ARTIFICIAL INTELLIGENCE & INNOVATION

1. **STRIVE FOR OPERATIONS EXCELLENCE THROUGH AI**

2. **INNOVATION**

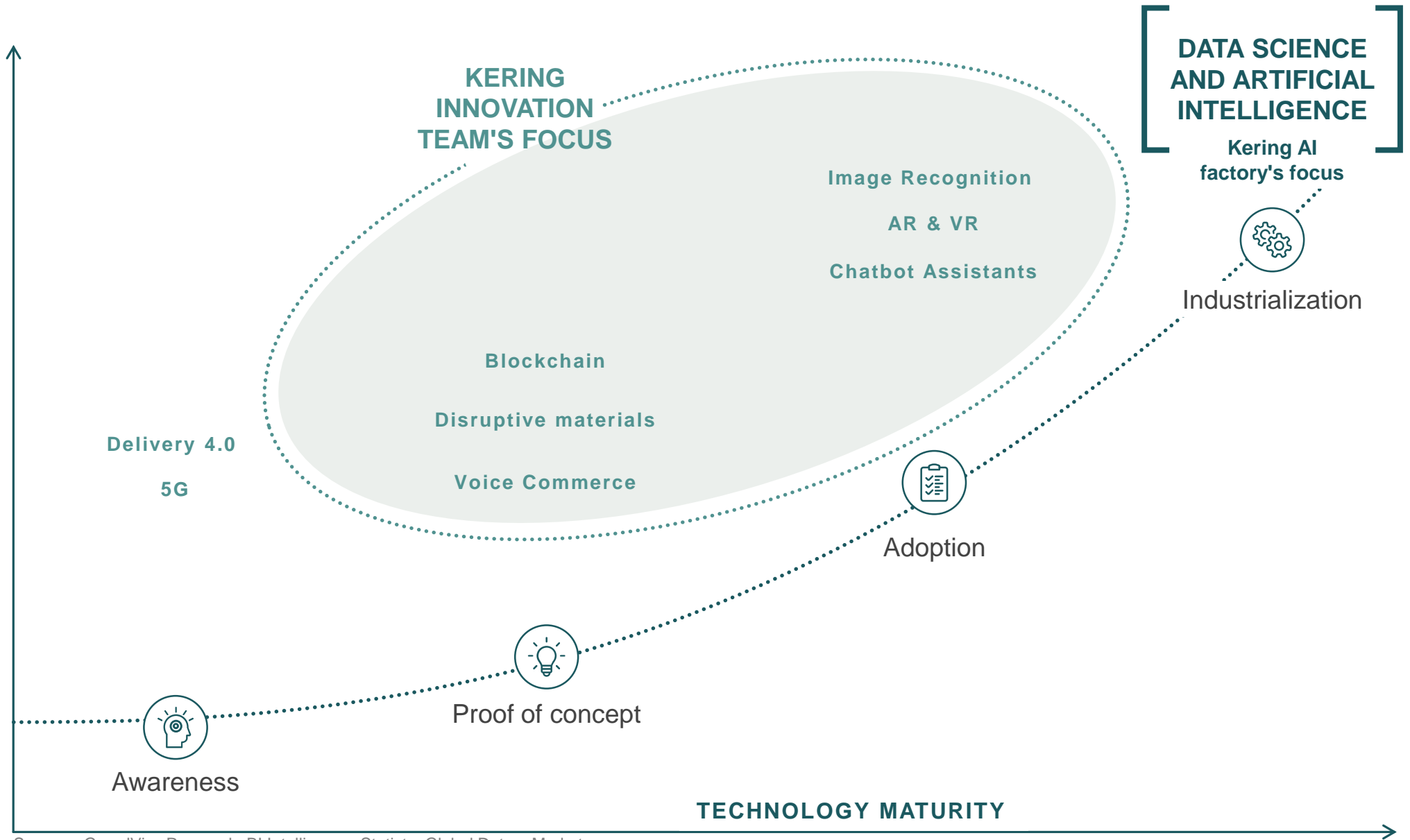1. **STRIVE FOR OPERATIONS EXCELLENCE THROUGH AI**
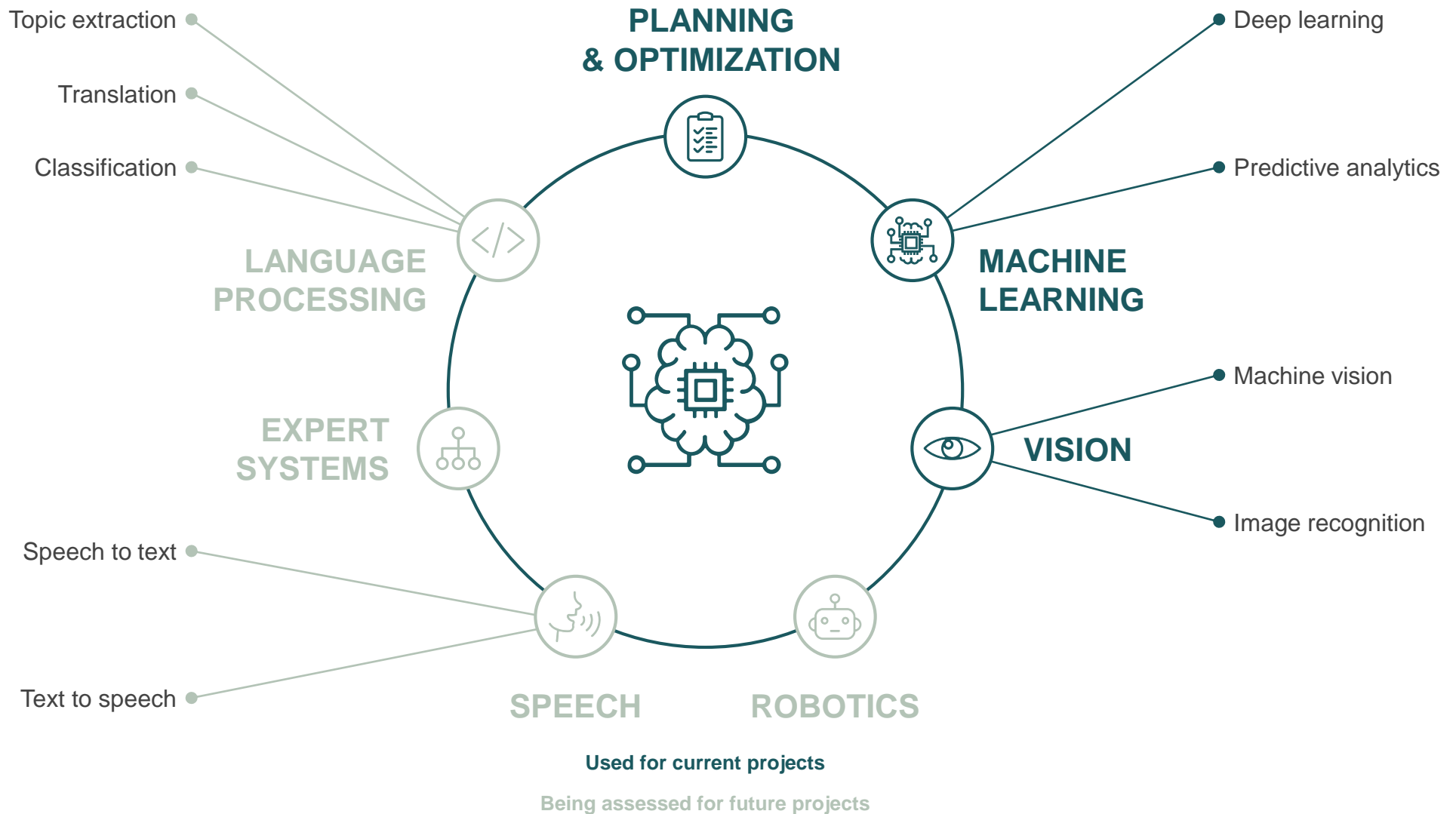
2. INNOVATION

