Macchine Utensili

gruppo tecniche nuove

CONVEGNO PRODUZIONE SNELLA

OBIETTIVO POSSIBILE

COME RIDURRE GLI SPRECHI NEI PROCESSI PRODUTTIVI

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MECSPE TECNOLOGIE PER L'INNOVAZIONE

Le nuove frontiere della digitalizzazione per una manifattura sostenibile

Lucia Chierchia
Managing Partner & Chief of Open Innovation Ecosystems

GELLIFY

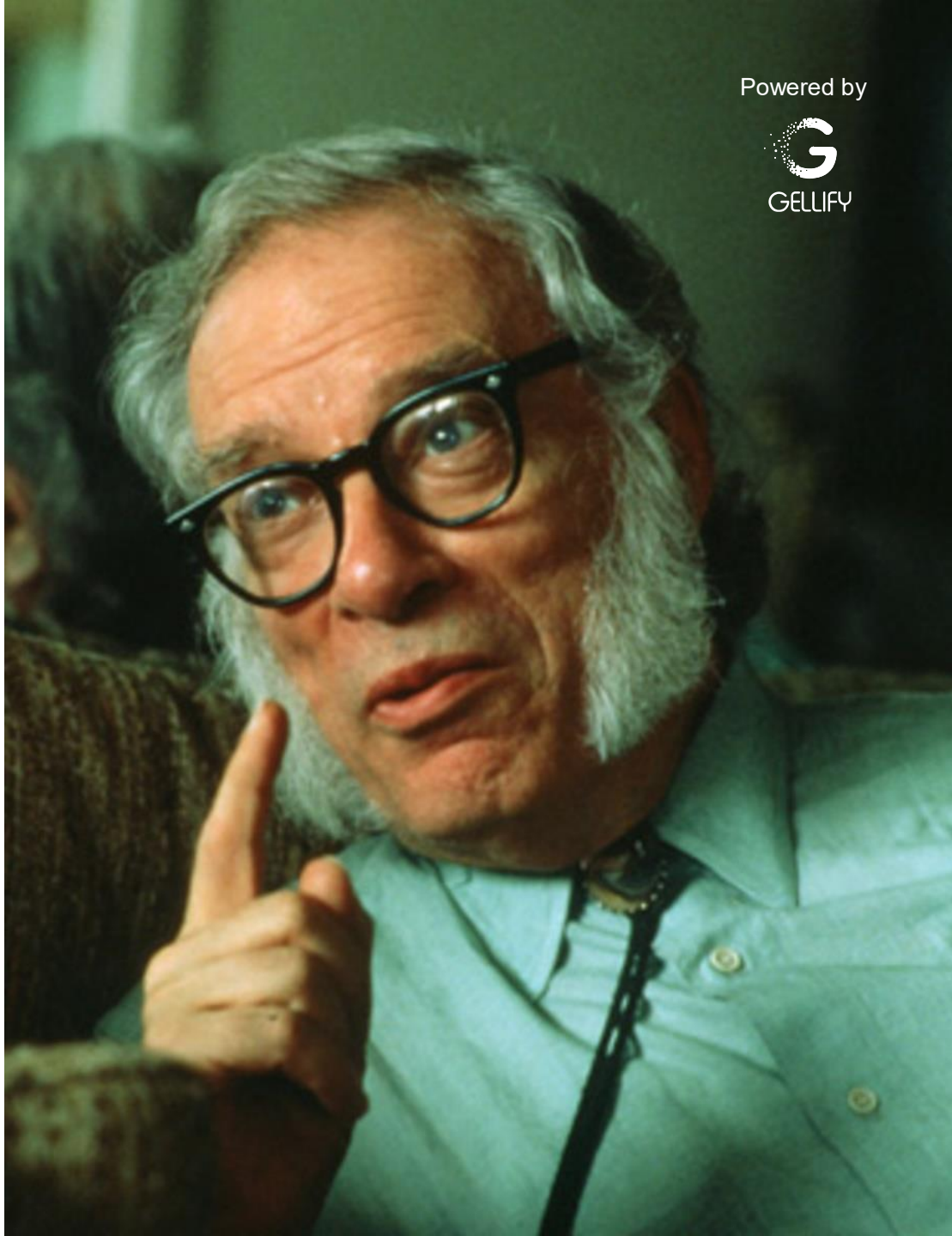
NEW TECHNOLOGIES are profoundly changing industrial production and requires the establishment of new interactions between humans and machines. Asimov's Laws have never been more relevant than now...

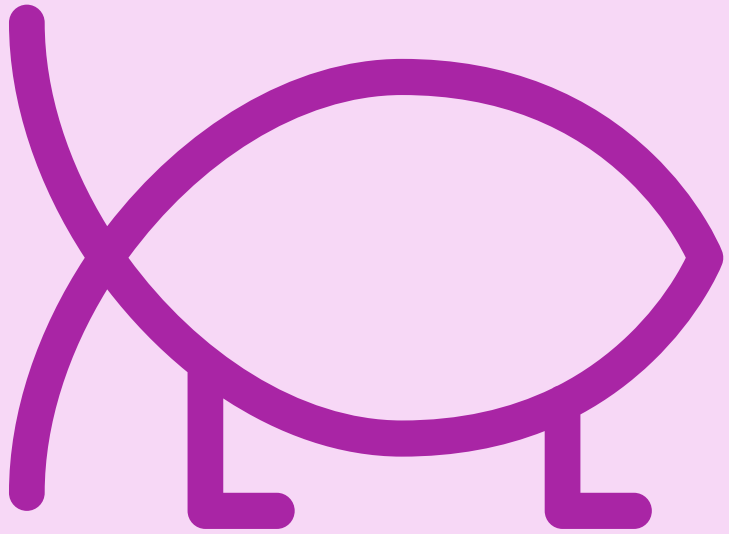
The Three Laws of Robotics

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm;
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law;
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law

