

The Positive Way

WAVESTONE

# ARTIFICIAL INTELLIGENCE: AN INCREASINGLY COMPLEX OPERATIONAL CHALLENGE

## AUTHORS



GEOFFROY AUDOUSSET  
[Geoffroy.Audousset@wavestone.com](mailto:Geoffroy.Audousset@wavestone.com)

THOMAS BROOKS  
[Thomas.Brooks@wavestone.com](mailto:Thomas.Brooks@wavestone.com)

**Wavestone's approach to understand the evolving Data landscape to enable your company to successfully adopt AI technologies.**

Robotic Process Automation, Computer Vision, Natural Language processing, Deep Learning...every year seems to come with a new subfield of Artificial Intelligence that must be implemented immediately and at any cost for companies wishing to remain competitive. It is therefore becoming increasingly complex to understand this landscape and successfully prioritise which technology should be selected.

Consequently, organisations are looking for efficient ways to adopt AI technologies in line with their increasingly complex business and regulatory requirements.

One feature all AI technologies have in common is that they are **data-driven**. Hence, one of the key success factors for organisations is to define and constantly adapt their data strategy.

What are the main data challenges? How should organisations adapt their strategy to make the most of the new AI technologies?

## DATA MANAGEMENT – AN INCREASING AMOUNT OF DATA IN THE REGULATOR EYE

When it comes to data, organisations are now facing two key challenges. On one hand, the massive amount of data available makes the adoption of AI technologies critical for firms wishing to compete. On the other hand, the regulator pressure enforcing new controls to protect consumer data is increasing.

### An increasing volume of data that makes the adoption of AI possible and critical

AI has been around since the 1970's in the simple form of expert systems, programmed to make decisions on simple criteria. For a long time, the volume and quality of data required to industrialise these technologies had not been available.

The **volume** and **the quality** of data firms now produce and consequently must manage is increasing exponentially. This is due in some part to the **Internet of Things** (IoT): the ability to put sensors or trackers on almost anything, the growing number of devices connected to the internet, digitisation and the consequential multiplication of interactions with customers. It is expected that this number will reach 20 billion connected devices by 2025 (IOT Analytics, 2018).

All in all, organisations have an enormous amount of data to manage and being able

to use it is now one of the challenges that defines a firm's ability to compete into the future. Consequently, modern versions of AI, such as Machine Learning, RPA and other subfields named above have the data required to drive the **fourth industrial revolution**.

With this new technology, processing power, high data quality and a vast burst in data volume, the net result will be increasingly accurate insights. The journey through architecture, data stores and analytics will take huge leaps forward and with these, a range of new opportunities and new means of competing will arise.

Data as an asset can provide insights and drive business change, as such, firms can be guilty of hoarding data for later use. These data stores can cause security concerns which is why the asset is under the growing regulatory scrutiny.

### Data Overload – Managing Regulation

Historically, controlling data has been one of the regulators favourite topics. For example, Sweden introduced the world's first Data privacy law in 1973. 26 years later the UK followed suit with the Data Protection Act 1998 (Greenleaf, 2012), making the misuse or mismanagement of personal data unlawful.

More recently, regulators have strengthened these controls to face the growing volumes of data. Since May 2018 the EU has set the precedent for best practise with the

introduction of the first Europe-wide General Data Protection Regulation (GDPR).

Industry specific regulations have also formed; Solvency II in the insurance industry enforces premium data management as a 'must have' scenario, significantly changing the way data used to calculate risk is collected (Rimes, 2014). 'Know your customer' (KYC) has been adopted by nations globally to form underlying guidance for local regulations for money laundering and other financial intelligence implications.

What happens when firms are deemed non-compliant? Facebook are to be fined \$5b for their misuse of user's data during their dealings with Cambridge Analytica. Fines are not cheap in the EU either, through GDPR, firms can be fined up to 4% of annual turnover, or 20m euros. In the UK, British Airways faced record £183m fine for a data breach.

Together, these regulations influence the how firms interact with their clients and partner's data. Business processes to verify customer legitimacy and protect consumer data are now not just key, but legislation.

The growing volumes of data and the pressure to implement AI technologies governed under evolving jurisdictions of international law create a restrictive and tough landscape for firms to navigate. Wavestone believes there are steps that can be taken to best manage large data volumes and help overcome these challenges.



## DATA MANAGEMENT – WAVESTONE’S APPROACH TO MAKE YOUR DATA AI FRIENDLY

### A Data Strategy for the Future

Some of the challenges faced by organisations willing to adopt AI technologies are to identify the key Business issues that could be tackled/improved by AI, locate and collect the data required and select the right tools. This creates a risk that tools turn out to be disconnected from key business challenges and are not (fully) usable due to the lack of data available.

At Wavestone, we believe there are 4 key points that provide the data framework required to successfully implement AI technologies. These can be grouped into four categories: data ambition, data delivery, data organisation and data governance.

