (EA) promises the solution.

With EA being proclaimed as the closest proxy to The Holy Grail for the digital enterprise, how is it that, according to Gartner (June 2018):

Only "50% of companies succeeded on their first attempt at implementation"?

Only an appalling "16% of all companies surveyed actually gained measurable business value" from their EA practice?

THE NOTATION OF AN ENTERPRISE ARCHITECTURE FRAMEWORK IS NOT THE GOAL - IT IS THE PROBLEM

As a technology business executive, a conversation with most old-school EAs is quite an experience. Rarely can you find yourself listening to such ivory-tower, abstract conceptualizing that's so clearly disconnected from anything business unit leaders can be expected to understand (or care for). Adherence to, and perfect implementation of, an architecture notation standard is clearly the focal point. To many old-school EA practitioners, it feels like the goal.

// To drive successful EA in the ecosystem age, chief enterprise architects should do the exact opposite: they should forgo notation standards entirely and focus on the business questions (in a prioritized order) they want to solve."

To those less intimate with EA frameworks and notations, there are several being used as industry standard at the moment. Each and every one of them claims that by following our notation, everyone will understand it because it's a language. But it's easy to forget that languages have to be learned, and in order for it to be efficient, every nuance needs to be understood by all parties. The investment in time alone to learn those nuances is incredibly large; time you don't have in this age of Ecosystem Architectures.

While it's undoubtedly possible to invest years into implementing Enterprise Architecture Frameworks for even a mid-sized enterprise, tracking completion of the architecture work and discussing the process with fellow EAs in the community

is the path to ruin. To drive successful EA in the ecosystem age, chief enterprise architects should do the exact opposite: they should forgo notation standards entirely and focus on the business questions (in a prioritized order) they want to solve.

Does this mean that architecture, or models, is of no importance to EA? Quite the opposite. An EA model that truly underpins the business questions you want to solve is vital to EA success. The standardized notations simply fail to deliver this critical need. Also, Enterprise Architecture Frameworks struggle to reflect the complexity of today's IT world. Just ask yourself: can your IT landscape be divided strictly into platforms and applications only? Surely this is both an oversimplification as well as a gross restriction on flexibility at the same time.

DON'T USE A HAMMER WHEN A SCREWDRIVER IS NEEDED

They say that 'less is more'. While perhaps a very contrarian statement to Enterprise Architecture Frameworks supporters, it applies perfectly to EA.

When following Enterprise Architecture Frameworks, a lot of work is required before you can even start addressing any business question. Interestingly, however, we see across our customers that when they start with the business question (the goal, or better yet the ROI case) and then work their way back to what type of an architectural (mini) model is needed, they're able to solve the business need in a fraction of the time, and do so in a way that business stakeholders can also understand. This understanding of the process by business stakeholders creates trust towards the outcome – something which in an Enterprise Architecture Framework setting is borderline impossible to obtain.

We've summarized our thesis for value-driven EA into three principles and encourage everyone to review their EA notation and EA practice against these three principles.

PERFECT IS THE ENEMY OF GOOD

To summarize, start by asking yourself what is the problem you want to solve? Then work your way back to what data do you need, and which models are required/best fit the need. Again, keep the model simple, you can always expand on it later. Last, remember that perfect is the enemy of good, and that in today's turbulent business landscape the road to perfection can be never-ending. (Those familiar with Data Lake projects, for example, will certainly find many parallels here.)

PERFECT
is the enemy
of good

AGILE
(fast iteration and incrementalism)
trumps waterfall (pedantic and
towards Big Bang) every time

FOCUS
on the business question(s),
in a prioritized order, you
want to solve

WHY EA NEEDS ITS OWN BLOCKCHAIN REVOLUTION

The continued democratization of EA will only bring greater value to a wider audience.

To drive effective change, one needs to not only have a profound understanding of any new value created, but equally – if not even more importantly – a profound understanding of the factors and motivation for resistance to change.

We've previously written about how EA needs to move beyond opinionated art to [allow the data to speak for itself](#). We've also shared our development and thesis for [Chatbots becoming ubiquitous](#) as the analytics software interface of the near-future.

Both exemplify our commitment to transforming EA into being data-driven, accessible and valuable to many. In short, we're committed to democratizing EA. To get there, EA needs a blockchain revolution of its own.

