THE BUSINESS CASE FOR DATA ARCHITECTURE

TRANSLATE DATA FOUNDATIONS
INTO BUSINESS VALUE

BOND
CONSULTANCY

EXECUTIVE SUMMARY

Data Architecture is no longer a back end concern.
It's a strategic capability that directly impacts business performance.

Yet too often, it's treated as an IT detail instead of the foundation for business decision-making, growth, and innovation.
This whitepaper makes the business case for investing in Data Architecture. Not as a technical upgrade, but as an enabler of real business value. It challenges the misconception that Data Architecture is "just plumbing," and shows how misaligned data structures lead to rising costs, poor decisions, and operational friction.

We explore 4 ROI dimensions where Data Architecture delivers measurable impact:
- Operational efficiency (e.g. faster delivery, fewer workarounds)
- Revenue growth (e.g. smarter targeting, faster execution)
- Risk mitigation (e.g. reduced duplication, better governance)
- Scalability (e.g. infrastructure that grows with the business)

Each dimension is brought to life through real-world examples from logistics, education, manufacturing, and technology. **Including cost savings of over €20,000 and performance improvements of up to 400%.**

This whitepaper also outlines what it takes to get there:
- The core capabilities every organization needs to start
- The architectural decisions that shape longterm flexibility
- A practical roadmap to define pain points, assess the current landscape, and build the case for change

Whether you're a business leader seeking better results, or a data professional looking to increase your impact; this paper helps you reframe Data Architecture as a strategic asset.

Because when your architecture reflects how your business really works, everything else works better too.

BETTER ARCHITECTURE, BETTER BUSINESS

WHY DATA ARCHITECTURE MATTERS
(MORE THAN YOU THINK)

A GOOD DATA ARCHITECTURE ISN'T ABOUT PERFECTION. IT'S ABOUT FIT.

Data is at the heart of every business decision.

But if your data doesn't reflect how your business actually works, decisions suffer. No matter how good your analytics tools are.

That's where Data Architecture comes in. It's not just about systems and schemas. It's about creating the conditions for reliable, real-world insights. Aligned with how your business operates, evolves, and grows.

When Data Architecture is done well, no one talks about it. Data flows smoothly. Teams trust what they see. Reporting aligns across departments.

But when it's done poorly - or not at all - it shows up fast:
- Business processes slow down
- Reports contradict each other
- No one agrees on the numbers

These aren't minor annoyances. They have major implications for the decisions you make and the actions you take. And they are symptoms of a deeper problem: your data setup doesn't reflect the logic of your business.

Does your structure reflect how value flows through your business?
Does it support how decisions are actually made?
Does it make it easier (or harder?) for teams to act on data with confidence?

THE HIDDEN COSTS OF GETTING IT WRONG

Projects run over budget. Teams spend hours reconciling numbers. Opportunities slip away because the right data isn't available at the right time.

And yet, most of these costs go unrecognized. Because they don't appear in a single report or budget line.

Instead, the symptoms surface in subtle but expensive ways;
- Reports don't match.
- Teams rely on manual workarounds that slow things down and introduce risk.
- Business units operate in silos, each working with their own version of the truth.

These aren't isolated IT issues.
They reflect a deeper structural problem:
your data setup doesn't match the logic of your business.

A USE CASE FOR DATA ARCHITECTURE

Imagine an FMCG company selling products online. The stock shown online is based on their ERP data. However, the ERP system isn't connected to their Warehouse Management System.

As a result, customers order products that aren't in stock. Teams scramble to cancel and refund orders. Inventory levels fall out of sync across sales, logistics, and marketing.
This is more than a data error: it's a design flaw. One that leads to lost revenue, broken customer trust, and mounting operational pressure. You know, that pressure that the newly implemented ERP system was supposed to relieve?

These kinds of issues do not fix themselves. They require a better foundation. One that is built to reflect how your business really works.

# HOW GOOD DATA ARCHITECTURE SOLVES THESE ISSUES

When Data Architecture reflects how your business works, problems start to disappear.
Let's return to the retail example from the previous section.

