Data-Driven Business Transformation

Using data as a strategic asset and transformational tool to succeed in the digital age

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Section 1

▶Introduction

Data makes the world go 'round. Screens are everywhere – in our homes, on buildings, in our cars, at our desks, in our pockets. Our lives revolve around information as both consumers and generators.

By 2020, an estimated 1.7 megabytes of new data will be created every second by every human on the planet; that's 44 zettabytes or 44 trillion gigabytes, according to Bernard Marr in "Big Data: 20 Mind-Boggling Facts Everyone Must Read" (Forbes, 2015, No. 2). Marr also tells us that within three years, the Internet of Things will connect more than 50 billion smart devices – all for the collection, analysis and sharing of information (No. 3).

Even with all this data at our literal fingertips, we don't use it to our best advantage, not even close. For example, retailers could increase their operating margins by as much as 60 percent if they tapped into the full power of big data (Marr, No. 18). The beleaguered healthcare industry could save an estimated $300 billion per year by better integrating big data (Marr, No. 15). And a typical Fortune 1000 company potentially could net an additional $65 million in income with access to just 10 percent more of its data (Marr, No. 17).

Yet some companies have realized the value of data, harnessing it to create new business models, redefine and disrupt entire markets, and change the way customers think and therefore behave. We're talking about the likes of Airbnb, Amazon and Uber. Known as data-driven enterprises, these organizations have transformed everything – how they make decisions, invent new products or services, and improve processes to add to both their top and bottom lines. What would happen if others followed their lead in adopting data as a strategic asset and transformational tool?

DIGITAL TRANSFORMATION

Before 1990 and the birth of the World Wide Web, we lived in an analog world. But everything changed when our computers started talking to one another, as the following table shows.

	ANALOG	WEB	E-BUSINESS	DIGITAL MARKETING	DIGITAL BUSINESS	AUTONOMOUS
FOCUS	Build relationships that drive business or lower cost	Extend relationships into new markets or geographies	Transform sales channel into global medium to drive efficiencies	Exploit the nexus to drive greater efficiency	Extend potential customers from people to things	Smart, semiautonomous things become the primary "customer"
OUTCOMES	Optimize relationships	Extend relationships	Optimize channels	Optimize interactions	Build new business models	Maximize retention of and relationships with things
ENTITIES	People	People, Business	People, Business	People, Business	People, Business, Things	People, Business, Things
DISRUPTIONS	Emerging technologies	Internet and digital technologies	Automation of business operations	Deeper customer relationships, analytics	Creation of new value and new nonhuman customers	Smart machines and things as customers
TECHNOLOGIES	ERP, CRM	CRM, Web	EDI, BI, portals	Mobile, big data, social	Sensors, 3-D printing, smart machines	Robotics, smarter machines, automation

This is Gartner's take on the evolution of industry with its distinct phases, dimensions and outcomes.

Ready or not, we've entered the digital business phase that Garter defines by organizations creating new value through business models that blend the physical and digital worlds. It's also marked by the following factors, all of which are at play.

INTERNET OF THINGS

The network of physical objects connected to the internet. "The IoT is significant because an object that can represent itself digitally becomes something greater than the object by itself," according to Techopedia. The object doesn't just relate to its user because it's connected to surrounding objects and databases.

SELF-SERVICE

A type of electronic support (e-support) that allows customers and employees to access information and perform routine tasks over the internet without any direct interaction with a representative of an enterprise, according to TechTarget.

SOCIAL MEDIA

Lifewire defines social media as "Web-based communication tools people use to interact with each other by both sharing and consuming information." Facebook is the most popular social media channel with 1.8 billion monthly visitors, followed by YouTube with 1 million monthly visitors and Instagram with 600 million (DreamGrow, February 2017).

ANALYTICS

The field of data analysis that involves studying past historical data to research potential trends, analyze the effects of certain decisions or events, or evaluate the performance of a given tool or scenario with the goal of gaining knowledge that can be used to improve business by making improvements or changes, according to BusinessDictionary.com. Analytics has become an everyday tool for employees at all levels, not just "the data people."

APPLICATION DEVELOPMENT

The process and practice of developing Web applications. As of March 2017, Android users could choose from among 2.8 million apps with Apple App Store customers having access to 2.2 million apps, according to Statista. The most popular Web-based business application is Microsoft 365, followed by Salesforce, Box and Google (TheWhir.com, March 2016). And enterprise mobile app development is all the rage, but 62 percent of IT professionals report a large development backlog with a price tag between $100,000 and $500,000 to develop a single application (Formotus, March 2017).

