

The logo for 'fabrique.ai' is displayed in a dark grey sans-serif font. The letters 'i' and 'l' are highlighted in blue. Above the 'i' and 'l' are blue arrows pointing towards each other, with a white rectangular box containing the text 'MIND THE GAP' positioned between them.

fabrique.ai

MIND THE GAP

Fast is slow, but continuously, without interruptions  
with ZERO GAP from just now

**PROBLEMS → BUSINESSES ACCUMULATE PROCESS DEBTS IN DECISION MAKING**

**WE MAKE DECISIONS AND REACT SLOWLY**

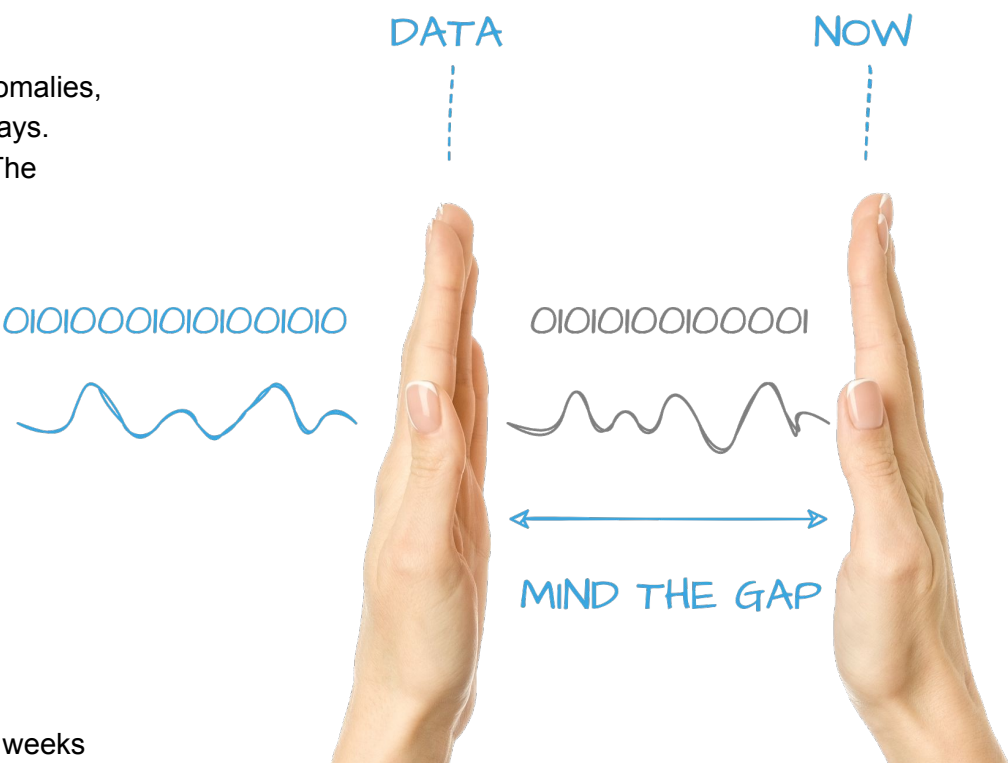
Businesses respond to errors, defects, deviations, anomalies, force majeure too slow. Reaction may take hours or days. Slow response leads to accumulation of inefficiency. The longer the accumulation, the bigger the losses.

**OUR PREDICTIONS ARE WEAK**

Businesses takes data from the past to make predictions for the future. The bigger the gap between the past and just now, the more data is eliminated from analysis. The less up-to-date and complete data, the less accurate and reliable predictions. The more risky and costly decisions are made.