The **ambition** of the use of data should be such that it is a core part of the business and is managed in a similar way to other key assets, with a data officer that facilitates progress and strives for innovation without micro-managing or controlling the flow of data.

A core indicator of good data strategy is influenced by the quick and successful

**delivery of your data.** Build solid services from your data factory by ensuring the first product or service produced shows real value either in benefitting operational performance or firm profit. In addition, products should be built to last by putting automation and longevity at the core of each service or product being delivered. This will help to further instil in the executive committee the value of a good data strategy.

The role of the **organisation** in successful data strategy is paramount. There should be bottom-up collaboration, with a key data sponsor on the executive committee and a level of independence between traditional IS and the data office. This encourages independence and quick decision making by the executive committee.

The **governance of the data** should be determined by the use case of the data, not by the seniority. This, in tandem with the bottom up governance ensures that the data scientists or those closest to the data with the best knowledge are the ones making or influencing the decisions.

Once these principles are implemented, the next challenge is to set up an IT infrastructure which can support these technologies.

### Becoming data-centric by design

The starting point for firms wishing to use AI technologies should be to become **data-centric** by design. In more traditional organisations, data will have a single or a few inputs to each store of data, with the data being accessed by multiple people, but very little communication between each store of data.

This results in isolated pools of data that are often managed in a different way. To benefit from a more modern data architecture, a firm’s data should be pooled into one or several **data lakes**, split up by business area, taking their inputs from external and internal sources.

This concept of centralised data lake(s) has recently been challenged by **block-chain architecture technology** that enable organisations to extract insights from multiple datasets without having to first pool the data. The MELLODY Project recently launched in the pharmaceutical industry is a first business use case of this new approach.

Once the data is available, it can be accessible through Business Intelligence (BI) tools such as Tableau, Cloudera or custom APIs and inhouse platforms. It is at this point where the data will first be able to be consumed by a user within the firm.

To maximise the value of this data, a team of **data experts** should act as gatekeepers, working together in a data lab to manage and facilitate a changing demand on the data and APIs. Effective design and governance of a data lab will allow greater innovation, data analysis, small scale proof of concepts and successful implementation of new business processes.

Once established, a data lab and an **engaged user base** will allow for further value to be derived through Artificial intelligence technologies such as Machine Learning or Robotic Process Automation. With confidence built, technical expertise can be diffused throughout the organisation to facilitate greater data use and value.

## Consolidated and Centralised Data Architecture and Solutions

### Data Ambition

- // **Data Killer Services:** Data that creates value for specific business services that is used by collaborators or clients
- // **Key Asset:** Data that is considered and managed just as any other part of the business
- // **Data Catalyst:** A CDO that facilitates, not controls; and strives for innovation

### Data Organisation

- // **Independence:** A Data Office that has own resources and competencies that are not dependent on roadmaps and cycles of traditional IS
- // **Sharp decisions:** One sponsor of the Data Office to be member of Exec Committee to accelerate decision-making
- // **Bottom-up collaboration:** Business services are to be directly implicated in production and have a reference data person in each