BIG DATA

High-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight, decision-making and process automation, again citing Gartner. Given the statistics we referenced in this paper's introduction, it's safe to say that big data is a fact of life – and business. The more data you have, the more impact it will have on your business.

Section 1 *(continued)*

But digital transformation isn't just about technology. It's bigger than that – an organization's culture, operations, business applications and content are all impacted.

So then, how does an enterprise ensure that its digital transformation is successful? What's the key? The answer comes back to data, or more specifically data management because what you do with your mission-critical information will determine your ability to achieve the desired results, including innovation, productivity, compliance and growth.

Digital transformation involves more than technology; an organization's culture, operations, business applications and content also are impacted by a business model that blends the physical and digital worlds.

Culture:
Attitudes, Beliefs and Behaviors

Business Applications:
Customer-Facing and Mobile Apps

Operations:
Abilities, Practices and Measures

Content:
Web, Free Text, Social Media, Video

Section 2

▶ Why Data Is the Driving Force

If data and its sound management is the foundation of digital transformation, then we need to debunk the myth that "data is just for the data people."

Of course, IT plays a critical role, but the goals of a data-driven enterprise are in fact C-suite goals, such as:

- **Identifying opportunities and risk**
- **Strengthening marketing and sales**
- **Improving operational and financial performance**
- **Managing risk and compliance**
- **Producing new products and services, or improve existing ones**
- **Monetizing data**
- **Satisfying customers**

To achieve any of these objectives, an enterprise must extend the use, understanding and trust of its data across every business function – from the C-level to the front line – everyday. What does that look like? A data-centric business approach and the associated behaviors are outlined below.

By becoming part of your company's DNA, data transforms everything.

PROFILE OF A DATA-DRIVEN ENTERPRISE

Recognizes data as a strategic asset by using it to generate new revenue streams

Empowers the business with insights at the point of action by targeting the right audience with the right content at the right time through better marketing, for example

Uses data to define and reshape its competitive advantage by extending its use beyond IT stakeholders to the rest of the organization

Makes insight-driven value a crucial business KPI by measuring its use of data to improve business performance

Encourages an analytic culture by depending on data for insights to make daily decisions for operational improvements

Protects and secures business data to ensure regulatory compliance, as well as maintain customer relationships and trust as part of good business practice

Knowledge *is* power, but digital transformation is both a huge opportunity and massive challenge. Regardless of market, competition is fierce, and it's still a rigorous regulatory environment with Sarbanes Oxley, the Health Insurance Portability and Accountability Act (HIPAA) and the General Data Protection Regulation (GDPR). Penalties for GDPR alone are severe, costing up to 20 million Euros or 4 percent of a company's annual worldwide turnover (Wiley Rein LLP, January 2016).

Furthermore, most enterprises have grown through acquisition and consolidation, creating business and technology silos. Still, your business must exploit every advantage, every ounce of competitive differentiation to survive and thrive. If you're ready to seize the day – or should we say, seize the data, keep reading because we're going to tell you how.

Section 3

▶ Building a Data-Driven Enterprise

Like any construction project, building a data-driven enterprise starts with architecture. But unlike building your dream house or a fancy new office building for which you hire one architecture firm to produce the blueprints, an organization must manage multi-disciplinary architects. There are three architecture roles within an organization.
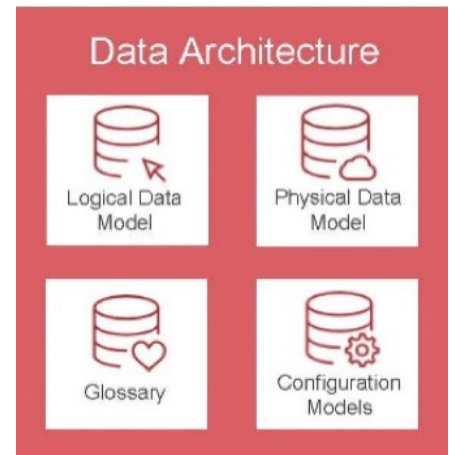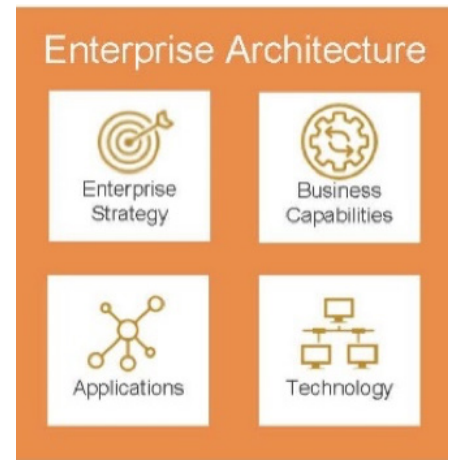
ENTERPRISE ARCHITECTURE

Enterprise architecture defines the structure and operation of an organization with the purpose of determining how an organization can achieve its current and future objectives most effectively, translating those goals into a blueprint of IT capabilities. Its advantages are improved decision-making, ability to adapt to changing demands or market conditions, eliminating inefficient or redundant processes, and optimizing the use of assets.