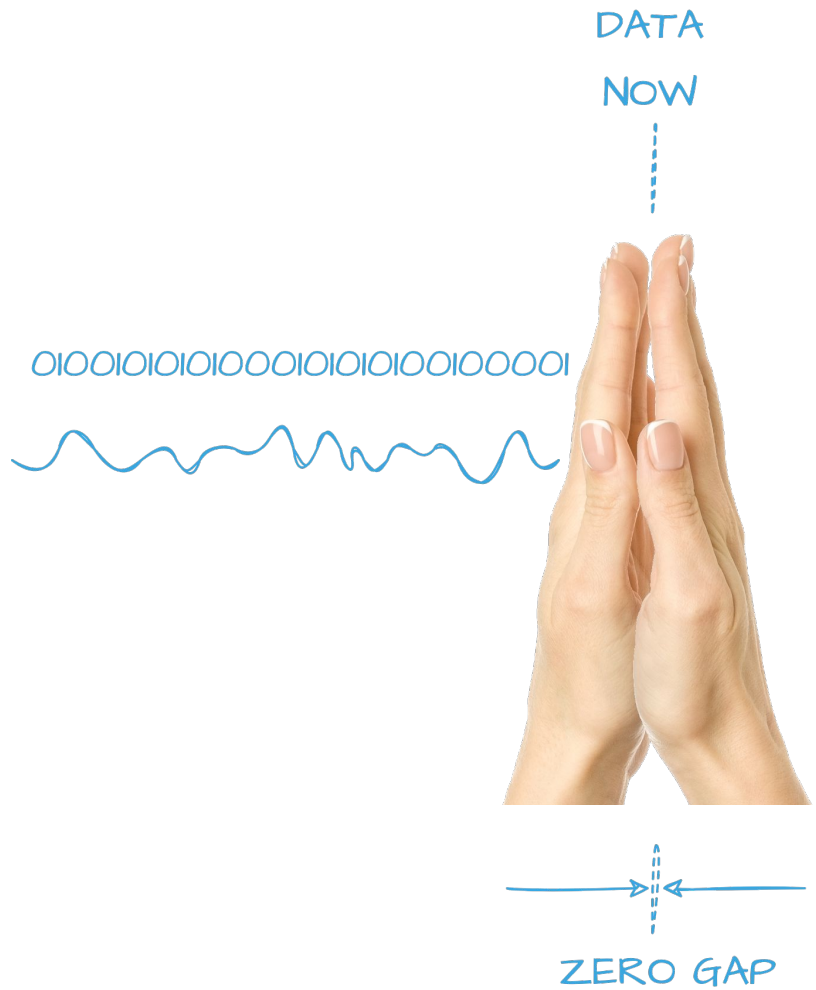
**CHANGES TAKE WEEKS**

Businesses move projects from idea to production for weeks and months, if not years. Every 1 day of delay means loss of market share, higher cost of customer acquisition, unsatisfied employee. The longer the time to market, the more costs are accumulated which is crucial for ever-changing environment.



SOLUTION → THIS IS HOW CUSTOMERS DEFINE FABRIQUE.AI

“ **Fabrique.ai** is a software platform to build, orchestrate, and execute **decision making scenarios online**: process event streams, make AI decisions, guarantee accuracy and reliability of predictions, prevent errors accumulation, manage lifecycle of decision making projects. The platform provides a wide range of tools for creating a new modern architecture of decision making systems **for an ever-changing environment**. ”



MARKET → EVERY ONE BUSINESS UNIT













Today almost **every one organization** converges from offline to online and from online to offline. **Every one business unit** has to improve efficiency to stay competitive on the ever-changing market.

Gartner defines 12 Top Strategic Technology Trends that will accelerate digital capabilities and drive growth **within the next 3-5 years**.

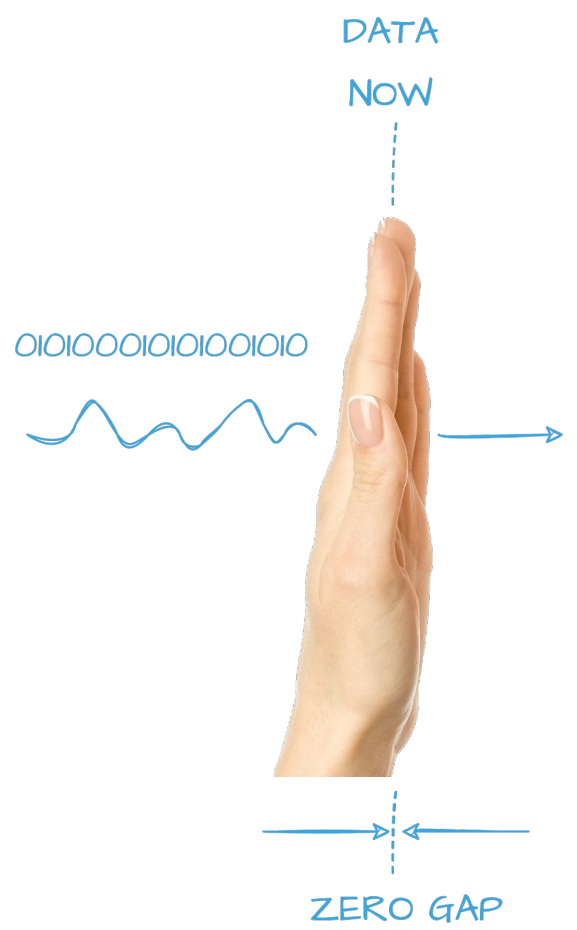
Fabrique.ai addresses 8 from 12 trends helping business units to **eliminate process debts and move to the next technology level** by processing event streams online, making the most accurate and reliable AI based decisions, and preventing the accumulation of inefficiency.