From a Data Architecture perspective, the solution would not be to simply automate refunds or fix the report. That's fixing the symptoms.
Solving it would start with redesigning how inventory, orders, and logistics are connected; creating a flow that matches how the business actually operates.
Instead of siloed updates, a well-architected solution would establish real-time integration between the ERP and Warehouse Management System.
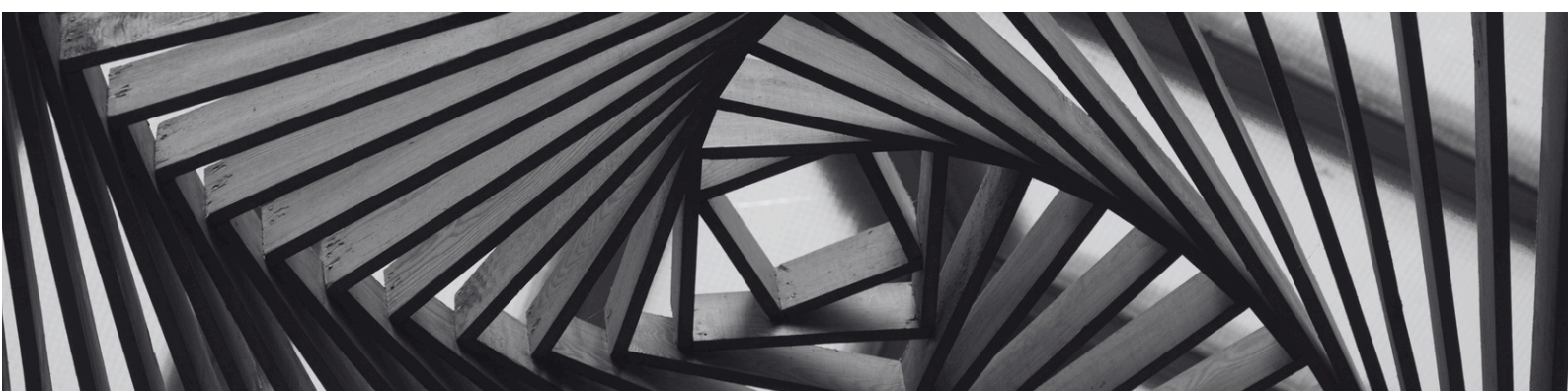
This doesn't just mean adding a connector or syncing data more often. It requires designing clear ownership of inventory data, defining how stock updates flow through the system, and deciding which system acts as the source of truth. It's means design based on understanding.

A streaming or event-driven approach could ensure that stock changes in the warehouse immediately update ERP data, and vice versa. No more relying on scheduled batches or manual reconciliation.
With that foundation in place, sales teams can promise what the warehouse can actually deliver. Marketing avoids promoting out-of-stock products. And operational planning becomes far more accurate across the board.

This is what good Data Architecture enables:
* Clear, consistent data across teams.
* Better decisions with fewer workarounds.
* A foundation for scale, automation, and innovation.

So, what makes architecture "good"?

There's an article in traditional architecture that describes the Golden Rules of Architecture - and they translate surprisingly well to data as practical design principles.

FORM FOLLOWS FUNCTION

Your data design should support how the business works - not the other way around. A well-modeled customer domain, for instance, should reflect how your teams engage with customers across touchpoints, not just how the CRM stores them.

BALANCE AND PROPORTION

Data Architecture needs to balance across domains, systems, and priorities.
When financial reporting is highly structured, but operational data lives in disconnected spreadsheets and emails, decisions are delayed or based on incomplete information.
The architecture works for one part of the business, but holds the rest back.

SUSTAINABILITY AND CONTEXT

Your architecture must evolve with the business, not become a constraint.
That means designing with future growth in mind (new channels, partners, acquisitions) without breaking the current setup.