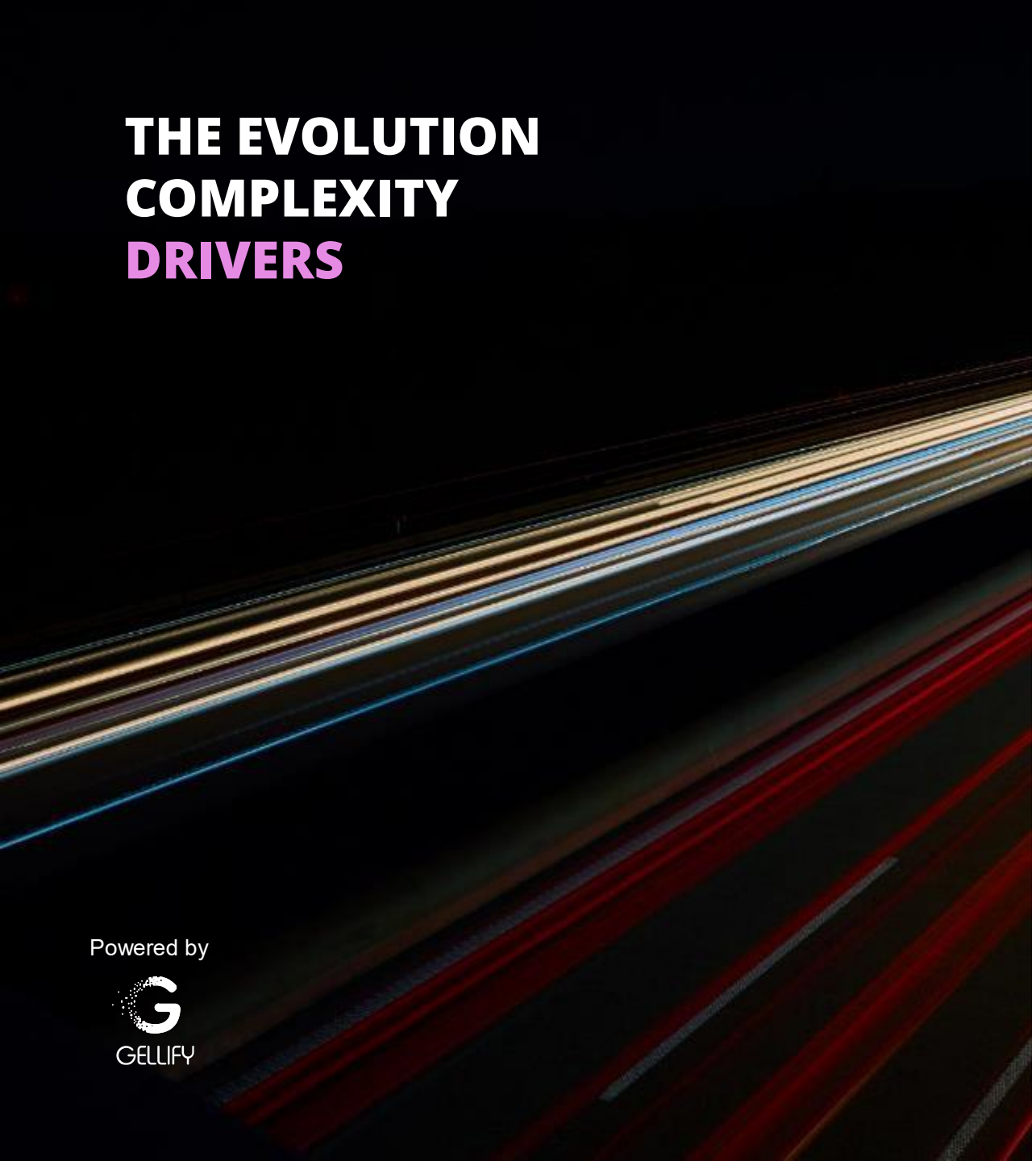
Isaac Asimov

from "I. Robot" 1950





Manufacturing Evolution: Complexity Drivers

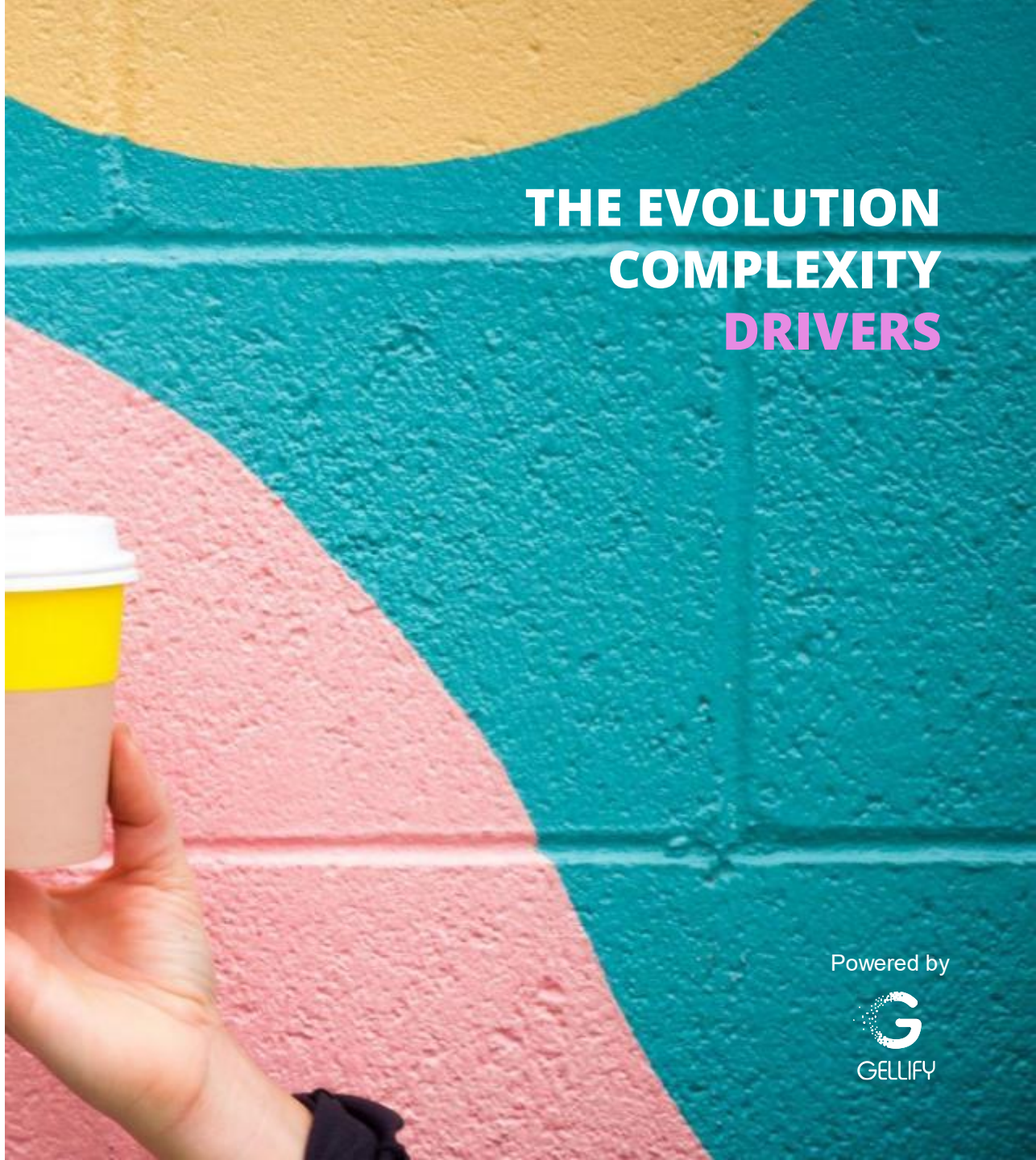


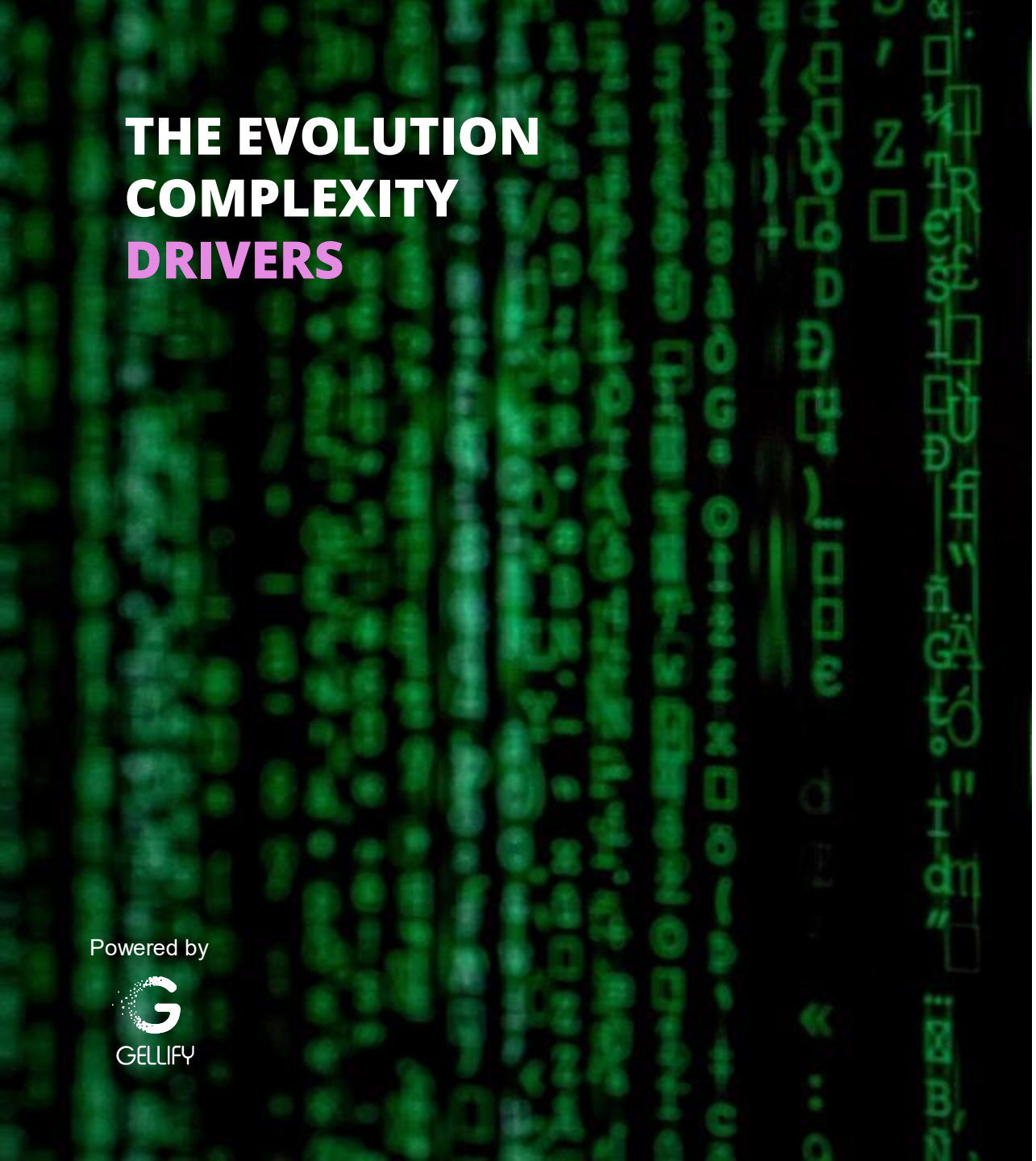
RATE OF CHANGE

- Emerging technologies show a **high rate of change.** Companies have started to **understand** the **mechanisms** and techs have already evolved.
- Consequently companies have to **question** periodically their **strategies** and they have difficulties in taking **decisions** about direction of technology roadmap and business models

COMPETENCES

- Technology driven innovation could imply also the **onboarding of new competences**, that must be integrated into the existing technology framework, with consequent implications not only on **company asset** but also on **organization structure.**
- Since new **technologies** leverage competences that are **not core** for most companies, crporates miss the required knowledge and experience to **understand application potential.**
- There haven't the basic elements to **take quick decisions** and create a **dialogue with new players**