Fast is slow, but continuously, without interruptions, **with zero gap from right now**.

# Top Strategic Technology Trends for 2022

 Data Fabric	 Composable Applications	 Distributed Enterprise
 Cybersecurity Mesh	 Decision Intelligence	 Total Experience
 Privacy-Enhancing Computation	 Hyperautomation	 Autonomic Systems
 Cloud-Native Platforms	 AI Engineering	 Generative AI

**VALUE PROPOSITION → FAST IS SLOW, BUT CONTINUOUSLY**



**MAKE DECISIONS AND REACT ONLINE**

The only way to prevent an accumulation of inefficiency is to make decisions online and react immediately: respond to errors, prevent defects, predict quality, control sales, manage assortment,..

**GET THE MOST ACCURATE AND RELIABLE PREDICTIONS**

The only moment to make the most accurate and reliable predictions is now, because the most up-to-date and complete data are available: run multiple concurrent strategies, monitor business metrics, optimize and retrain algorithms continuously, detect anomalies,..

**MAKE CHANGES CONTINUOUSLY**

The only option to move projects from idea to production for minutes is to be permanently prepared to adapt to an ever-changing environment: configure business logic without coding, be protected against “black boxes”, have “plan B” strategies, manage computational resources automatically,..

MIND THE GAP → THIS IS HOW BUSINESSES DEFINE **NEEDS** IN ONLINE DECISION MAKING

**MANUFACTURER**

Predict the quality of the final product **within 10 seconds** after the 1st unit is released, not 1000th

**MOBILE OPERATOR**

Predict the reason for a phone call to the call center **within 3 seconds** after the 1st ring

**FAST FOOD NETWORK**

Control the hiring of employees **within 15 minutes** after the applications

**FAST FOOD NETWORK**

Monitor the performance of promo **within 5 minutes** after the sales

**AUTO DEALER**

Recommend the works and services to the master-acceptor **within 3 seconds** after a client **contacts** the technical center

**FAST FOOD NETWORK**

Recommend dishes to a visitor **within 1 second** after opening the mobile app taking into account individual preferences, local weather and trends

**PHARMACY NETWORK**

Recommend medicines to the pharmacist **within 3 seconds** at the checkout

**RETAIL NETWORK**

Predict products on-shelf availability for the next 15 minutes **with zero gap** after the sales

**DIY RETAIL NETWORK**

Guarantee data consistency of 300+ information systems **with zero gap** from data changes

**BANK**

Provide 1000+ analysts and 100+ applications with access to over 350+ on-demand data sources **with zero gap** from inbound events

We've got & solved **dozens of needs**

# WHAT ALTERNATIVES ARE CONSIDERED TO FABRIQUE.AI?

## VENDOR SOLUTIONS

Corporations compare Fabrique.ai with products like Experian PowerCurve, SAS RTDM, IBM Decision Engine, etc.

The concerns about vendor systems:

- vendor lock-in,
- platform dependency,
- zoo of proprietary products,
- limited functionality,
- slow development.

## IN-HOUSE DEVELOPMENT

In-house development is considered to mitigate the risks associated with vendor systems. Fabrique.ai is compared with projects like Apache Flink, Samza, Spark Streaming.

