Master in Innovation and Research for Sustainability

Evaluation and Management of R&I Projects

Module IV: R&D+I Portfolio Management
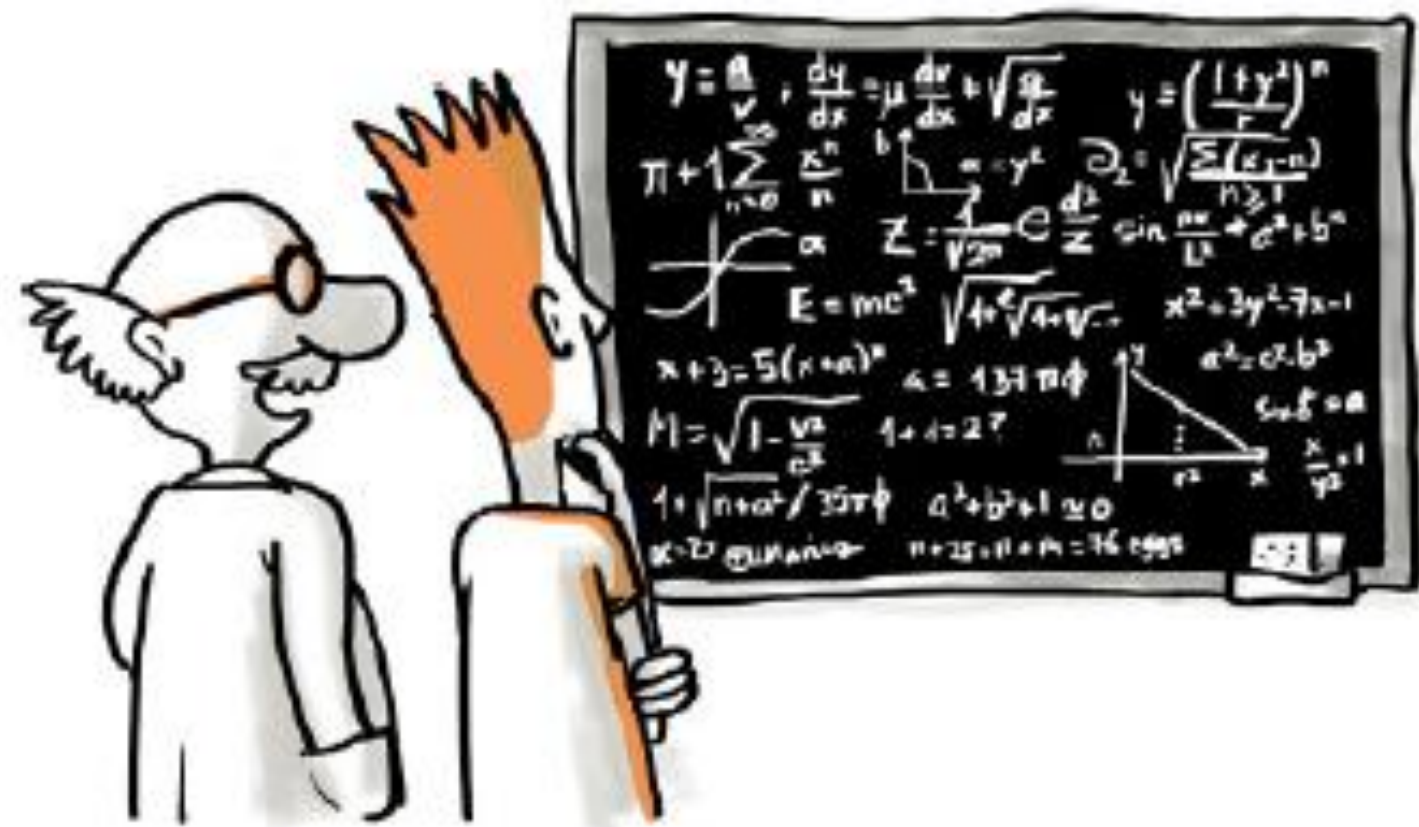
Lecture 10: Optimizing R&D+I Contributions to Strategic Objectives & Performance Metrics for R&D and Innovation