These principles aren't about technology. They are about coherence.
They make the difference between data that simply exists and data that actually works.
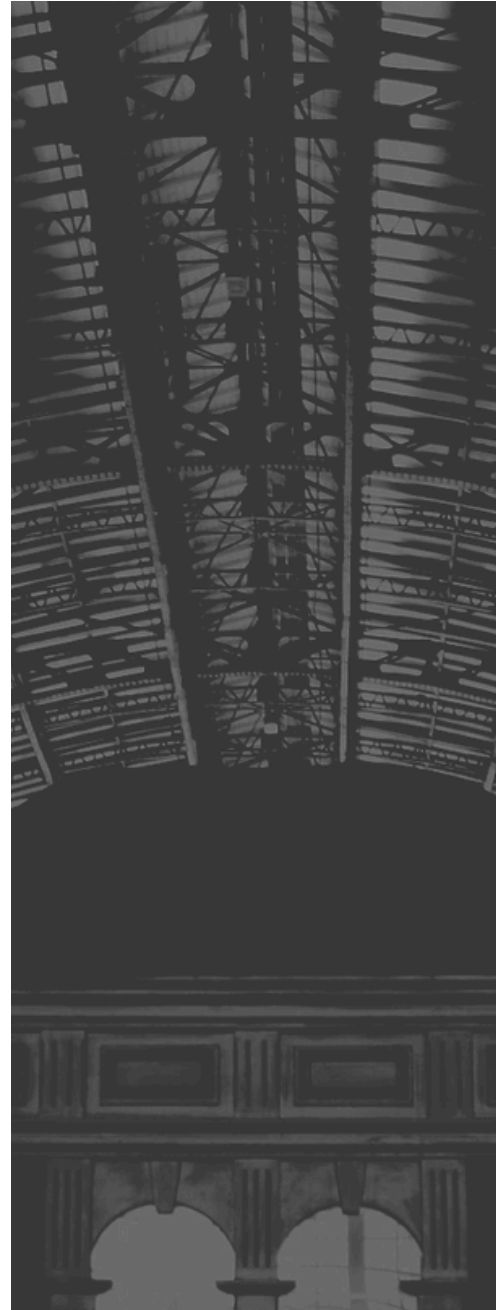
WHERE THE ROI COMES FROM

If you want investments to be approved, you need to be able to show their returns.

Data Architecture delivers value, but not always in the way people expect.
As mentioned, it rarely shows up as a single line item in a budget or a monthly report.

Instead, the return on investment reveals itself in how the business runs, grows, and adapts.

In this section, we explore four dimensions of ROI where good Data Architecture makes a measurable difference:

1. Operational Efficiency & Cost Reduction
2. Revenue Growth & Competitive Advantage
3. Risk Mitigation & Compliance
4. Scalability & Future Growth

Each dimension is brought to life with a real-world case from a different industry.

These examples show what's possible when Data Architecture is used as a business enabler - not just a technical layer.

OPERATIONAL EFFICIENCY & COST REDUCTION

CASE: EWALS CARGO CARE (LOGISTICS & SUPPLY CHAIN)

Ewals wanted faster, more reliable business insights.
But their fragmented data landscape made every BI project slow, reactive, and expensive.
They restructured their data integration layer to reduce complexity, eliminate legacy bottlenecks, and streamline delivery across business units.
As a result, they **increased the delivery speed of data marts by 400%, reduced dependency on legacy platforms, and dramatically lowered internal data handling costs**.
This is the power of architecture that removes friction by design.

REVENUE GROWTH & COMPETITIVE ADVANTAGE

CASE: UNIVERSITY OF CHICAGO (EDUCATION)

The university's fundraising team worked with outdated and inconsistent data across departments.

This made it difficult to personalize outreach or track alumni engagement effectively.

By building a centralized data model for donor and alumni profiles, and applying consistent rules around how that data was structured and shared, they were able to run more targeted campaigns and communicate more effectively.

This led to a **significant increase in campaign performance and fundraising results**.

The architecture didn't just clean up the data. It enabled the team to act faster, with more confidence and context.

RISK MITIGATION & COMPLIANCE

CASE: STIHL (MANUFACTURING & ENGINEERING)

As STIHL's analytics needs grew, teams started building their own solutions in isolation.

Some of these tools weren't properly secured, documented, or compliant - a situation referred to as 'shadow IT': systems created outside of official IT governance.

To regain control, STIHL implemented a formal data governance model and aligned it with their Data Architecture.

This gave teams the freedom to work with data within clear boundaries. The result: **over €20,000 in cost savings, improved compliance, and fewer duplicated efforts**.