AI AND INNOVATION

SIMPLIFIED – ILLUSTRATIVE

KERING INNOVATION TEAM'S FOCUS

DATA SCIENCE AND ARTIFICIAL INTELLIGENCE

Kering AI factory's focus

Image Recognition

AR & VR

Chatbot Assistants

Blockchain

Disruptive materials

Voice Commerce

Delivery 4.0

5G

Industrialization
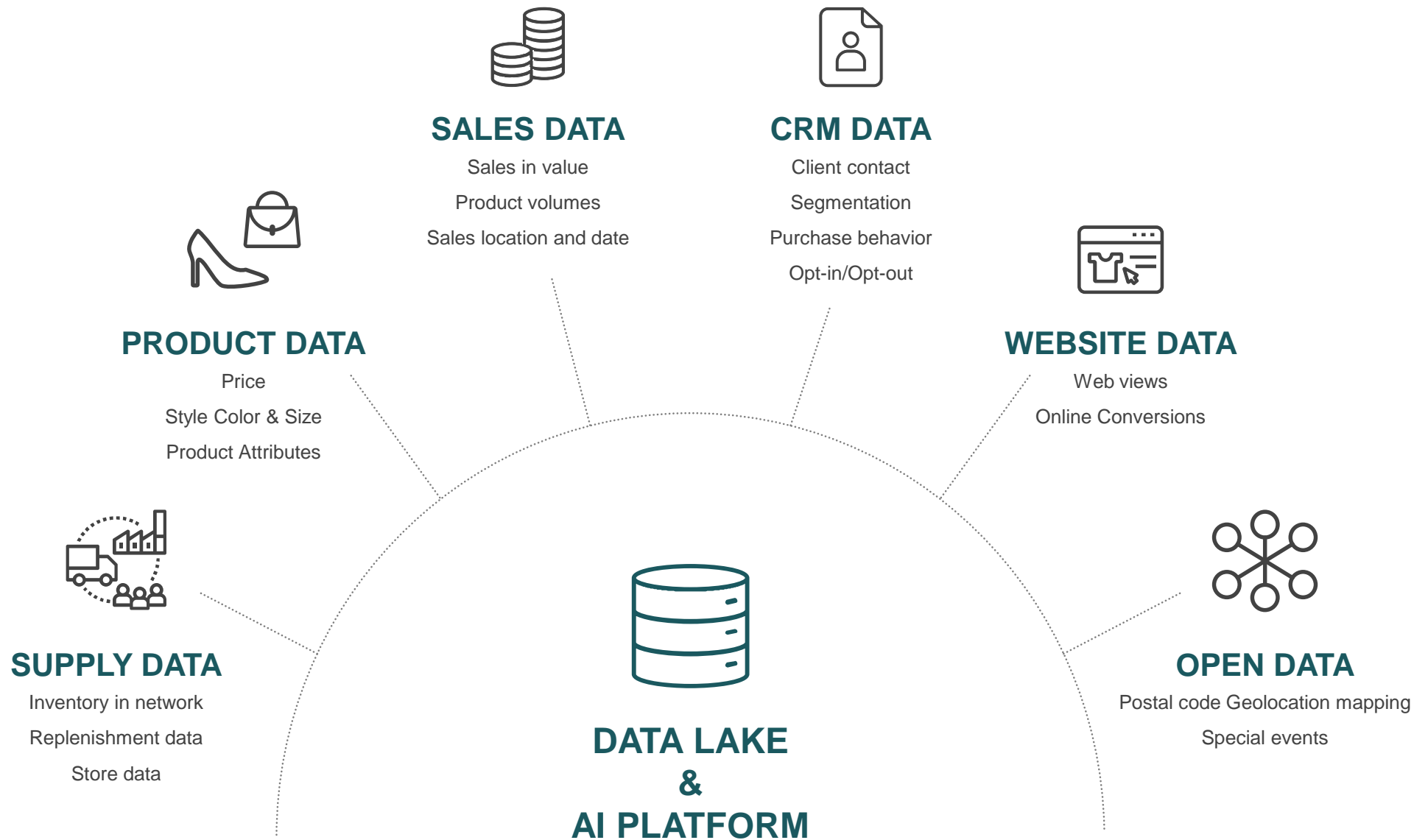
Adoption

Proof of concept

Awareness

TECHNOLOGY MATURITY

Sources: GrandViewResearch; BI Intelligence; Statista; Global Data; eMarketer

AI IS BRINGING A WIDE SCOPE OF GAME-CHANGING APPLICATIONS

Topic extraction

Translation

Classification

PLANNING & OPTIMIZATION

Deep learning

Predictive analytics

LANGUAGE PROCESSING

MACHINE LEARNING

EXPERT SYSTEMS

Machine vision

VISION

Image recognition

Speech to text

Text to speech

SPEECH   **ROBOTICS**

Used for current projects

Being assessed for future projects

THE AI FACTORY RELIES ON A LARGE RANGE OF DATA SOURCES

SALES DATA
Sales in value

Product volumes

Sales location and date

CRM DATA
Client contact

Segmentation

Purchase behavior

Opt-in/Opt-out

PRODUCT DATA
Price

Style Color & Size

Product Attributes

WEBSITE DATA
Web views

Online Conversions

SUPPLY DATA
Inventory in network

Replenishment data

Store data

DATA LAKE