DATA ARCHITECTURE

Data architecture involves models, policies, rules or standards that govern what data is collected and how it is stored, arranged, integrated and used within an organization and its various systems. It starts with data modeling, the creation of a unified view of any data – structured or unstructured – from anywhere – within your walls or in the cloud. Such an integrated, graphical representation of enterprise data enables stakeholders to see business-critical information regardless of its source and relate to it from their unique perspectives.

BUSINESS PROCESS ARCHITECTURE

Business process architecture represents the elements of a business and how they interact with the aim of aligning people, processes, data, technologies and applications to meet organizational objectives. It provides a real-world picture of how an organization functions, including opportunities to create, improve, harmonize or eliminate processes to improve overall performance and profitability.

The three architecture roles within an enterprise and some of their key components are illustrated above.

Section 3 *(continued)*

As we discussed earlier, companies like Netflix have used data to catapult themselves ahead of legacy competitors within their industries.

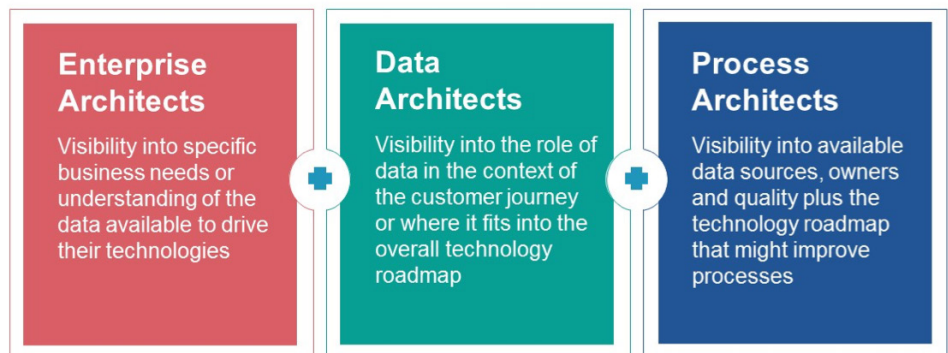## BETTER TOGETHER FOR A SOLID FOUNDATION

So while enterprise architecture, data architecture and business process architecture typically have been siloed practices with disparate tools that don't enable collaboration, a data-driven enterprise integrates them for a data management foundation that enables the organization to:

- **Effectively manage and govern massive volumes of data**
- **Consolidate and build applications with hybrid architectures, including traditional, big data, cloud and on premise**
- **Support expanding regulatory requirements, such as GDPR**
- **Simplify collaboration across key roles and improve alignment with accurate financial and operational information**
- **Improve business processes for operational efficiency and compliance**
- **Empower employees with self-service access for enterprise data capability, fluency and accountability, giving them the right information at the right time to improve decision-making**

To prove the value of integrating enterprise architecture, data architecture and business process architecture, let's look at a real-world example of an enterprise with the C-level goal of enhancing the customer experience. First, we need to examine the traditional, siloed roles of the architecture teams in the context of the customer experience:

- **Enterprise architects are responsible for the company's current application and technology landscape plus the roadmap.**
- **Data architects have insight into the customer data that's available, including its sources, quality and ownership with the company.**
- **Process architects map the customer journey and the processes that comprise it at every stage.**

But if the silos between these teams are broken down through data-sharing and collaboration, look at the visibility such integration provides, as illustrated below.

Enterprise Architects

Visibility into specific business needs or understanding of the data available to drive their technologies

Data Architects

Visibility into the role of data in the context of the customer journey or where it fits into the overall technology roadmap

Process Architects

Visibility into available data sources, owners and quality plus the technology roadmap that might improve processes

Each architecture team achieves greater visibility through data-sharing and collaboration, leading to better outcomes that improve the customer experience.

Section 3 *(continued)*

With better visibility, comes better outcomes that make it possible to improve the customer experience.