Architecture gave structure not just to the data, but to the way it was accessed and used.

SCALABILITY & FUTURE GROWTH

CASE: ROI SOLUTIONS (TECHNOLOGY & SERVICES)

ROI Solutions wanted to modernize their infrastructure without slowing down ongoing operations.
Their on-premise data warehouse couldn't keep up with growing service demands.
By migrating to a data lakehouse, they built a scalable foundation for both current reporting and future AI/ML use cases.
The move **reduced infrastructure costs, simplified compliance, and sped up insight delivery**.
Paving the way for new data-driven products.
This is how architecture becomes a strategic enabler instead of a bottleneck.

THE TRUE ROI OF DATA ARCHITECTURE

Know that these examples don't represent one-off successes.

They show what happens when Data Architecture is treated as a business capability.

The return on investment comes in many forms:
- reduced costs,
- faster delivery,
- smarter decisions,
- greater agility.

In each case, the payoff was tangible. And often greater than initially expected.

What is important to note, is that ROI can only be measured when you know where you started.
That's why measuring and establishing your baseline is essential; you need to know where you started from. This is something we'll return to in the final section.

The true ROI of Data Architecture is a foundation that strengthens performance today, and unlocks new opportunities tomorrow.

WHAT IT TAKES TO GET THERE

Achieving the ROI described in the previous section requires a clear foundation, both in capabilities and commitment.

This section outlines what it typically takes to build and sustain effective Data Architecture, starting with the essential elements, and followed by strategic enhancements that support growth over time.
Whether you're just getting started or scaling an existing setup, the goal is not to implement everything at once. It's to invest intentionally and at the right time in what your business truly needs.

CORE CAPABILITIES

BUILDING A SUSTAINABLE FOUNDATION

Core capabilities are the non-negotiables if you want to treat Data Architecture as a real business asset.
You can phase them in, but you can not skip them.

PEOPLE - EXPERTISE & ALIGNMENT

- Data Experts (e.g. Data Architect, Data Engineer)

To design and implement the structure

- IT Experts

To support infrastructure, security, and integration

- Business Stakeholders

To ensure alignment with real operational needs

You don't need to hire an army. But you do need to get these perspectives around the table. Be it internal or external.

TECHNOLOGY – INFRASTRUCTURE & INTEGRATION

- Core platforms
On-premise, hybrid, or cloud-based

- Integration tools
To support data flow and system interoperability

- Security and access control
To manage data risk and compliance

- Foundational architectural choices
Such as whether your platform will support modular components or centralized systems

For some businesses, patterns like microservices, serverless, or event-driven pipelines are part of the core strategy from day one. Especially when flexibility and independent scaling are critical.
But even when you don't implement these approaches immediately, it is essential to decide early if they will be needed in the future.
That way, your core platform can be designed to accommodate them. Rather than working against them later on.

PROCESS – CHANGE MANAGEMENT & GOVERNANCE

- Stakeholder workshops
To align definitions and expectations

- Governance
To ensure consistency without overengineering

- Training and internal documentation
To promote adoption

A technical blueprint only works if people understand it and support it.

SCALING & OPTIMIZATION
STRATEGIC ENHANCEMENTS FOR GROWTH

Scaling & Optimization capabilities are not required to start, but they become valuable as complexity increases.

ENTERPRISE MANAGEMENT SYSTEMS

- MDM platforms
- Enterprise Architecture tools
- Data Catalogs

To help maintain consistency and transparancy across domains. And to reduce duplication; especially in multi-team or multi-entity environments.

ARCHITECTURAL PATTERNS

Architectural patterns improve modularity, scalability, and autonomy across systems.

Consider patterns such as
- microservices,
- serverless,
- event-driven design

If not required from the start, they can be introduced later - but only if the foundation allows for it.
They require a compatible platform, clear domain boundaries, and strong coordination between teams.

AI & ADVANCED ANALYTICS ENABLEMENT

Technologies such as
- feature stores,
- model registries,
- real-time data pipelines

can significantly increase the speed and reliability of data-driven insights.

While AI and machine learning can be treated as separate initiatives, both their success depends on having a consistent, scalable, and well-structured data foundation.