Ana Casaca, 2025

Next Classes 👋

22 of April – Lecture 11

👉 Project assignment presentation & analysis

- Group assignment – 5 People

- 25% of overall assessment

- Designed to enable the application of discussed topics

- Based on real scenarios

- Focused on skill development to make better informed decisions

- Beyond right or wrong answers – evaluate the approach and analytics

- Present all your assumptions, calculations and references

- Gen AI is allowed and moderately recommended

- Final report – max 20 pages

- Deadline – May 9th 2025 COB

Welcome 👋

👉 Module I: Introduction to R&D+I Management

Lecture 1: Crafting an R&D+I Strategy

- Overview of R&D + Innovation: Its importance and impact
- Exploring Innovation Types: Understanding the diversity in innovation

Lecture 2: Applying R&D+I Management

- Developing R&D+I Capabilities: Techniques to enhance innovation
- Implementing R&D+I: Strategies for effective teamwork and innovation
- Practical Components: Hands-on exercise to define a Thesis, a Roadmap of Innovation and OKRs

👉 Module II: Project Lifecycle in R&D and Innovation

Lecture 3: R&D+I Project Fundamentals: From Conception to Market

- Project Initiation: Scope definition and scientific and technical merit
- Project Planning: Strategy development, identifying challenges, and risk assessment
- Practical Components: Hands-on exercise to define project scope using a short case study

Lecture 4: R&D+I Project Fundamentals: From Conception to Market

- Project Execution: Leading RD&I teams, fostering creativity, managing change, and overseeing project progress.
- Project Closure: Capturing lessons learned and assessing project impact on value creation.
- Practical Components: Checklist or templates for project closure activities, such as lessons learned and impact assessments
- Project assignment presentation & discussion

👉 Module III: Assessing R&D and Innovation Projects

Lecture 5: Evaluating R&D+I Projects

- Core Evaluation Elements: Key factors in assessing projects, including technology feasibility and investment criteria.
- Practical Components: Analyze an R&D project to assess its value proposition and evaluation criteria using a checklist or template covering financial, technical, and market aspects

Lecture 6: Evaluating R&D+I Projects

- Business Model Design: Analyze phases, investments, outcomes, and financial/social impact.
- Financial Metrics: Explore profitability, cost of capital, and their role in assessments.
- MVP Definition: Learn to outline an MVP with essential features.
- Practical Activity: Calculate financial indicators like profitability and cost of capital for a sample project

Lecture 7: Evaluating R&D+I Projects

- Risk Management: Techniques for analyzing and mitigating project risks
- Practical Components: Framework to identify and prioritize risks for a hypothetical R&D+I project | Mitigation strategies for high-priority risks and discuss their potential effectiveness

👉 Module IV: Real-World Case studies

Lecture 8, 9: Real-World Applications

- Presentation of Real Case Studies: discussion & analysis of how to evaluate a R&D+I project
- 20min to discuss project assignment