&
AI PLATFORM

OPEN DATA
Postal code Geolocation mapping

Special events

AI WILL BRING A COMPETITIVE ADVANTAGE TO BRANDS: HENCE, WE ARE LEVERAGING THE BEST CAPABILITIES AND TALENTS TO ACCELERATE

2018 — 2019 — 2020

Phase 1
Prototyping & validating opportunities

Phase 2
Building capabilities

Phase 3
Scaling up & industrializing

Implementing opportunities

BUILD A UNIQUE TEAM OF TALENTS

- One team / One roof / One floor blending data scientists, data engineers, data developers & data managers

- Leverage agile method to foster innovation and adopt new technologies

IMPLEMENT CUTTING EDGE TECHNICAL CAPABILITIES

- Upgrading Kering data lake to store all data sources and ensure data availability; Manage huge amount of unstructured raw data

- Leverage cloud platform (scalability, AI) and ability to rollout models in production

FOCUS ON MVP AND INDUSTRIALIZATION RATHER THAN POC

- Strategic bias in favor of Minimum Viable Products (= the most minimal form of a complete solution) to test in real conditions as soon as possible

- Aiming for rapid industrialization at full scale for projects with proven added value
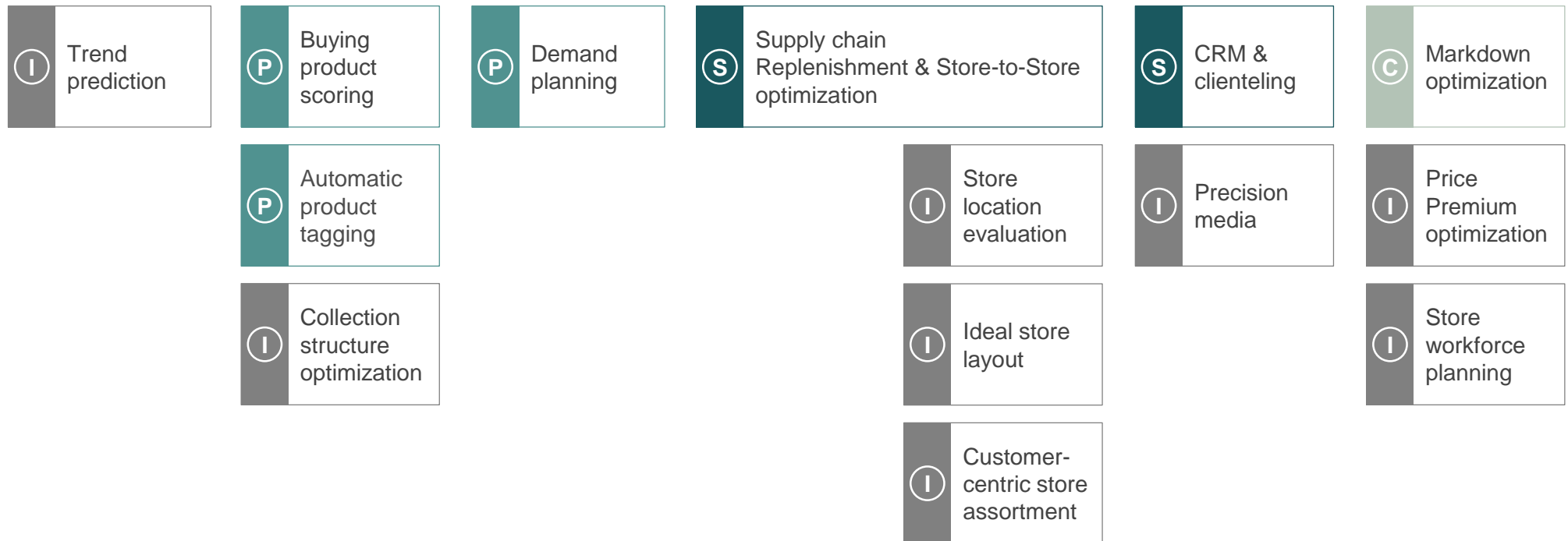
ENSURE CLOSE INCLUSION OF BUSINESS REQUIREMENTS