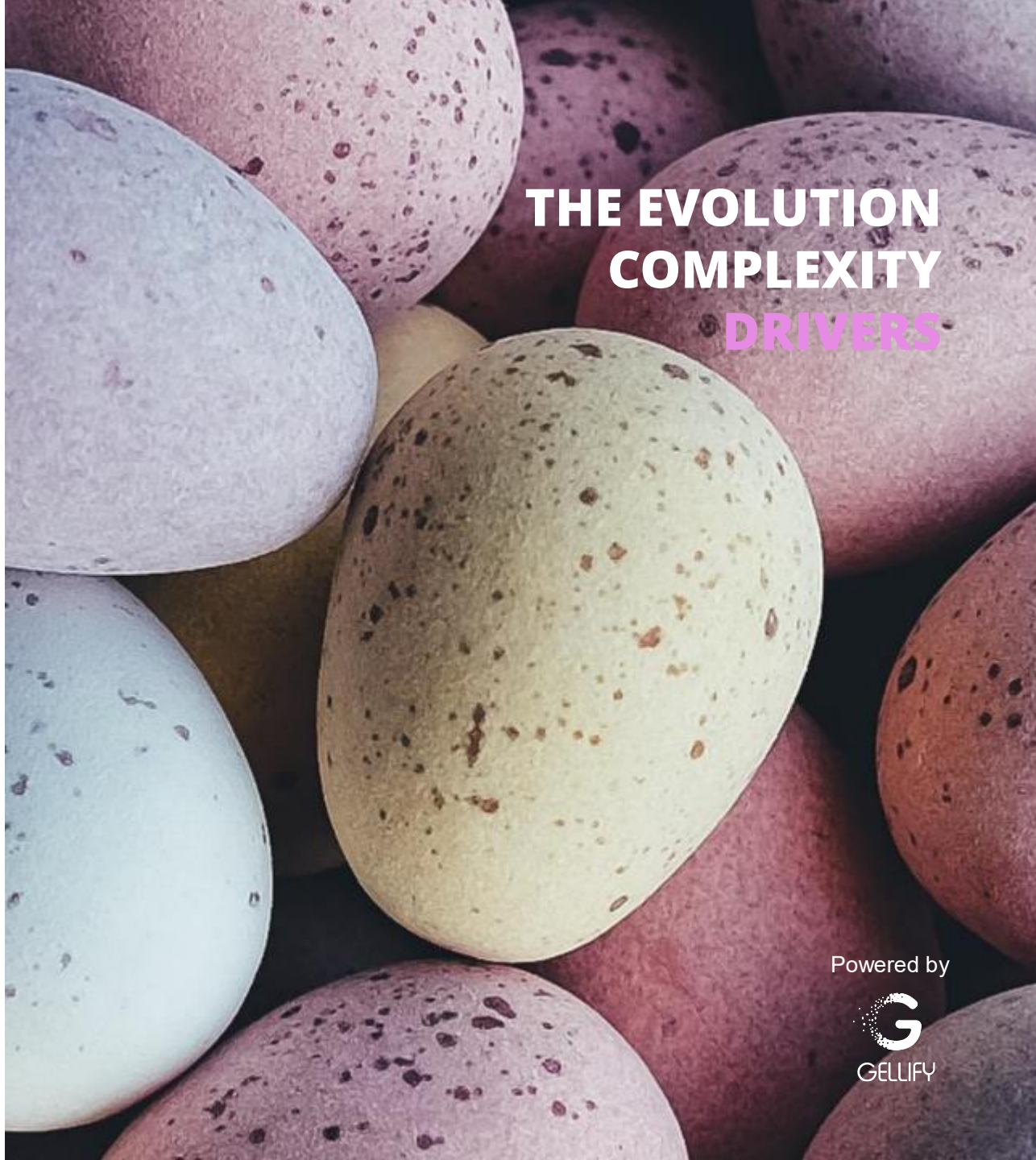


DIGITAL

- New techs are often **totally digital**
- They are **not tangible** and consequently we can’t touch them
- Some companies have difficulties in **understanding** their **potential**
- The real **challenge** is not digital but **phygital**, digital and physical together: it is about the integration of a digital layer within a context that is not digital, in a mechanical, steel, chemical, pharmaceutical company ….
- It is a complex challenge as it brings **uncertainty along the decision-making processes**. But we can't wait until we have all those skills at home to be able to decide whether or not to invest in a new technology. We have to invest, quickly

START-UPS

- Companies have understood that the collaboration with startups brings not only inspiration, but true innovation, as startups are carriers of solutions that allow companies to **develop new business**, on the one hand, and to **increase operational efficiency**, on the one hand.
- Companies have understood that they can **go further pilot projects,** making those technologies scale within all company functions, through an **agile and high-impact process**.
- But working with a startup is not easy, since it is a **company *in fieri*...**It's like **drive a car while building it!**
- However it's worth it because from those startups we can not only take solutions to make our companies more competitive, but we can also grasp the **entrepreneurial spirit** that forces us to open our minds towards new business opportunities.



VENTURING

- Companies not only transform startups into their own strategic suppliers, but **invest in startups** by entering their capital, to become actors in a business evolution that cannot only happen outside the walls of their company.
- Moreover, companies **create CVCs** to systematically invest in startups. And it's not just the big multinationals
- Finally, companies **spinoff,** stimulating their employees to get their ideas out of the drawer, looking for new business opportunities that leverage the company asset.