Lecture 10: Case Study

- Project assignment presentation & analysis

👉 Module V: R&D+I Portfolio Management

Lecture 11: Performance Metrics for R&D and Innovation

- Aligning R&D projects with strategic goals beyond financial metrics
- Evolution of Performance Measurement Systems: Historical perspective and current trends
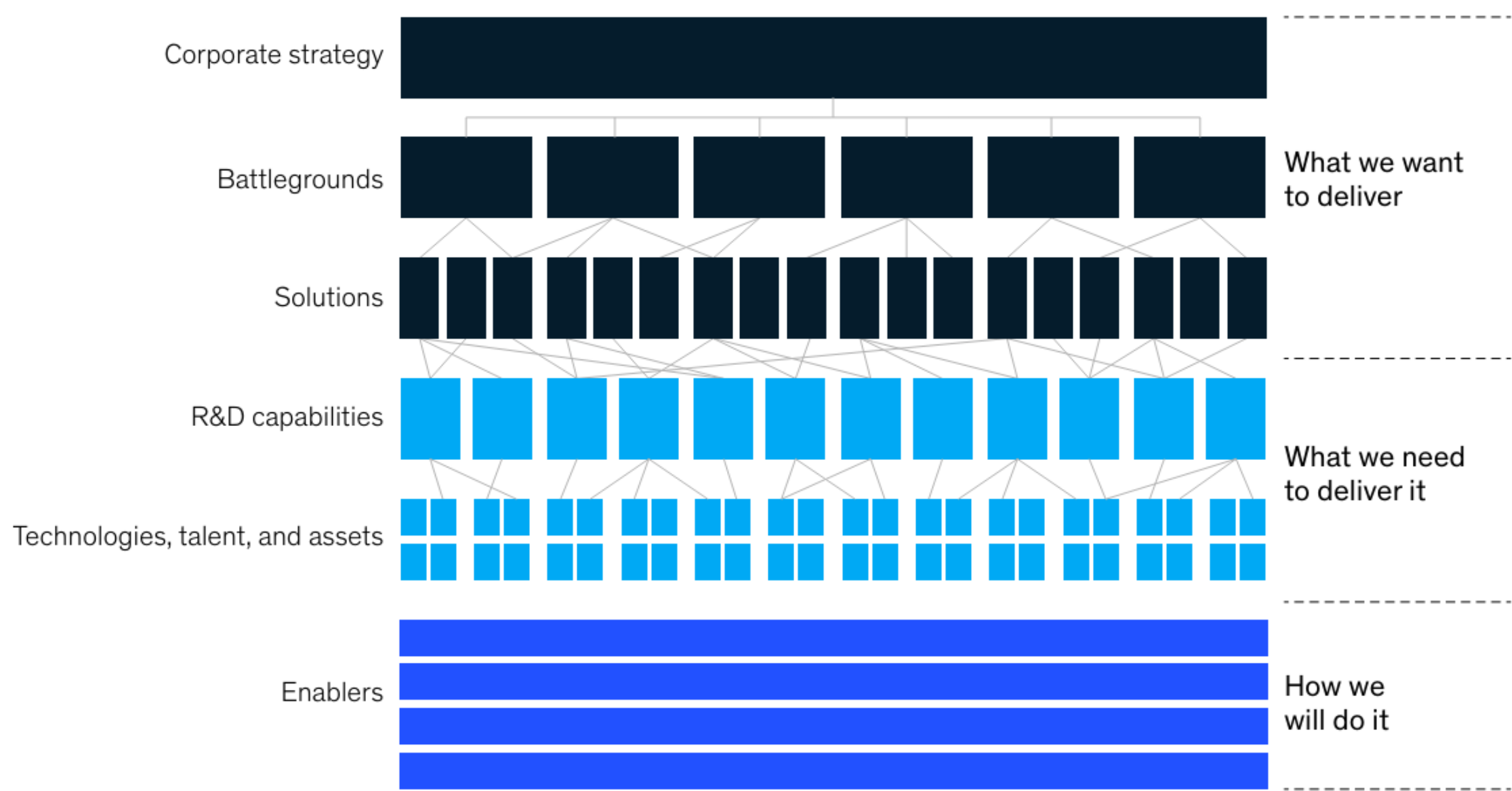- Comparative Analysis of R&D Measurement Approaches

Lecture 12: Real-World Case Studies

- Discussion & analysis of how to manage a R&D+I portfolio

Essential Recap

Companies can set the direction of their R&D strategies by answering a series of questions about how the components fit together.

Strategy elements

Corporate strategy	
Battlegrounds	What we want to deliver
Solutions	
R&D capabilities	What we need to deliver it
Technologies, talent, and assets	
Enablers	How we will do it

👉 **What we want to deliver**

The R&D strategy & the corporate strategy must be in sync while answering questions such as: At the highest level, what are the company's goals? Which of these will require R&D in order to be realized? In short, what is the R&D organization's purpose?

👉 **What we need to deliver**

The R&D strategy needs to determine what capabilities and technologies the R&D organization must have in place to bring the desired solutions to market and answering questions such as:
What capabilities and technologies the R&D organization must have in place to bring the desired solutions to market

👉 **How we will do it**

The choices of **operating model** and **organizational design** will ultimately determine how well the R&D strategy is executed.