- Onboarding the brands from day 1

- Starting all projects with a sponsor brand

- *"The hardest part of AI is not the code, it is the change management around"*

WE PRIORITIZED AI PROJECTS
AMONG A LARGE SPECTRUM ON THE VALUE CHAIN

DESIGN — **BUYING & MERCH.** — **PRODUCTION** — **LOGISTICS** — **STORE LAYOUT** — **MARKETING** — **SALES** →

DESIGN	BUYING & MERCH.	PRODUCTION	LOGISTICS	STORE LAYOUT	MARKETING	SALES
(I) Trend prediction	(P) Buying product scoring	(P) Demand planning	(S) Supply chain Replenishment & Store-to-Store optimization		(S) CRM & clienteling	(C) Markdown optimization
	(P) Automatic product tagging			(I) Store location evaluation	(I) Precision media	(I) Price Premium optimization
	(I) Collection structure optimization			(I) Ideal store layout		(I) Store workforce planning
				(I) Customer-centric store assortment		

(I) **Performance management: Sales forecasting (global, country, store level)**

(I) Ideation → (P) Prototyping & validation → (C) Building capabilities → (S) Scaling up & industrializing

FOCUS ON SUPPLY CHAIN PYTHAGORAS PROJECT: ASSIST PLANNERS IN OPTIMIZING STORE REPLENISHMENT STRATEGIES
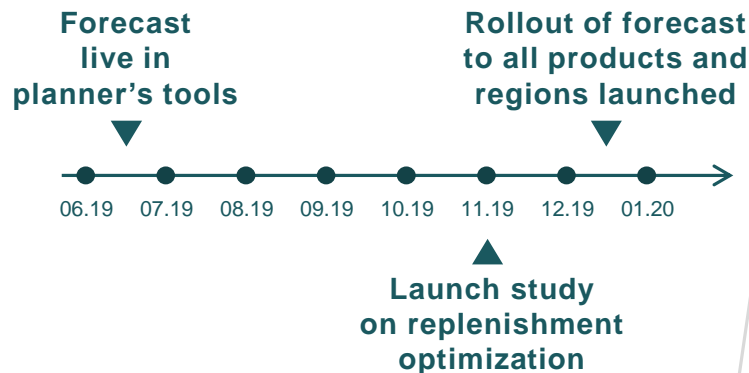
GUCCI

LIVE IN JUNE 2019

What?
- Assist planners in **optimizing product quantities to ship** to stores in order to reduce inventory shortages and overstocks
- Start with two categories in **Europe**

How?
- Develop a new AI-driven **short-term sales forecast model** and (as a second step) a **replenishment-optimization model** in close relationship with Gucci replenishment teams
- **Integrate AI outputs in existing planning tools**

Key milestones

Forecast live in planner's tools

Rollout of forecast to all products and regions launched

06.19 — 07.19 — 08.19 — 09.19 — 10.19 — 11.19 — 12.19 — 01.20

Launch study on replenishment optimization

——— EXPECTED BENEFITS ———

INCREASED FORECAST ACCURACY
- ~20% more accurate on one of the categories
- Forecast "Newness" products with no historical data
- Maximize sales at full price
- Maximize gross margin