- **The enterprise architecture team sees business requirements and can make technology decisions based on real business scenarios.**
- **The data architecture team sees how data is used in the context of the customer journey and how it fits into the technology roadmap.**
- **The process team sees available data sources and its quality and can refine processes accordingly.**

Without the complete data story, there are no accurate insights and therefore no success in meeting this or any other C-level goal. Each architecture team is only playing with a half a sheet of music, if you will. Therefore, risks and times to market increase, as does the potential for missteps and false starts – all adding to costs. However, an integrated architecture defines the data-driven enterprise by giving it greater visibility, context, value and collaboration.

Section 4

▶ Ready to Renovate?

Clearly there's a case for digital transformation and data as the foundation, the raw material that drives it. But it's not easy for an organization to master its data.

To become a data-driven enterprise, you need a data management platform that 1) provides a model-driven foundation for enhanced quality and governance, 2) connects both technical and business stakeholders to any data anywhere for greater collaboration, fluency and accountability, and 3) breaks down silos with a single, unified approach for modeling and management across the business.

erwin has been the most trusted name in data modeling for 30 years. As a stand-alone company established in 2016, we've expanded our solutions to provide the only unified data management platform that includes data modeling, enterprise architecture and business process modeling in addition to data governance and collaboration.

The erwin Data Management Platform brings together structured and unstructured data, whether it's on premise or in the cloud, so you can build powerful yet intuitive models and architectures across your systems. With visual models, we help you see where and how data is being used throughout your organization – in context – and identify applications, processes and technologies that will be directly impacted by changes to the data design.
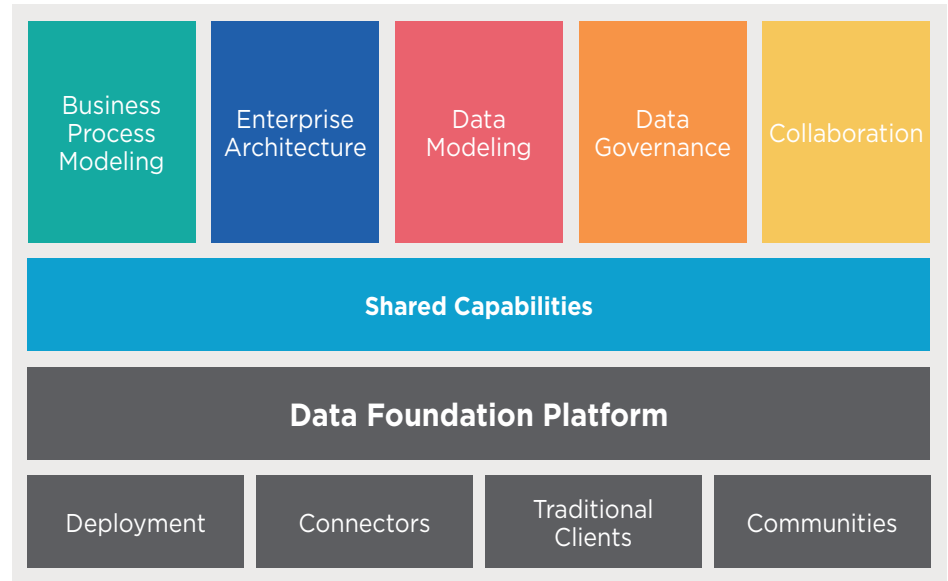
Most important, the erwin platform facilitates collaboration and sharing of high-quality data among all stakeholders. Collaboration also includes the ability for integration with other data management products. The modular design of the erwin Data Management Platform enables your organization to plug in based on your immediate needs and most critical digital transformation goals.

The erwin Data Management Platform gives you critical capabilities.

▪ **Discover and manage business and technical databases by creating a unified view of all data**

▪ **Align and optimize people, processes and technologies to achieve business objectives**

▪ **Visualize complex architecture assets through contextual models to best plan, manage and govern change**

▪ **Implement and manage business rules and controls across a broad array of architectures through model-driven, active data governance**

▪ **Share high-quality models and metadata with technical and business stakeholders**

Business Process Modeling	Enterprise Architecture	Data Modeling	Data Governance	Collaboration
Shared Capabilities				
Data Foundation Platform				
Deployment	Connectors	Traditional Clients	Communities	

erwin offers the only unified software platform that provides data and business process modeling, enterprise architecture, data governance and collaboration.

Digital transformation and data management aren't just technology conversations, but they do require the use of the right technology. Let us guide you in building a data-driven enterprise so you can see and then extract the fact-based insights you need for the desired results.

Get started today by requesting a
demonstration at
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