THE EVOLUTION COMPLEXITY DRIVERS

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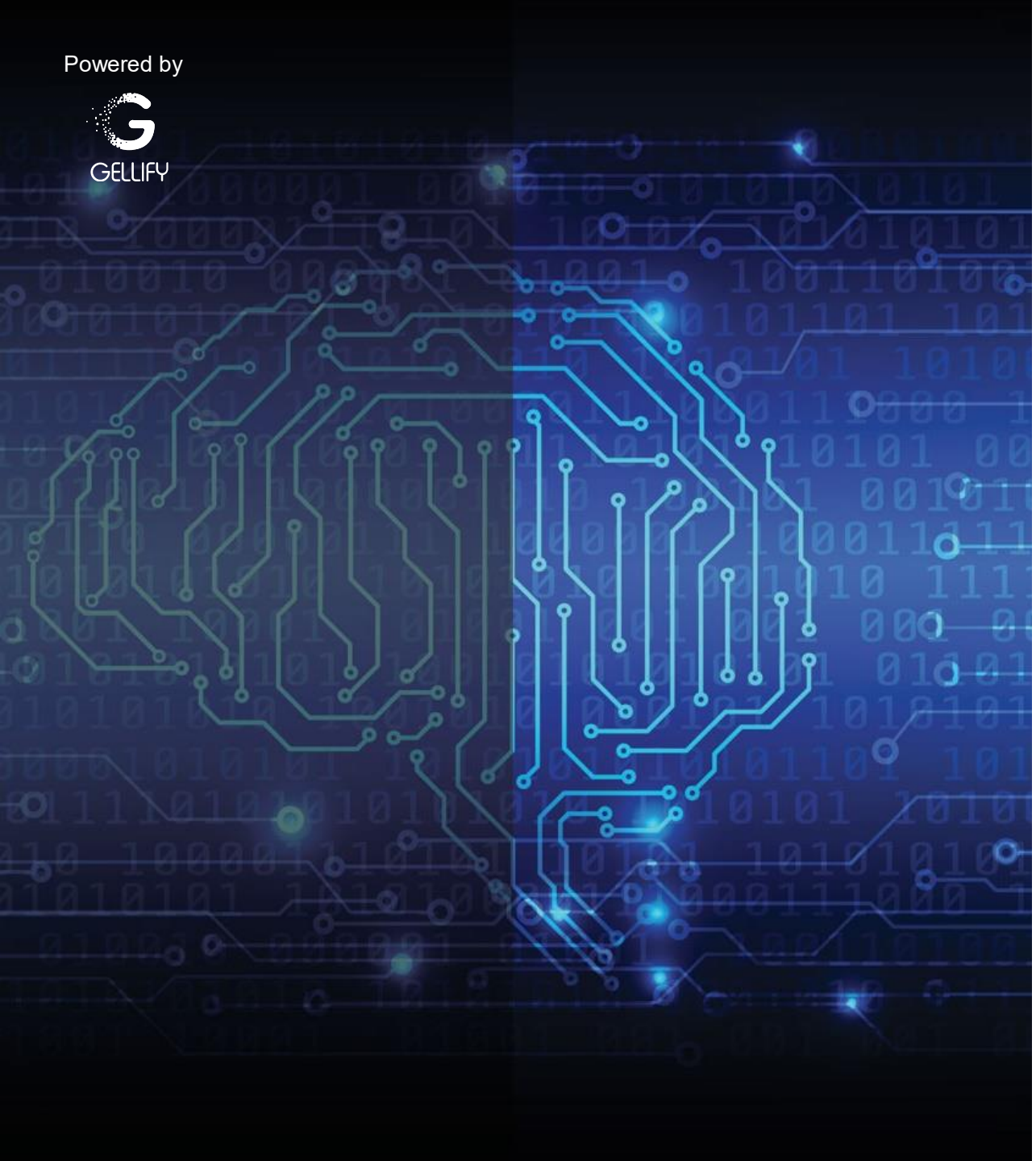
Today’s business scenario is
Volatile
Uncertain
Complex
Ambiguous.

We need a big shift in our way of working.

Technology Roadmapping: paths to innovation leadership



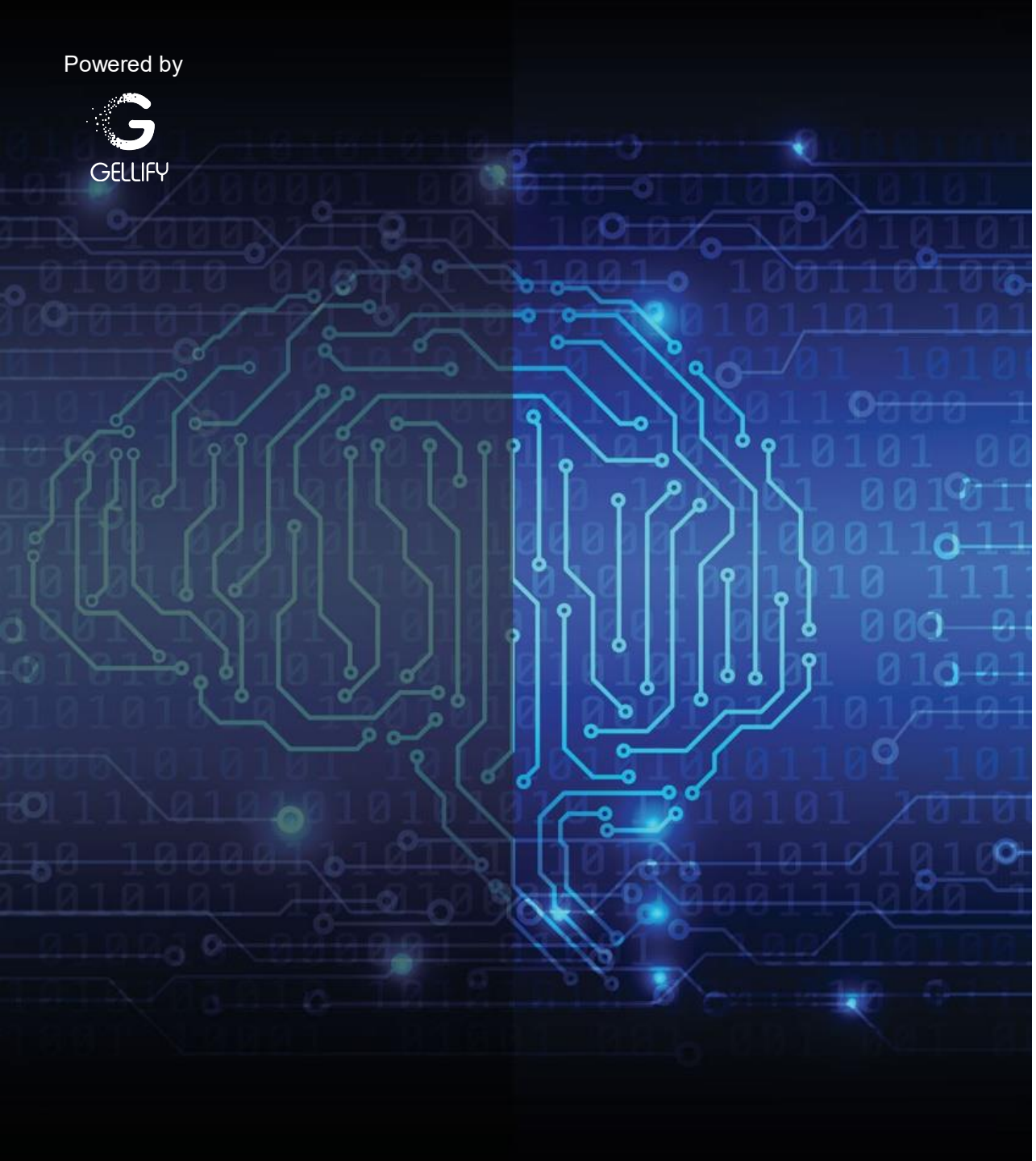
AI & Machine Learning

Tech Cluster | Description

Artificial Intelligence refers to capability of digital computer or computer-controlled robot to **simulate intelligent human behavior**.