The concerns about in-house development:

- zoo of open source systems,
- lack of qualified engineers,
- hard to build a reliable architecture,
- the way of trials & errors,
- total cost of ownership is high.

## CLOUD PLATFORMS

Popularity of Cloud Platforms is caused by the growing complexity of IT infrastructure and the explosive growth of issues solved by businesses. Fabrique.ai is compared with Cloud Platforms like Confluent.

The concerns about cloud platforms:

- fragmentation of data and services,
- cybersecurity issues,
- cost of ownership & SLA,
- qualified engineers are required.



## FABRIQUE.AI

Fabrique.ai is considered as a Confluent for online decision making scenarios automating every stage of the projects lifecycle and delivering business users control over functionality.

# THE ENGINE USAGE SCENARIOS

## DATA DISTRIBUTION

Modern business means 10 to 10,000 brunches, factories, warehouses; 10 to 100,000 types of products and services; 100 to 10,000,000 clients; 10 to 100 information systems and data sources that generate 10 to 1,000,000 events every second and 10 to 1000 analysts, struggling with these data daily.

Every minute business and external environment are transformed, which leads to data changes and errors. Gaining access to data may take days or months. All this time, errors accumulate and are not corrected. As a result, business gets forecasts and makes decisions based on inconsistent and irrelevant data. Multiply that by the complexity and flexibility of today's business.

Fabrique.ai automates data collection, processing, distribution from 100s data sources, data validation, access control, anomaly detection, alerting to ensure data relevance and consistency with zero gap from reality.

## ONLINE FORECASTING

Today's business solves 100s of analytical tasks such as quality control, maintenance prediction, online scoring, anomaly detection, fraud prevention, promo forecasting, supply optimization, demand forecasting, inventory management, personalization, news categorization, etc. Each project involves dozens of analysts, data scientists, data engineers, product owners.

In a constantly changing environment, business needs online analytics and the most accurate forecasts. At the same time, the predictive power of the data falls off rapidly over time, and AI algorithms lose accuracy. The most accurate predictions require zero gap data from reality and continuous retraining on the latest data.

Fabrique.ai automates every stage of the AI algorithms life cycle, such as data connection and transformation, features storing and versioning, algorithms decomposition for production execution, validation and testing, building and deploying, computational resources management, staging and production deployment, concurrent running, metrics control, optimization and re-training with a zero gap from reality.

## ORCHESTRATION

Each data transformation scenario requires connecting to 10s data sources, reading and writing results in multiple storages (there is no one universal), executing 10s consequent and parallel operations, integrating with 10s consumers, involving monitoring 100s metrics and detecting anomaly. Scenario execution may take 0.1 second to 100 days.

Today's business faces the choice of a vendor solution or in-house development using open source components. The first option brings the risks of vendor lock-in, slow and expensive implementation, insufficient development pace. The second requires investing in software development and choosing the right architecture with unpredicted risks.

Fabrique.ai provides businesses with an orchestrator and a framework that allows to easily build from atomic operations event-driven data transformation scenarios of any complexity with zero gap from reality.

## BUSINESS CASES

### DATA DISTRIBUTION

*#bank #retail #manufacturer*

**Online data distribution.** An organization has 350 data sources, 90 analytical applications, 270 data labs with more than 1300 users and about 15 PB of various data. The total intensity of data streams exceeds 1,000,000 events/sec. The data is scattered. There is no single mechanism for the exchange of information between data owners and consumers: data scientists, data engineers, data analysts, business users.

**Results** The delay in providing data to consumers has been reduced from 6 months to 5 seconds. The data connection, processing, data quality control, resource management and configuration of operations have been automated and carried out with zero gap from reality.  
<https://habr.com/ru/company/sberbank/blog/588144/>

### ONLINE FORECASTING

*#MNO*

**Customer service.** Every day, over 30,000 customers call a call center when they encounter a problem. It takes 5 minutes on average to connect a client to an operator, listen to a problem, switch to a specialist and listen to the problem again. At the same time, an organization collects lots of data: transactions, operations, communications, online activity on the customer level until the moment of the call. In 80% cases the reason of a call can be predicted from data. It is required to predict the reason for the call within 5 seconds to reduce the waiting time and improve the quality of service.