LOWER RISK OF INVENTORY SHORTAGES OR OVERSTOCK
Thanks to an improved reaction to market variability, in particular for items with a few weeks of historical data
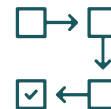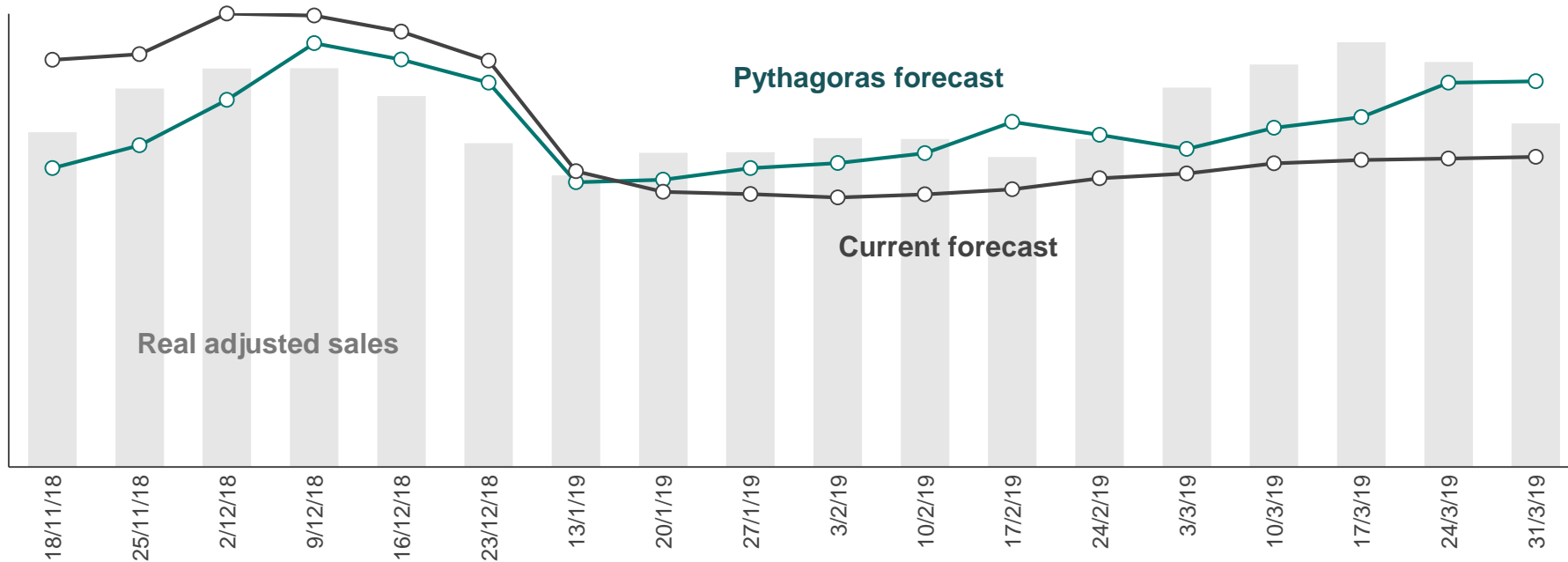
SMOOTHER PROCESS
Thanks to a more reliable forecast and simplified validation tool

PYTHAGORAS RESULTS ARE VERY ENCOURAGING

FORECASTS VS. REAL SALES COMPARISON
PRODUCT CATEGORY A, EUROPE

Pythagoras forecast

Current forecast

Real adjusted sales

18/11/18 · 25/11/18 · 2/12/18 · 9/12/18 · 16/12/18 · 23/12/18 · 13/1/19 · 20/1/19 · 27/1/19 · 3/2/19 · 10/2/19 · 17/2/19 · 24/2/19 · 3/3/19 · 10/3/19 · 17/3/19 · 24/3/19 · 31/3/19

IMPROVEMENT IN SALES FORECAST ACCURACY
OVERALL PERIOD

+20%

FOCUS ON PRICING PROJECT: FIND THE OPTIMAL MARKDOWN LEVEL

OBJECTIVE: LIVE IN H2 2019

What?
- Find out the **optimal markdown level for each product**
- Start with **women's and men's shoes in Europe** for new **2019 Fall season**

How?
- Develop new AI-driven **price-sensitive sales forecast model**
- Develop a **pricing optimization model**

First results & next steps
- **Promising results for the sales forecast**: high accuracy, although some outliers need to be understood
- **Price sensitivity analysis**: forecasts are dependent on prices and this sensitivity is variable across products
- We are running **optimization methods** to find the best combination of discounts

EXPECTED BENEFITS

HIGHER SALES

HIGHER GROSS MARGIN

OPTIMIZE WORKING CAPITAL

PROTECT BRAND EQUITY

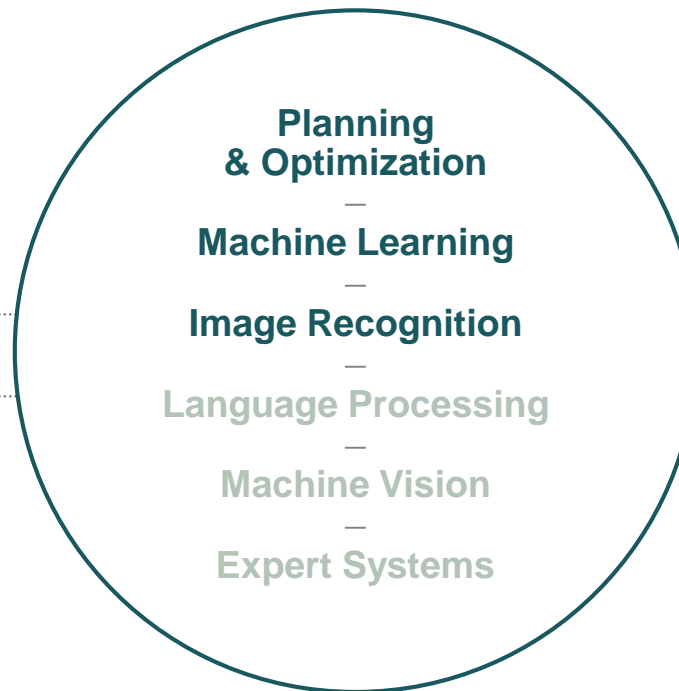# BEYOND SUPPLY AND SALES, WE BELIEVE THAT AI WILL HAVE A WIDE IMPACT ON A LARGE RANGE OF KERING ACTIVITIES