It refers to **cognitive processes**, including **learning** (the acquisition of information and rules to use the information), **reasoning** and **problem solving** (using the rules to reach approximate or definite conclusions), and **self-correction.**

Specific applications include machine vision, speech recognition and expert systems.



AI & Machine Learning

Tech Domains | List

- Image Recognition & Signal Processing
- Deep Learning
- Machine learning
- Search and Optimization
- Clustering
- Computer Vision
- Probabilistic Methods
- Automated Reasoning
- Artificial Neural Networks
- Natural Language Recognition
- Collaborative Systems
- Statistical Pattern Recognition

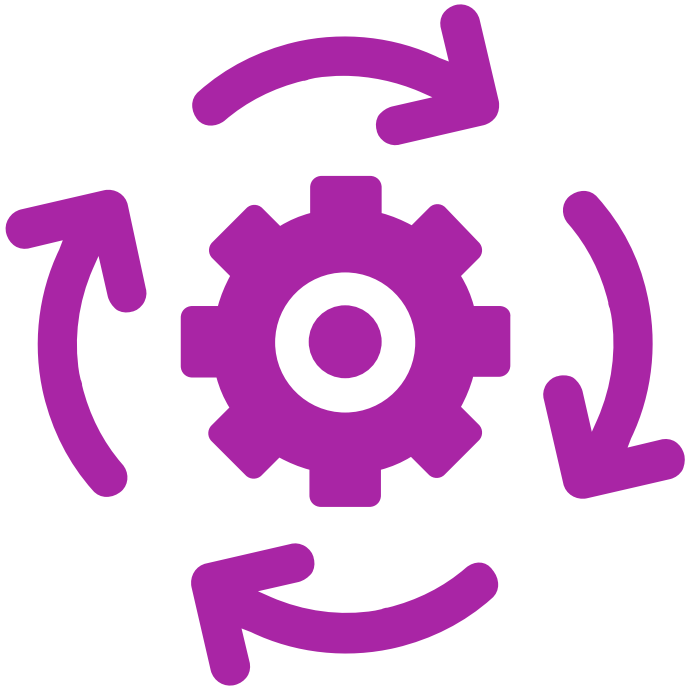
AI & Machine Learning

Tech Domains | Description

Search & Optimization

The Search and Optimization algorithms have the objective of **finding the optimal solution to a given problem following certain constraints and goals**.

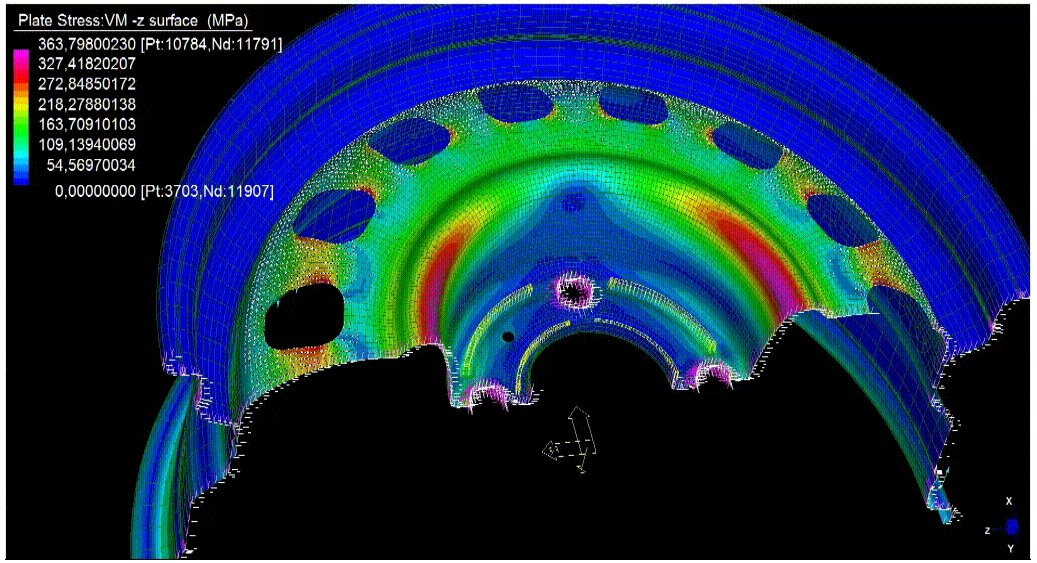
The solution search process starts with some sort of **guess**, inferred on the initial known data, that can be **refined incrementally** until no additional refinement is possible.