In Old EA, authority is conferred by seniority.

Blockchain is the ultimate form of decentralization. It represents the democratization of data and information, allowing facts to shine bare. Blockchain offers data untouched by any senior influencers' agenda. Blockchain-based solutions are by definition created by the masses, for the masses. As such, this means that authority comes directly from the masses.

The unfortunate reality of much of today's EA is that true data plays at best a supporting role. Because authority in EA output is conferred by seniority often sitting outside the EA team, many EA teams desperate to influence that one key stakeholder spend valuable time manually creating visualizations in the hope that their artistic approach helps carry the desired argument better. Being data-driven plays second fiddle to presentation aesthetics.

Time ends up spent on manual drawing, not analysis.

In New EA, authority comes from ubiquity.

At Ardoq, we believe that adopting a data-driven approach is vital for EA success. This requires accepting data-driven EA outputs as the correct version of the truth without a senior authority (for whom each picture is handcrafted to please, often introducing bias, and always limiting EA efficiency and scalability).

This is where blockchain becomes so important and relevant.

When it comes to authority in New EA, ubiquity trumps seniority.

By crowd-sourcing data (alongside data integrations from existing systems of record), and by making EA output available to all to verify, scrutinize, and amend for higher accuracy, EA moves from the Ivory Tower of the few into the hands of the masses.

This democratization of EA output – combined with harnessing of the wisdom

of the crowds – is what gives New EA authority and impact at a scale that Old EA can only dream of. In this way, automated visualizations will outshine artisan ones.

Being data-driven and providing scalable analysis to the masses doesn't mean taking a back seat when it comes to visual information aesthetics – quite the opposite.

There's a lot that's happening at progressive data-driven EA vendors on improving the functionality of their platform visualizations in terms of rendering, layouts, configurability, and out-of-the-box AI-facilitated iconography.

Also worth noting are integration capabilities with leading graph visualization solutions such as Keylines, Linkurious, and Tom Sawyer, as well as leading executive reporting solutions such as MS PowerBI, Tableau, and Qlik.

As history has proven many times over, linear solutions are no match for the exponential requirements of digital ecosystem businesses.



IS EA ART OR SCIENCE?

Or to put it another way, is your EA visually-driven or data-driven?

Not that long ago, a colleague found himself in a conversation with a customer's large EA department. They were voicing their concerns that [Ardoq is clearly data-driven](#), while they saw themselves as visually-driven.

“We could save at least 500 hours of time spent on visualizations with Ardoq, but then we wouldn't be able to draw and control the boxes.”

Of course, this wasn't the first time we'd heard objections to our mission of [transforming EA from manual architecture drawing to augmented analytics based on real enterprise data](#). We do, however, want to take a couple of minutes to explain why we're sticking to this mission.

FACTS AND DATA MATTER MORE THAN OPINIONATED ART

When it comes to making a business case with senior management, having facts and data beats opinions and artistic impressions every time.

Make no mistake: at Ardoq, we want to ignite passion and understanding of the value of enterprise architecture at the highest possible levels of organizations, small and large alike. In other words, we want to elevate EA to the same standing as:

- Sales Management (CRO)
- Product Development Management (CTO)
- Financial Management (CFO)

All of whom sit at the senior management table. For this to happen, EA needs to be based on facts and data – not an 'artist's impression' of connected boxes and lines with only a vague connection to hard facts.

Continuing with this comparison, all of the above-mentioned offices derive their executive dashboards and visual communication aids from data in an automated fashion.

- All departments are data-driven and facts based
- All departments can argue their case with data and can analyze – or interrogate – their data through standardized analytical means at almost real-time speed
- None consider their work to be visually-driven at the foundation
- All are deeply founded on data
- All thrive towards automation of data analysis, including automation of the visual analysis

NEW EA IS ABOUT DATA-DRIVEN VISUALIZATIONS

Being data-driven is no longer at odds with being visually rich and visually pleasing, even to someone who isn't familiar with EA.

In fact, it's very much the opposite. Being data-driven simply means that creating and maintaining visual communication materials of complex systems in constant flux is no longer laborious, manual work – instead it becomes an automated task.

To thrive at senior management level today, your EA needs to be data-driven with business friendly, visually appealing, and instantly informative analysis – all with the highest possible level of automation across the entire EA workflow.