**Results** The waiting time has been reduced from 5 minutes to 3 seconds. The savings in the work time of call-center operators amounted to more than 800 hours for every 10,000 calls. An infrastructure has been created to monitor the quality of customer service in real time, predict and respond to problems.  
<https://vc.ru/services/353119-prinyatie-resheniy-so-skorostyu-potokov-sobytiy-na-zhivom-primere>

### ONLINE FORECASTING

*#manufacturer*

**Quality control.** Every 90 seconds, 1 unit of finished product leaves the conveyor. The technological process is complex. Quality control takes more than 1 day and is carried out after the fact. High risk of low-quality output during the day. In 90 seconds, it is required to: collect and process data from different sensors and systems, make a prediction about the quality, determine the place in the process where the quality is deteriorating.

**Results** Prevention of the risk of producing 1000 low-quality finished goods and losing 1 day of production downtime.

# BUSINESS CASES

## ORCHESTRATION

#bank

**Online scoring. Credit conveyor.** A bank processes more than 1 million applications every day. 1% increase in delinquency due to algorithms losing predictive power is costing millions of dollars per month. It is required to reduce the time for detecting the loss of predictive power by models from 1 month to 1 day, to increase the predictive power of models, and to reduce time to market of new models from 3 months to 1 week.

**Results** Loss of predictive power of algorithms is detected in real time. The anomaly detection in data quality is provided online. Time to market of the new versions of algorithms has been reduced to 1 day. The lifecycle of algorithms has been reduced from 3 months to 10 days. The increase in the predictive power of algorithms is about 30%, which led to an increase in approval rate at a given level of delay. <https://moskva.mts.ru/about/media-centr/soobshheniya-kompanii/novosti-mts-v-rossii-i-mire/2020-07-24/mts-bank-v-tri-raza-sokratil-vremya-rascheta-ocenki-kreditosposobnosti>

## ONLINE FORECASTING

#retail

**Personalization.** A visitor wants to place an order. Each visitor has his own preferences: dishes, ingredients, calories, drinks. Placing an order takes up to 5 minutes. This leads to queues, congestion of visitors and dissatisfaction with the speed of service. It is required to reduce checkout time by personalizing recommendations.

**Results** Data streams from cash desks, mobile applications, wi-fi points are connected. For each visitor, a history of orders, changes in preferences is accumulated. Trends are continuously predicted taking into account the time of day, day of the week, location of the point of sale, actual weather. At the moment of opening the application, a personal recommendation is calculated for the visitor, taking into account personal preferences, trends and the current context. Formation of the recommendation takes 1 second. The checkout time is reduced from 5 to 2 minutes. +4% average check growth due to referrals.

## ONLINE FORECASTING

#retail

**Demand forecasting. Assortment management.** A pharmacy network has 2,000+ points of sale and 3,000 SKUs. Demand at each location is different and changes rapidly over time. The lack of some SKUs in the assortment and in stock, as well as an excess of stocks, lead to a decrease in the efficiency of the network.

**Results** The system is connected to data streams from payment terminals in real time. The facts of lack of drugs are recorded. For each SKU, a demand forecast for 1, 3, 7 days is built every 5 minutes. An assortment optimization is calculated continuously. An auto-order for the supply of drugs is being formed. Inventory optimization allowed to release working capital by 11%. The expansion of the assortment, taking into account local demand, allowed to increase sales by 6%.

## BUSINESS CASES

### ONLINE FORECASTING

*#bank*

**Fraud prevention.** The bank processes about 10,000 transactions every second. Preparation for the implementation of fraudulent operations is manifested in various information systems. It is required to combine data from different systems, continuously detect behavior that has signs of preparation, block risky transactions in real time, and manage business logic without the involvement of developers.

**Results** 96% of fraudulent transactions are blocked. Configuring business logic of the new patterns doesn't required programming and takes minutes.

### ORCHESTRATION, ONLINE FORECASTING

*#bank*

**News categorization.** A bank receives about 500,000 news daily in Russian and English regarding corporate clients. It is required to automate the processing of the news flow in real time; identify organizations, people, locations; categorize news by given topics; match organizations with customers; predict the degree of importance of news for customers; integrate the solution with other bank systems.