AI Based Optimization

DESIGN & ENGINEERING

Support to designers by optimizing
the configuration of the components



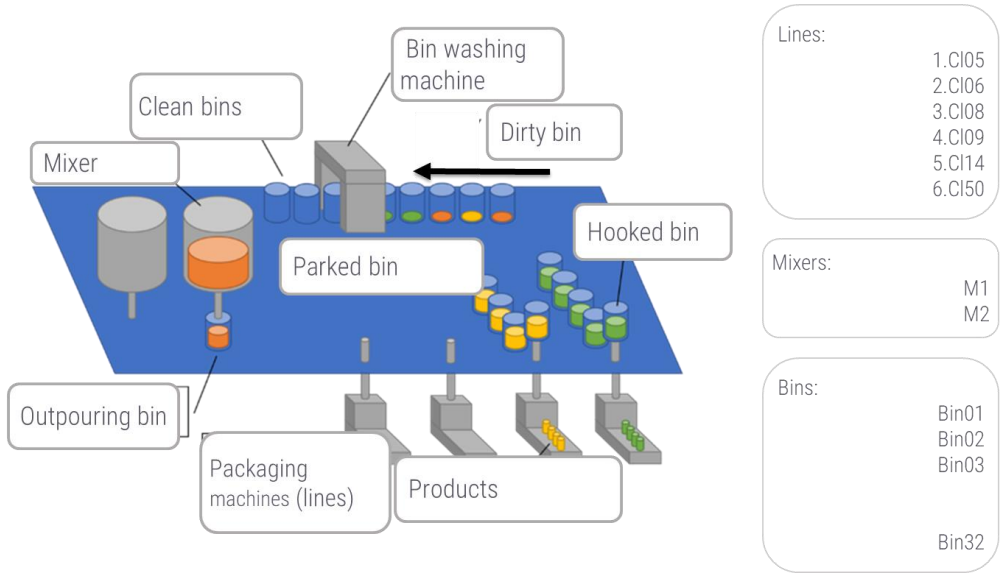
Automotive Components
-15% Wheel Mass

AI Based Optimization

MANUFACTURING

PRODUCTION CAPACITY

Optimal Planning & Scheduling



Call Centers:

+8% Plant Productivity

IoT – Internet of Things

Tech Cluster | Description

The Internet of Things (IoT) is a **network of connected devices**, endowed with unique identifiers and able to transfer data.

It is the combination of two dimensions: **the network of "things"** and **the computing system**. "Things" can be any **electronic device with a software enabling data exchange** (e.g. wearable devices, manufacturing sensors, home appliances, cameras,...).

IoT brings together people, process, data and things to make networked connections more relevant and valuable than ever before - turning information into actions that create new capabilities, richer experiences and unprecedented economic opportunity for businesses.

IoT – Internet of Things

Tech Domains | List

- Smart Sensing Solutions
- OT/IT Interface
- Vision Systems
- Sensor Networks and Grids
- Communication Protocols
- Energy Harvesting Solutions
- Data Exchange
- Edge Computing
- M2M Interface
- Telemetry Protocols
- IoT Cloud Platforms
- Device Management
- Multi Cloud Data Hub
- Cloud-to-Cloud Integration
- Condition Monitoring
- Beacon
- Rule Engines
- Wireless and Wired Communication Standards
- Industrial APP
- Smart Device

IoT – Internet of Things

Tech Domains | Description

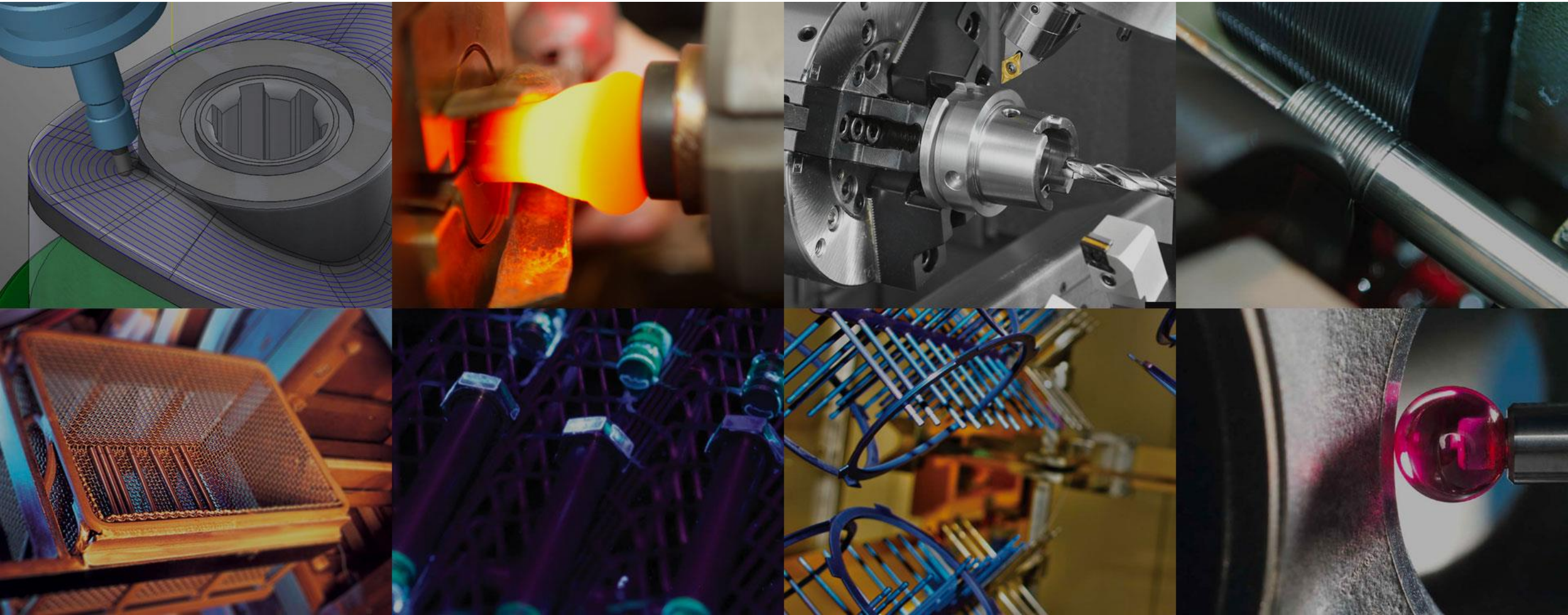
Smart Sensing Solutions

Smart sensors a sensor that takes some predefined action when it senses the appropriate input (light, heat, sound, motion, touch, etc.). The main feature is the ability to communicate, which can be done by displaying the data directly to the user and transfer it over a wired interface wirelessly.

To qualify as an intelligent sensor, the sensor and processor must be part of the same physical unit.