Investing in the right architecture now helps avoid rework later. So that when advanced use cases emerge, your ecosystem is ready to support them.

WITHOUT THE RIGHT INVESTMENTS, ARCHITECTURE REMAINS A CONCEPT, NOT A CAPABILITY.

This isn't about perfection or "best practices."

It's about building just enough of the right things - at the right time - for your business to grow with confidence.

Data is no longer just the output of business systems. It is the fuel that drives them.

And how well that data flows, scales, and supports decision-making depends on one thing: the architecture behind it.
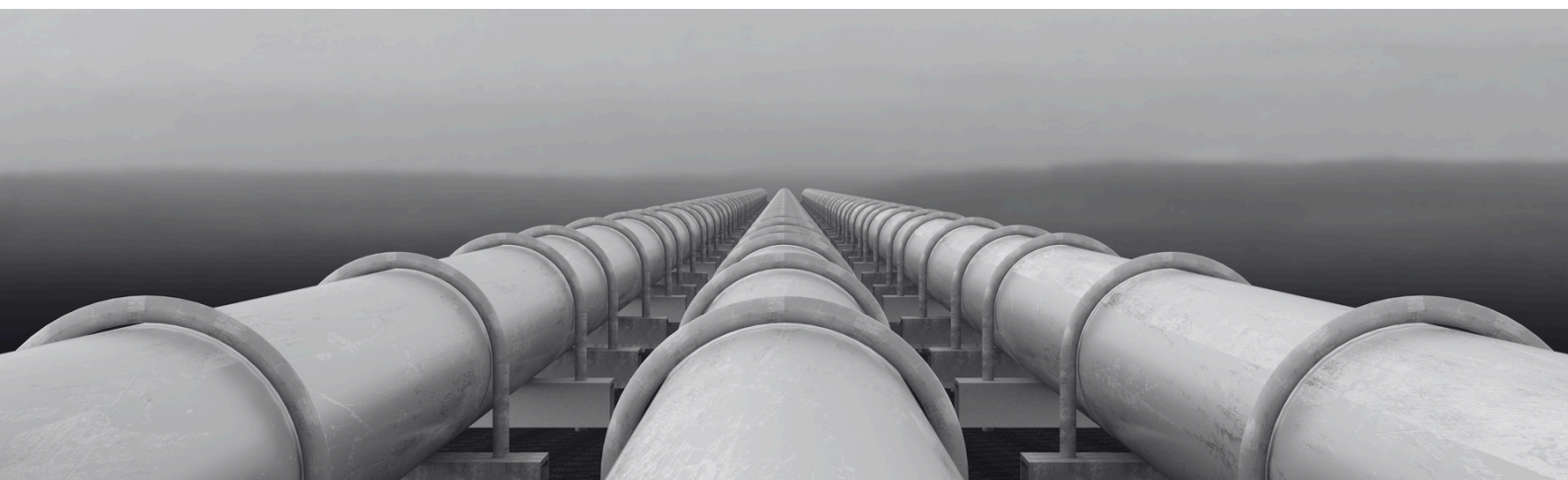
WHERE TO START

The question is no longer "Can we afford to invest in Data Architecture?"
It's "Can we afford not to?"

Take a moment to reflect: what does this mean for your role?

For business leaders
Are your teams able to make confident, timely decisions based on data?
Or are they struggling with delays, inconsistencies, or lack of clarity?

For data professionals
Can you clearly explain how your current data setup supports business strategy? And where it's holding it back, and why?

A SIMPLE ROADMAP IN 3 STEPS

1. Define your pain points and priorities
Identify where data is slowing your business down, causing inefficiencies, or limiting growth. Start with business challenges - not technical solutions.

2. Assess your current data landscape
Map where data flows well and where it doesn't. Look at ownership, integration, delays, and quality issues. Don't assume. Investigate.

3. Establish your baseline and build the case
Measure where you are today, before proposing change. A clear baseline helps show value, track progress, and secure support.

Whether you start big or small, start with intent.
Because Data Architecture is not about abstract models or future-proofing for its own sake.
It's about creating the conditions for your business to operate, scale, and win. With data that actually works.

WANT TO ELABORATE?

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