**Results** The categorization accuracy exceeded 75%. The news categorization takes 2 seconds. The commissioning time for new AI algorithms has been reduced to 1 hour. An infrastructure has been created to allow the internal data team to continuously improve the accuracy of predictions and reduce commissioning time.

### ORCHESTRATION

*#insurance*

**Scoring conveyor.** The customer scoring is based on the analysis of data from dozens of internal and external systems. The customer assessment process includes both fully automated and expert procedures.

**Results** The system allowed to reduce the time of data processing from 1 day to online. The time to make of the conveyor changes has been reduced from 1 month to 1 day.

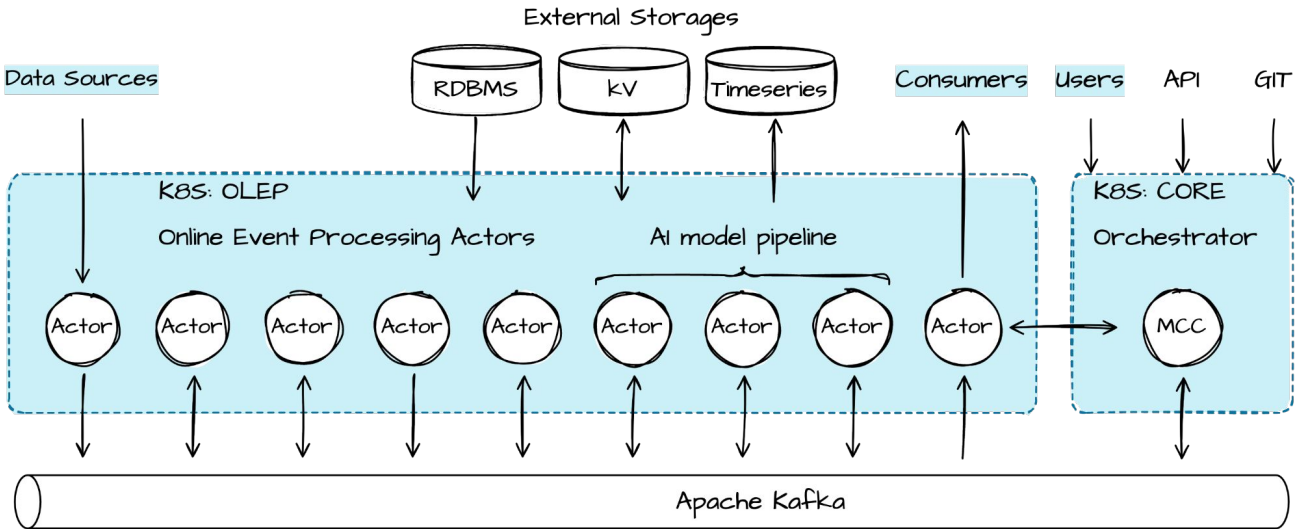
# SOLUTION ARCHITECTURE

**Typical scenario.** An organization has 10 to 100 data sources like online activity, payment transactions, geolocation, sensors, devices, data changes in operational databases, etc. The data sources generate 10 to 1,000,000 events every second. There are 10 to 1,000 consumers like data analysts, customers, applications, or business processes. The business solves 100s of analytical tasks in parallel. The engine allows to develop and orchestrate with zero lag from reality data processing scenarios containing such operations as data connection, distribution, processing, validation, versioning, anomaly detection, monitoring, forecasting, AI algorithms execution, A/B testing, retraining, optimizing, etc.

**Architecture.** The engine is an implementation of the OLEP (Online Event Processing) approach providing guarantees of data consistency, high performance, fault tolerance and scalability at executing complex data transformation scenario with zero gap from reality.