AI CAPABILITIES

Planning & Optimization
—
Machine Learning
—
Image Recognition
—
Language Processing
—
Machine Vision
—
Expert Systems

Used for current projects

Being assessed for future projects

LEGAL

- Counterfeit detection
- Trademark tagging on product images

CUSTOMER SERVICE

- Inbound message ranked by priority
- Personalized e-mail proposition

MEDIA

- Media spend optimization (precision marketing)

TALENTS

- Resume screening
- Employee churn prediction
- Career path counselling

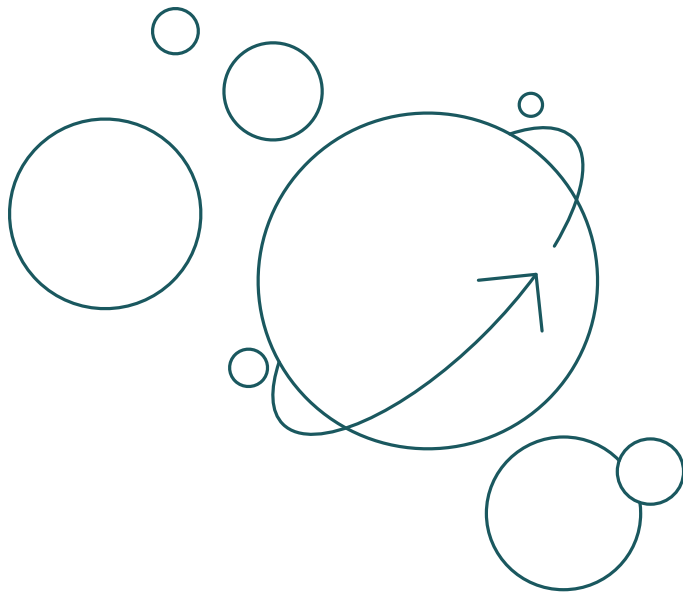# ARTIFICIAL INTELLIGENCE & INNOVATION

1. **STRIVE FOR OPERATIONS EXCELLENCE THROUGH AI**

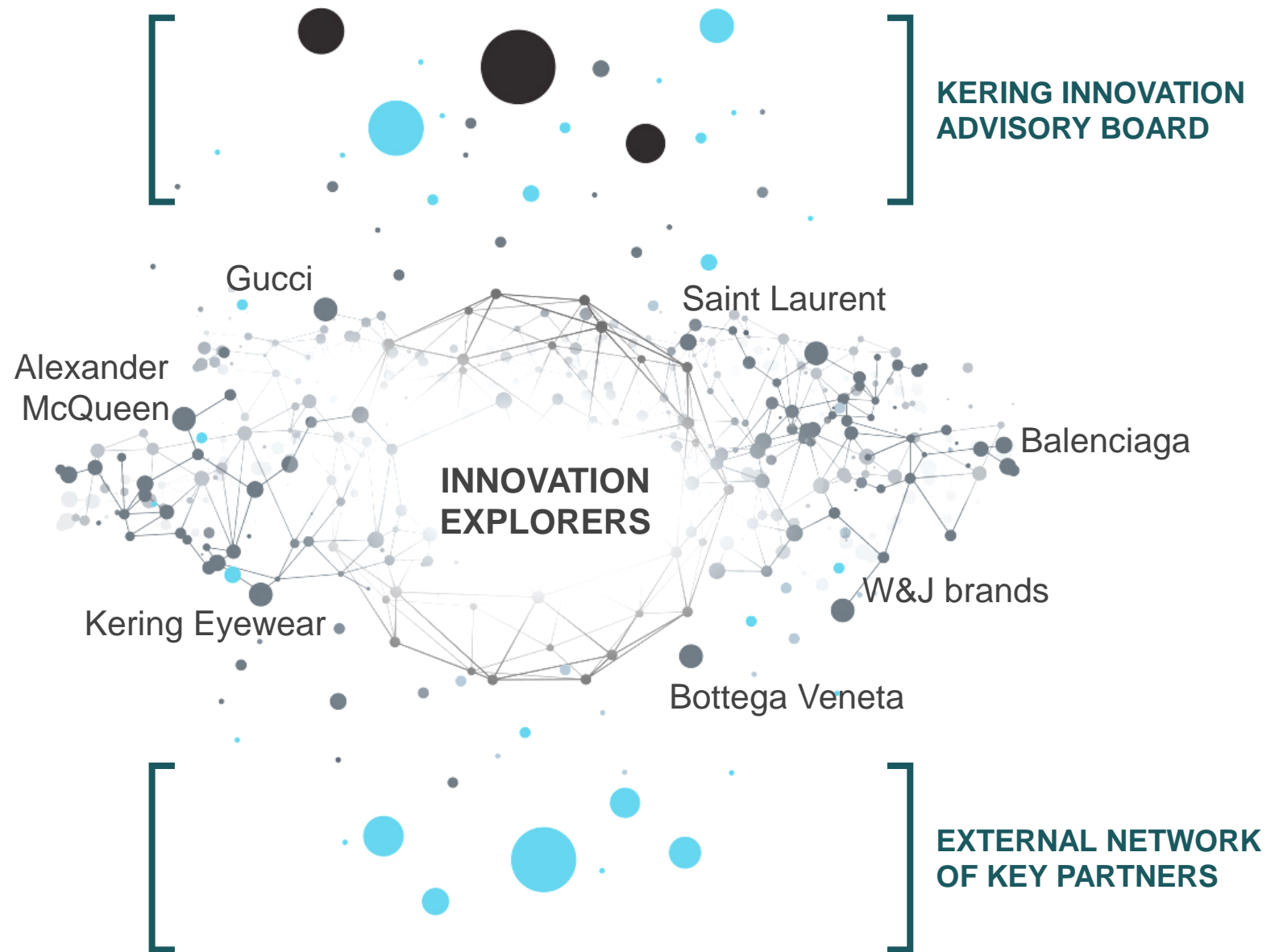2. **INNOVATION**

INNOVATION AT KERING

OUR MISSION

- Have a 360° view of key innovation trends

- Prioritize key disruptions

- Drive value by integrating disruptions into our business (through proof-of-concept and investment)

**KERING INNOVATION
ADVISORY BOARD**

Gucci

Saint Laurent

Alexander
McQueen

Balenciaga

**INNOVATION
EXPLORERS**

W&J brands

Kering Eyewear

Bottega Veneta

**EXTERNAL NETWORK
OF KEY PARTNERS**

INNOVATION ROADMAP

1 **DISRUPTIONS IMPACTING OUR BUSINESS MODEL**

2 **TECHNOLOGIES IMPROVING VALUE TO CUSTOMERS & OUR PERFORMANCE**

3 **ENABLERS**

MATERIAL DISRUPTIONS

NEW BUSINESS MODELS
New ways to consume luxury (e.g. subscription, second hand, rental)

New ways to engage with consumers

IN-STORE / ONLINE / CLIENT SERVICES

In-store: Technologies to augment Client Advisors

Online: Technologies to improve user experience and drive more conversion

Client services: AI-based technologies to augment Client Services Advisors and improve performance and monitoring