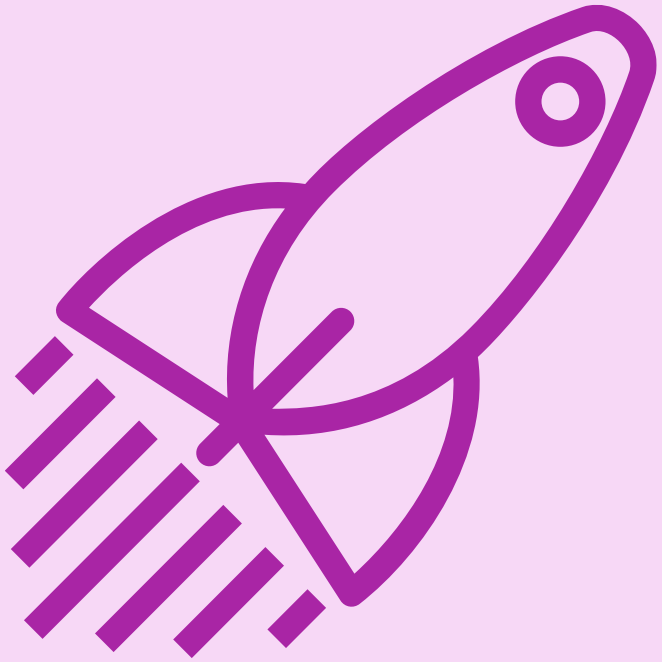
POGGIPOLINI

Since 1950



SENS-IN® BOLT

An intelligent bolt integrating sensitive elements combined with self learning algorithms.



Entrepreneurship: a new Leadership Style

Entrepreneurship is the **new mindset** to succeed in a **turbulent context.**

How to be entrepreneurial in a **structured corporation**?

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Intrapreneurship
noun | /ˌɪntrəprəˈnɜːʃɪp/

Being *entrepreneurial* in the context of a corporation, i.e. assuming the ownership of tranforming innovative ideas into profitable businesses.

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GELLIFY

GELLIFY Factory: The Purple Way

Empower
innovation

We are “the” **Purple innovation factory** that blends future **visions, software and human genius**, enabling organizations to flourish as modern digital businesses.

Technologies

Our mission is to empower **game-changing startups** and scale-up to reach their full potential. We bridge the gap between their offerings and the needs of the market, connecting them with **key corporate players** and helping them refine their product.

Investor

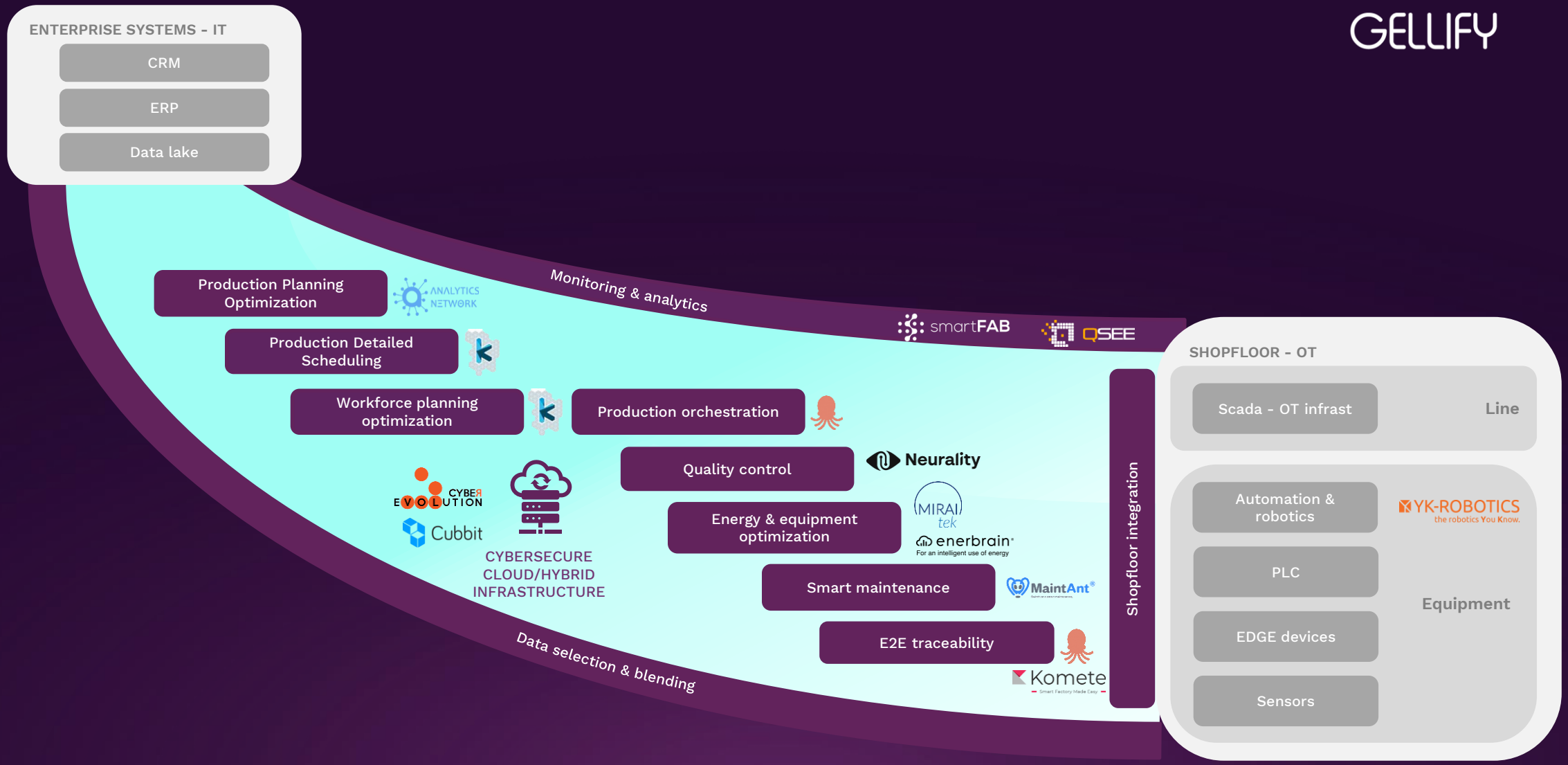
We're passionate creators and innovators, forging **co-investment initiatives** that unite partners in diverse industries. From building startups to launching accelerators, our adaptable co-investment models **empower progress** and **push boundaries**.

Corporate

We offer comprehensive **innovation advisory services** to both corporations and enterprises seeking to digitize and innovate their businesses. By harnessing the power of our **ecosystem collaboration**, we help businesses stay ahead of the curve and achieve **sustainable growth**.

PHYGITAL OPERATIONS Roadmap

Architecture & Asset



FORWARD FACTORY
L'ACCELERATORE DIGITAL MANUFACTURING
DELLA RETE NAZIONALE CDP

Phygital HUB

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