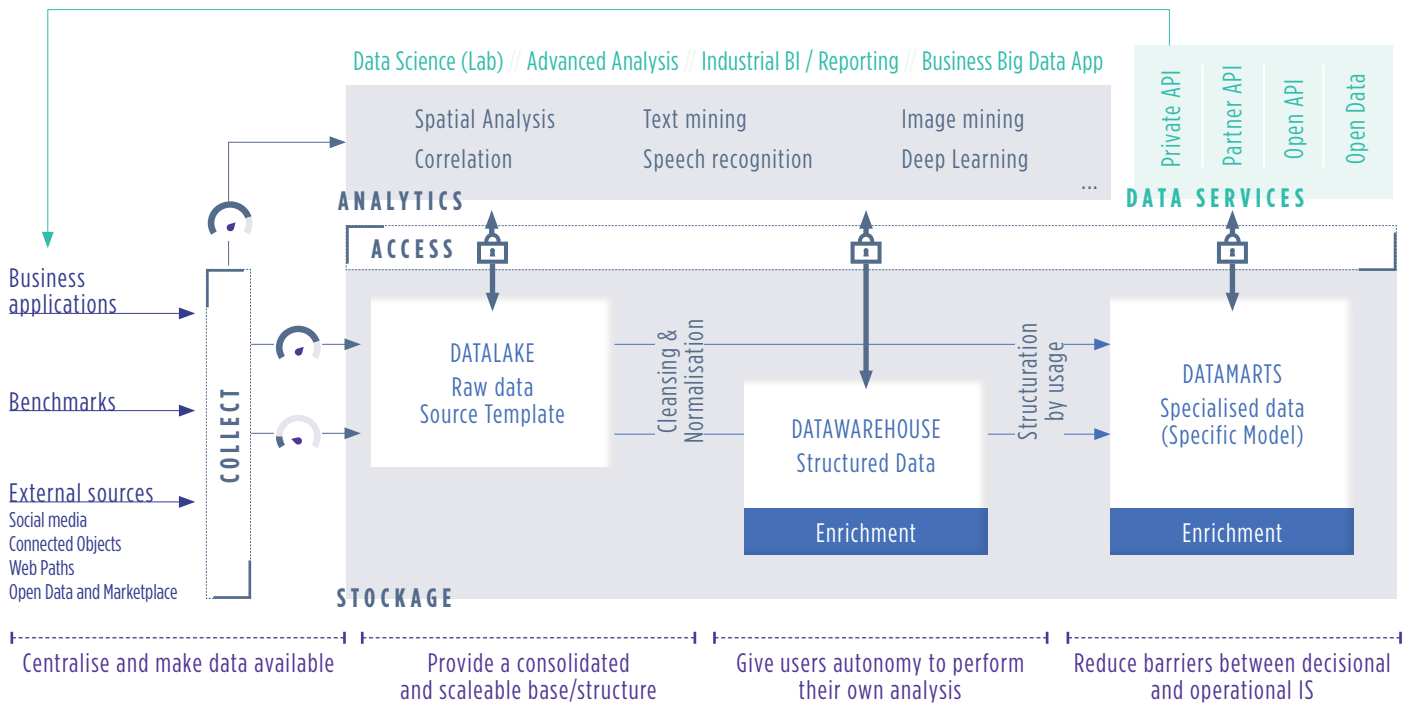
### Data Delivery

- // **Make it Happen, quick !:** The first experimentations have to be the engine of value in terms of operational performance or sales revenue
- // **Forget Labs, build solid:** An experimentation has no value unless it is implemented. Think of your lab, not as a lab, but as a factory made to create automated processes and long-lasting services and strives for innovation

### Data Governance

- // **Bottom-up governance:** Governance is to be determined by use case, not by seniority
- // **Know what you’ve got:** A Governance team that has specific data knowledge
- // **Make it Fun !:** Governance built in collaboration with the business services and deployed through engaging workshops

## Consolidated and Centralised Data Architecture and Solutions



### Benefit Realisation

In the long term, all areas across all industries provide great benefit to the way data can be managed. There are already many use cases where a data centric approach enabled the use of AI technologies, from customer relationships with chatbot solutions to cybersecurity with fraud detection and alerting.

**Fraud detection** is a common application of data management algorithms, where, as opposed to humans, algorithms can accept a real time input of huge transaction volumes and process the data. Using either of the different types of machine learning discussed above, there is no longer a need

for a single, static set of rules that determine if, for example, financial activity is fraudulent. Instead, an ever-growing set of data labelled and pooled against its characteristics can be used to determine the good from the bad.

This matching and clustering principle can also be applied more widely to other business transactions such as **predictive maintenance**. Predicting and prioritising breakdowns to equipment, based on usage and the matching of usage profiles against the asset portfolio. Where these profiles do not fit into any previously seen category and cannot be labelled, they will become anomalies which can be flagged to maintenance teams.

### USE PROOF OF CONCEPTS - DON'T OVERPAY FOR YOUR ASSETS

Implementing AI technologies now is critical but should not be rushed. Before industrialising and rolling out AI tools, detailed Proof of concept's can be used to make sure they efficiently support one or multiple Business issues. To ensure it is adopted by other parts of the organisation, identification of the increased Rol for Business Units should also be communicated alongside Proof of Concepts.

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### Areas already benefitting from the implementation of AI technologies...

#### FRAUD DETECTION

CUSTOMER PROTECTION  
FRAUD DETECTION  
REDUCED ANALYSIS LOADS

#### PREDICTIVE MARKETING

TARGETING NEW CUSTOMERS  
LOYALTY TRACKING  
EFFECTIVENESS OF COMMERCIAL ACTIONS

#### CYBERSECURITY

CONNECTION ANALYSIS  
DETECTION OF DIVERGENT CONNECTIONS  
PRIORITISATION OF ACTIVITIES

#### PREDICTIVE MAINTENANCE

BREAKDOWN PREDICTION  
STOCK PLANNING OF SPARE PARTS  
PRIORITISATION OF MAINTENANCE OPERATIONS

#### LOGISTICS

FLOW MANAGEMENT  
STOCK OPTIMISATION  
EVOLUTION OF STRUCTURES

#### CUSTOMER RELATIONS

CHAT BOT  
PREDICTION OF CUSTOMER INTERACTIONS

The Positive Way

**WAVESTONE**

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In a world where knowing how to drive transformation is the key to success, Wavestone's mission is to guide large companies and organizations in their most critical transformation projects, with the ambition of a positive outcome for all stakeholders. That's what we call "The Positive Way".

Wavestone brings together 3000 employees across 8 countries. It is a leading independent player in the european consulting market.

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