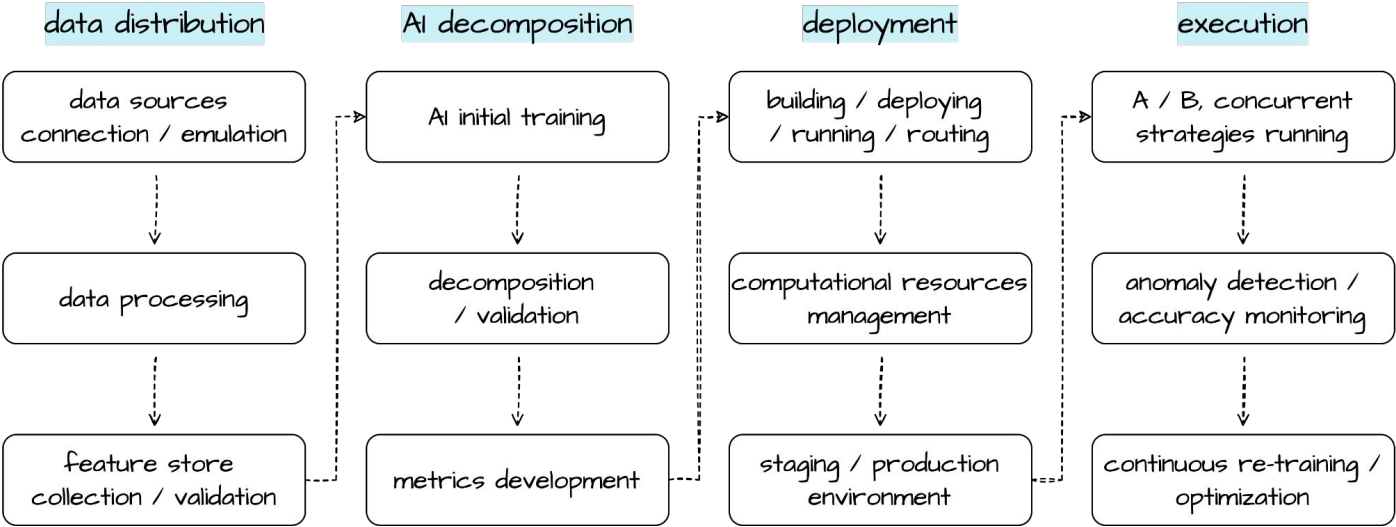
**Infrastructure.** Kubernetes, Apache Kafka. Optionally: RDBMS, Timeseries, kV, Graph, Document, any. Business logic: Python & Low-code / No-code DSL. ML libraries: any. Zero trust. On-premises & Cloud native.

**Components.** The engine provides an orchestrator (MCC, Mission Control Center) and basic Python libraries (Atelier, Actor). The libraries are used to develop stateless atomic data processing operations. An online data transformation scenario is built from these atomic operations. The orchestrator provides an UI and API to build, manage and execute data processing scenarios with zero gap from reality. MCC automates building, deployment, execution, A/B testing, routing, monitoring, versioning, features collection, metrics counting, computational resources planning and management, role-based access management, logging, alerting, scenario visualization, etc.



# COST-EFFECTIVE DATA DISTRIBUTION & AI ENGINEERING LIFECYCLE MANAGEMENT

**Cost efficiency** is made up of multiple variables such as license, staff hiring, qualification, speed of implementation, making changes and hypothesis testing, projects time to market, number of projects in production, level of automation, collaborative work, low-code & code re-usage, knowledge accumulation, protection against the risk of wrong predictions, fault tolerance, performance, scalability, security, cost of infrastructure, etc.



## The engine delivers the best cost-efficiency

- new implementation takes **3 months**
  - project time to market from **1 to 14 days**
  - speed of making changes from **zero to 10 minutes**
  - data is processed with **zero gap** from reality
  - the best forecast **accuracy** is due to the most up-to-date data
  - protection against the risk of wrong forecasts is provided **online**
  - high level of code **reuse** and **collaborative** work
  - **low-code** is supported via API
  - the required computational resources are **minimum**
  - the system works atop of **existing** IT infrastructure
- the number of connected data sources is **not limited**
  - the number of consumers is **not limited**
  - the number of executing projects is **not limited**
  - the number of concurrent running strategies is **not limited**
  - the number of counting metrics is **not limited**
  - the re-training / optimization of AI can be **automated**
  - the process of storing features is **automated**
  - the resources are strictly **separated** between the projects
  - **role-based** access control is provided
  - **zero trust** approach is supported
  - no **vendor lock-in**

**MAKE THE MOST ACCURATE & RELIABLE DECISIONS  
WITH ZERO GAP FROM REALITY**



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