WHAT IS DATA-DRIVEN EA?

THIS EXPRESSION IS USED SO OFTEN, BUT DO WE TAKE ITS MEANING FOR GRANTED? LET'S GO BACK TO BASICS AND EXPLAIN THE IMPORTANCE OF BEING DATA-DRIVEN.

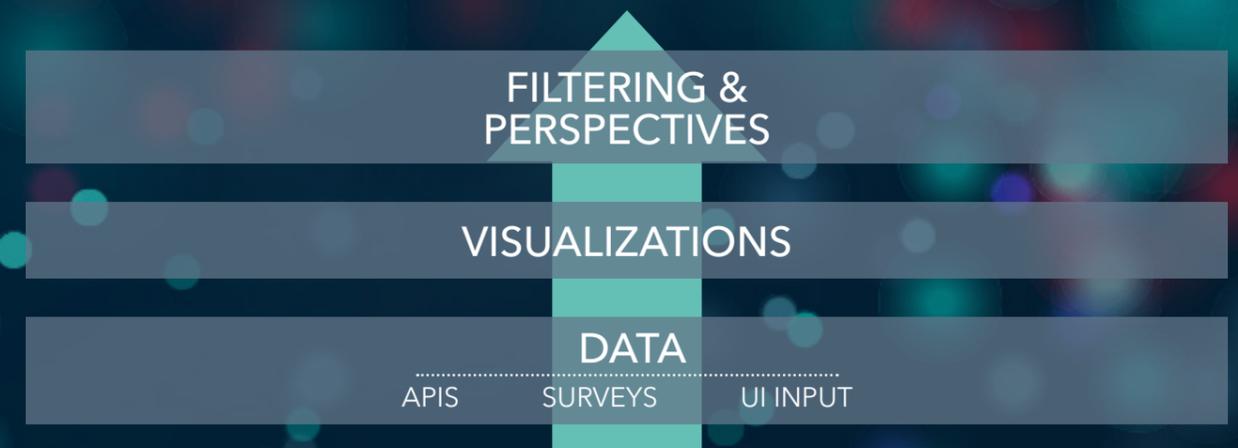
Sometimes, it's hard to see the picture when you're inside the frame.

This simple truth applies to many things – perhaps none more than the domain jargon that we've become so intimate with that it becomes borderline impossible to assume an outside-of-the-frame perspective to its meaning. So, it was most refreshing to have recently been in a conversation with a CTO who did the unexpected. He directly asked the simple question:

“What exactly do you mean by data-driven EA?”

This to-the-point the question caused me and our team to pause and reflect. Have we somewhere down the line just 'skipped over' clarifying the critical distinction of what constitutes 'data-driven' in the context of EA? Has the workflow and architecture of being data-driven vs drawn up manually – or being based on fixed frameworks resulting in pre-defined visualizations – been overseen by us? Living up to our mantra that seeing is believing, we wanted to share the conversation with you, and the whiteboard drawings (polished to spare you our handwriting and drawing skills) that followed.

Data-driven EA can best be understood as a commonly seen tech stack as illustrated below. Next, let's discuss each layer in the stack, and then return to how this approach to EA is fundamentally different to traditional approaches.



IT'S ALL ABOUT THE DATA

At the risk of sounding sentimental, this warrants a short trip down memory lane to Ardoq's founding idea – resulting from the frustration of a senior enterprise architect consultant working on the migration of a banking payment system for a large Nordic bank that had gone through several acquisitions.

“I was working in MS Visio, drawing up illustration after illustration of the payment system landscape, integrations, and relationships to business processes for the client, and every time I presented the latest drawings for discussions – in particular to new stakeholders – someone pointed out yet another new system, integration, or process that was missing in the current drawing.

Each time, I found myself back at the

drawing table, tediously redrawing diagrams, all while they were getting more and more complex to visually analyze for errors and consistency. This led me to documenting each component, relationship – and their respective attributes – in Excel first, and then moving from there to Visio periodically.

However, as the complexity kept growing, it soon became clear that Excel was not the right tool for the task. Nor was it understandable for anyone else, and I couldn't find what I was most critically looking for – gaps in the data. I had, however, developed the critical realization that has since evolved into Ardoq today, which is that what started out being about architecture drawings was really about data.