INNOVATION ECOSYSTEM SET-UP

Partnership with Venture Capitalists

Start-up scouting

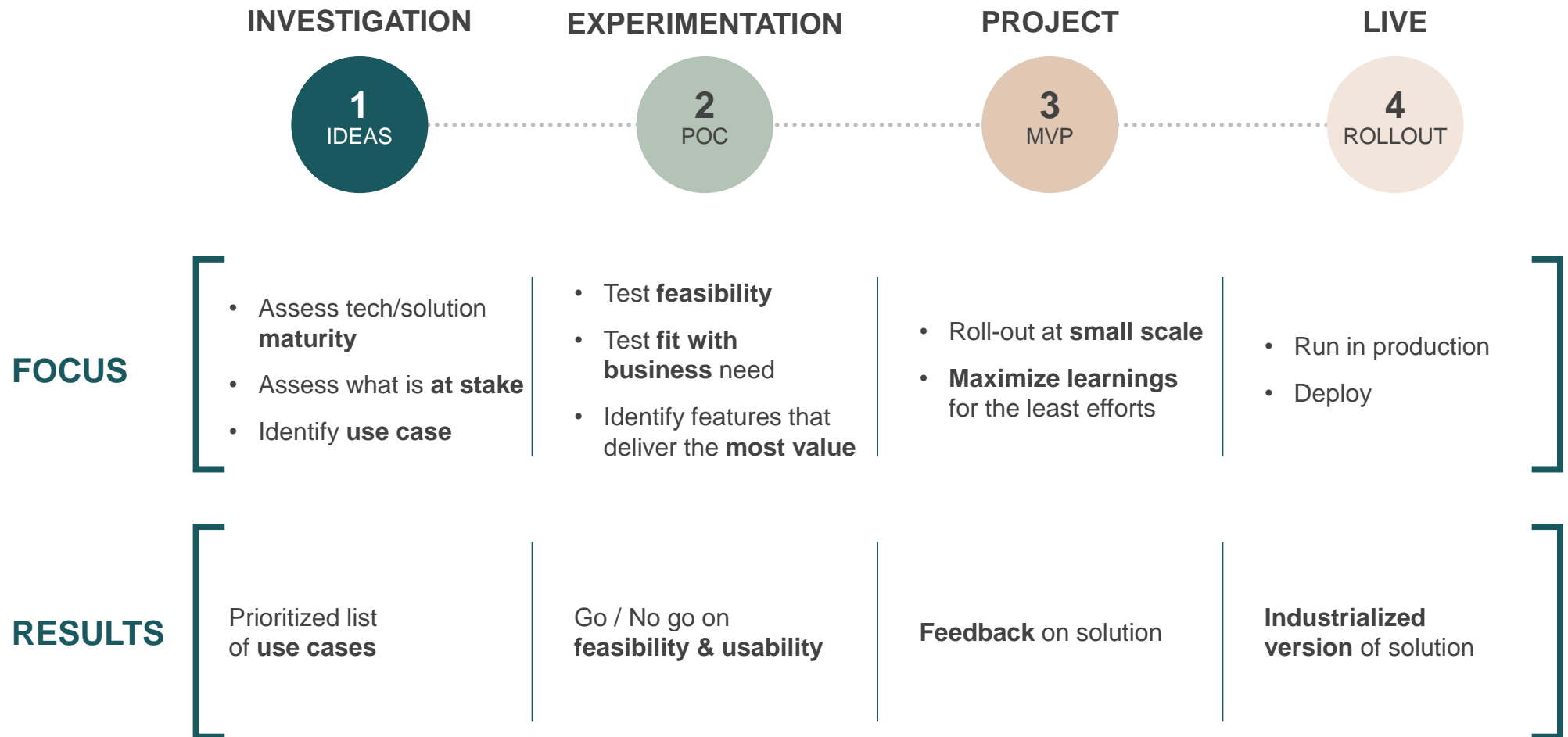### TECH SCOUTING

Blockchain

Voice / Chatbot

Image recognition
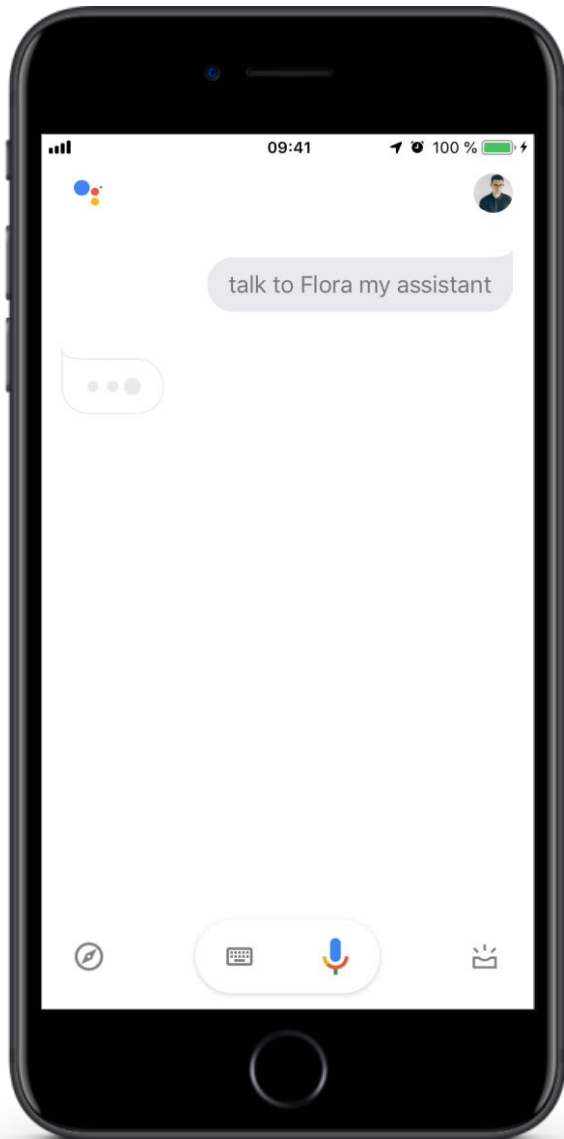
INTRAPRENEURSHIP / CULTURE

Idea crowdsourcing

Co-design

INNOVATION FUNNEL

	INVESTIGATION	EXPERIMENTATION	PROJECT	LIVE
	1 IDEAS	**2** POC	**3** MVP	**4** ROLLOUT

FOCUS

- Assess tech/solution **maturity**
- Assess what is **at stake**
- Identify **use case**

- Test **feasibility**
- Test **fit with business** need
- Identify features that deliver the **most value**

- Roll-out at **small scale**
- **Maximize learnings** for the least efforts

- Run in production
- Deploy

RESULTS

Prioritized list of **use cases**

Go / No go on **feasibility & usability**

Feedback on solution

Industrialized version of solution

Note: POC: Proof of concept / MVP: Minimum Viable Product

RETAIL VOICE ASSISTANT

1 IDEAS — **2** POC — **3** MVP — **4** ROLLOUT

——— TOPIC ———

Voice & Text assistant to help Client Advisors with retail procedures in order to maximize selling time on the sales floor

——— BENEFITS FOR THE USER ———

- **Save time:** Get an easy and immediate access to complex procedures
- **Better serve:** Provide answers on after sales cases without leaving the customer
- **Better train:** Facilitate the training of new hires

——— APPROACH ———

- Small-scale field experimentation to test in quick, agile way
- **Technology:** Natural Language Processing
- **KPIs:** Understanding / Accuracy / User experience
- **Next step:** Deploy in additional stores and add new languages

BLOCKCHAIN USES CASE BEING EXPLORED

1 IDEAS   ·····   **2** POC   ·····   **3** MVP   ·····   **4** ROLLOUT

Blockchain: early stage technology but high disruption potential

Various projects in progress to test where Blockchain brings the most value

Agile approach to enable:
- Quick test-and-learn
- Iterative development
- Client/Partner feedback at small scale early on in the process

— AUTHENTICATION AND OWNERSHIP —

SUPPLY CHAIN TRACEABILITY & EFFICIENCY

HOW WILL WE MEASURE OUR SUCCESS?

Through business impact

World-class ecosystem accelerating innovation vision and projects at Kering Houses

POC or MVP run with proven positive impact on business practices

Deep expertise serving Kering Houses for a particular project