The challenge was, therefore, a data analytics one. A challenge that would be unlocked by being able to analyze complex structured data at its most raw level. It was not a challenge of being able to draw up architecture diagrams after all.”

- Magnulf Pilskog, Co-founder & Chief Product Officer at Ardoq

Returning back to the present day, Ardoq's disruptive approach to addressing EA as a data analytics challenge is rapidly embraced by progressively thinking customers globally.

With enterprise IT moving to the cloud, embracing digitalization and data-driven decisions has never been easier. The record data that EAs and CIOs care about can now easily be accessed via APIs.

We've also built smart surveys to crowdsource complementary data from the entire organization for no-UI, no-new-solution-training data collection at an unprecedented scale.

It's the data that underpins everything within New EA at Ardoq. Data is also an incremental and living asset that follows the enterprise as it transforms.

in the updating of visualizations. Most importantly, however, as the underlying data becomes highly connected and complicated, it becomes an übermensch task to manually draw any sensible visualizations.

For data visualizations, Ardoq comes 16+ (and growing) out-of-the-box, including

process, flows, heat maps, spider charts, sequence diagrams, swimlanes, relationships, integrations, dependency matrices, bubble charts, treemaps, and strategic roadmaps. As we're cloud native, there's also a Plug-In editor, of course, allowing anyone to create their own custom visualizations.

VISUALIZATIONS CAN BE FILTERED AND VIEWED FROM DIFFERENT PERSPECTIVES

Last but not least, we arrive at the top of the data-driven EA stack hierarchy with filtering and dynamic perspectives. Because every visualization is based on data – not manually aligned shapes and arrows – any attribute pertaining to any graph component or graph relationship can be used to filter the automatically produced visualization to reduce

noise, to zoom in/out, or to highlight a particular key analysis.

We also have a feature called dynamic perspectives that leverages Ardoq's graph data architecture, enabling visual analysis to be provided on the same visualization from different points of interest or perspectives. For example, with a click of a mouse visual analysis can be changed from answering roadmap to answering risk.

CONCLUSION

We live in a data economy. Data powers most of today's most successful digital enterprises and is poised to disrupt many traditional industries that have not yet realized the transformative power of data within their business.

Our research shows that the single most important thing to management is meaningful insights, backed by real data, delivered in a way that is easy to understand, and helps businesses make better decisions. Data-driven EA that can answer complex questions with real data, at the speed of digital, is ideally suited to deliver on these desires.

SAMPLE OF KEY BUSINESS QUESTIONS BY EAS AND CIOS

- Percentage of IT spend on strategic projects
- Annual revenue from new IT-enabled business capabilities
- Annual savings from enhanced process efficiency by digitalization
- Percentage of applications in production supporting each enterprise capability
- Number of applications supporting each business process/capability and their cost
- Number of applications reused by more than one business

DATA EMPOWERS AUTOMATIC VISUALIZATIONS

We humans respond to visual stimuli better than anything else. This is why television quickly became a larger media than radio, and why social media has seen a seismic shift from text to pictures and video.

When embracing a data-driven approach

to EA, we can quickly, easily, and literally in seconds create many different visual representations of the same structured data. We also don't need to redraw anything when the data changes, but changes in data – 'at the source of truth' as we like to call it – automatically trigger updates in all visualizations everywhere. This not only saves hundreds if not thousands of hours of work time but also removes the possibility of human error

AI SPY WITH MY LITTLE EYE: UNCOVERING WHAT AI IS, AND WHAT IT ISN'T

The term 'artificial intelligence' is on everyone's lips. But what exactly is AI, and how can it help enterprise architects to flourish?

Were it not for the hype around blockchain - amplified by the stratospheric rise of Bitcoin and other cryptocurrencies - then AI would have topped the buzzword chart last year. In 2018, however, AI is set to take its rightful place atop that particular podium. But the term 'artificial intelligence' is so broad that it can be difficult to know exactly what it means, and how you can hope to use it to support you in your role.

WHAT IS AI? WHAT IS AI IN EA?

Machine learning (ML) and artificial intelligence (AI) are often used synonymously, as is natural language processing (NLP). But, while ML and NLP are part of the artificial intelligence field, AI also encompasses computer vision (image recognition) and robotics/robotic

process automation. Put simply, you can equate AI with anything that makes machines seem smart.

Complementary to AI is the concept of IA (information augmentation), wherein useful non-trivial and non-endemic information is automatically applied to enhance the user experience or to generate a more contextually complete analysis insight. A good practical everyday example is the augmentation of mapping services with restaurant menus and current offers.

In the context of EA, both AI and IA show significant promise, particularly across graph-based EA platforms, wherein data is by default in a structured format, and there is the ability to run automated – even self-learning – graph searches across numerous layers of different datasets, all inter-connected on the same graph.

AT ARDOQ, WE'RE AT FULL PUBLIC COMMERCIAL SCALE DEPLOYING AI WITHIN OUR EA PLATFORM TO:

- Auto-generate crowdsourcing surveys from any data model within Ardoq
- Auto-complete fields for structured data collection
- Auto-update visual presentations and perform continuous gap discovery
- Find duplicated/synonymous data in the data graph for higher data coherence and quality
- Send smart notifications linking across hardware, application, business process, and business owner levels

We've also implemented several uses of IA, including:

- Dynamic perspectives
- Conditional formatting

We're also continuing our investments in our chatbot user interface to combine NLP with powerful graph search capabilities. This will provide answers to complex business questions using natural language, without requiring any platform training. This is ideal for executive level users whose business questions rely on the understanding of complex dependencies.

WHEN TO USE AI, AND WHAT TO EXPECT FROM IT

The vast majority of people are in agreement that the various forms of AI application will have a significant transformational impact on how businesses operate going forward. Research has found that by 2020, 50% of all searches will be voice searches (Comscore), 80% of businesses want chatbots (Oracle), and Natural Language Generation and AI will be a standard feature in 90% of business intelligence platforms (Gartner).

THE USE OF AI IN EA PLATFORMS WILL HELP EAS:

- Crowdsource data from many stakeholders effortlessly, while maintaining data quality
- Run ongoing analysis across complex inter-dependencies, and identify gaps automatically
- Provide bespoke presentations in minutes that update as data changes for each stakeholder
- Respond faster to complex business questions, all with a leaner EA team
- Save thousands of consultancy hours

FORRESTER[®]

FORRESTER RESEARCH RECOGNIZES ARDOQ INTELLIGENCE GRAPH IN FORRESTER NOW TECH: ENTERPRISE ARCHITECTURE MANAGEMENT SUITES, Q4 2018 REPORT

Ardoq, synonymous with New EA, is proud to be selected as mid-sized Enterprise Architecture Management Suite provider in Forrester's Now Tech: Enterprise Architecture Management Suites, Q4 2018 report. The report provides an up-to-date overview of leading global EA solution providers by analyzing vendors across market presence, size, capabilities, and use case focus areas.

The Forrester's Now Tech: Enterprise Architecture Management Suites provides guidance to EA pros on identifying leading technology solutions, such as Ardoq Enterprise Intelligence Graph, for "capturing, managing, and reporting on a firm's strategic and operational assets, defining the relationships between those assets, and assessing the effectiveness and

efficiencies of those assets with the purpose of providing insights that may influence or guide the strategic direction of the firm."

The report emphasizes EA's shift from static architecture drawing to data-driven New EA, citing a key area of leading EA pro focus in "seek[ing] real-time insights on strategic and operational performance." The report continues "EAMS tools are able to integrate with physical asset repositories – for example, configuration management database (CMDB), application performance management (APM), master data management (MDM), business process management (BPM), and human resource (HR) solutions. These integrations enable an EAMS to capture real-time performance data at a higher level of abstraction, such as business capabilities."

// **At Ardoq, our focus has always been sharply on automation of EA by focusing on APIs and crowdsourcing as main data input channels, using advanced graph analytics to connect and analyze complex data across connected data models, and to reveal personalized insights serving a wide stakeholder community far beyond traditional EA pros," said Magnus Valmot, Ardoq CEO. "We are pleased to see our direction for New EA corroborated by independent market analysts."**

- Magnus Valmot, Ardoq CEO

Ardoq is New EA. We give business and IT executives the confidence to make the right decisions at the speed required by today's digital economy. Our customers can easily analyze complex interdependencies across IT

and business. They can also discuss the analysis and implications with non-technical stakeholders through easy to understand visualizations, making advanced insights accessible throughout the organization.



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