But HOW ABOUT… HOW WE MEASURE WHAT WE DELIVER?

What gets measured, gets DONE!

Evolution of Metrics for R&D and Innovation

Back to the Past 90´s to 2020...

Traditional Innovation Models
(pure R&D models)

vs

New Innovation Models with
Broader Scopes
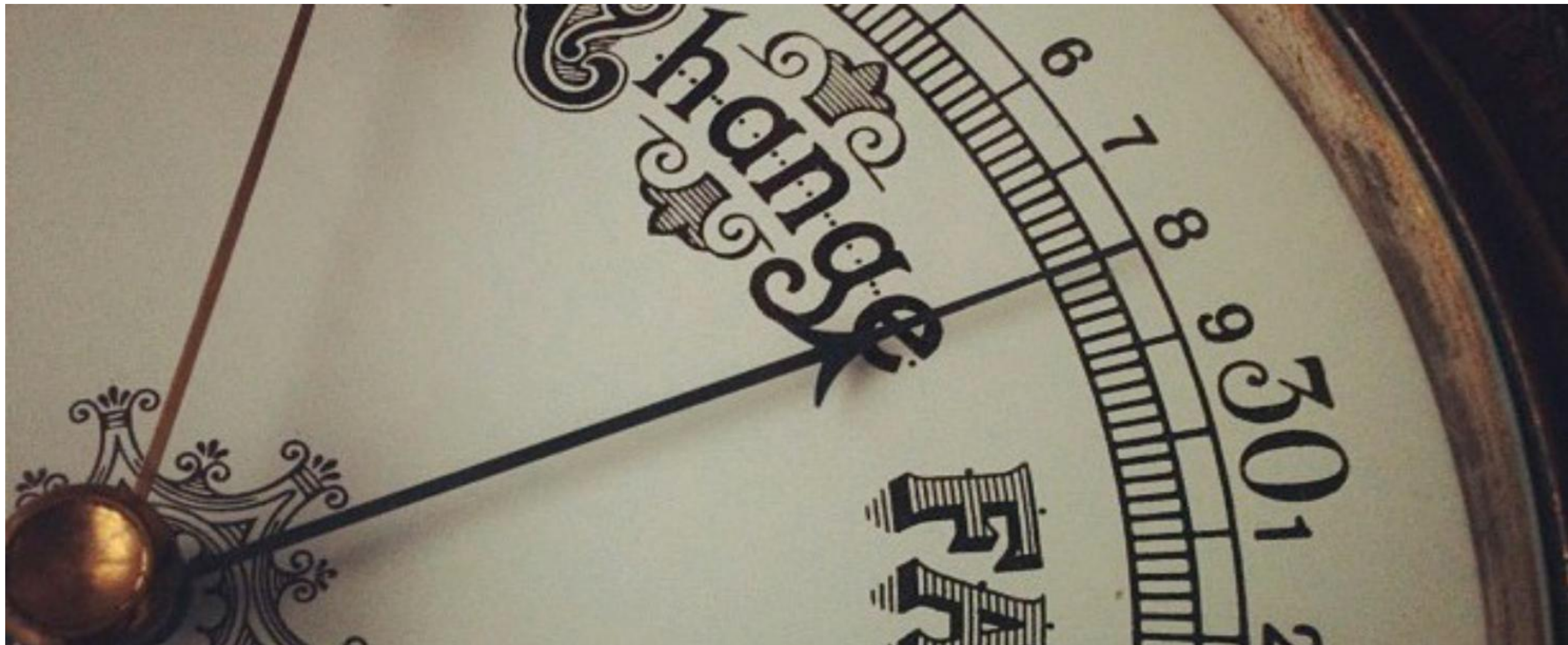
Evolution of Metrics for R&D and Innovation

1st Generation

R&D Expenses
Investiment
R&D size team
...

2nd Generation

Patents
Scientific Publications
New Products
Quality Impact
...

3rd Generation

Innovation Index
Benchmarks.
Innovation Surveys
...

4th Generation

Revenue Growth
Sucess Ratio
Percentage of Sales from new products
...

...

But how do Innovation Metrics Contribute to Innovation Performance?

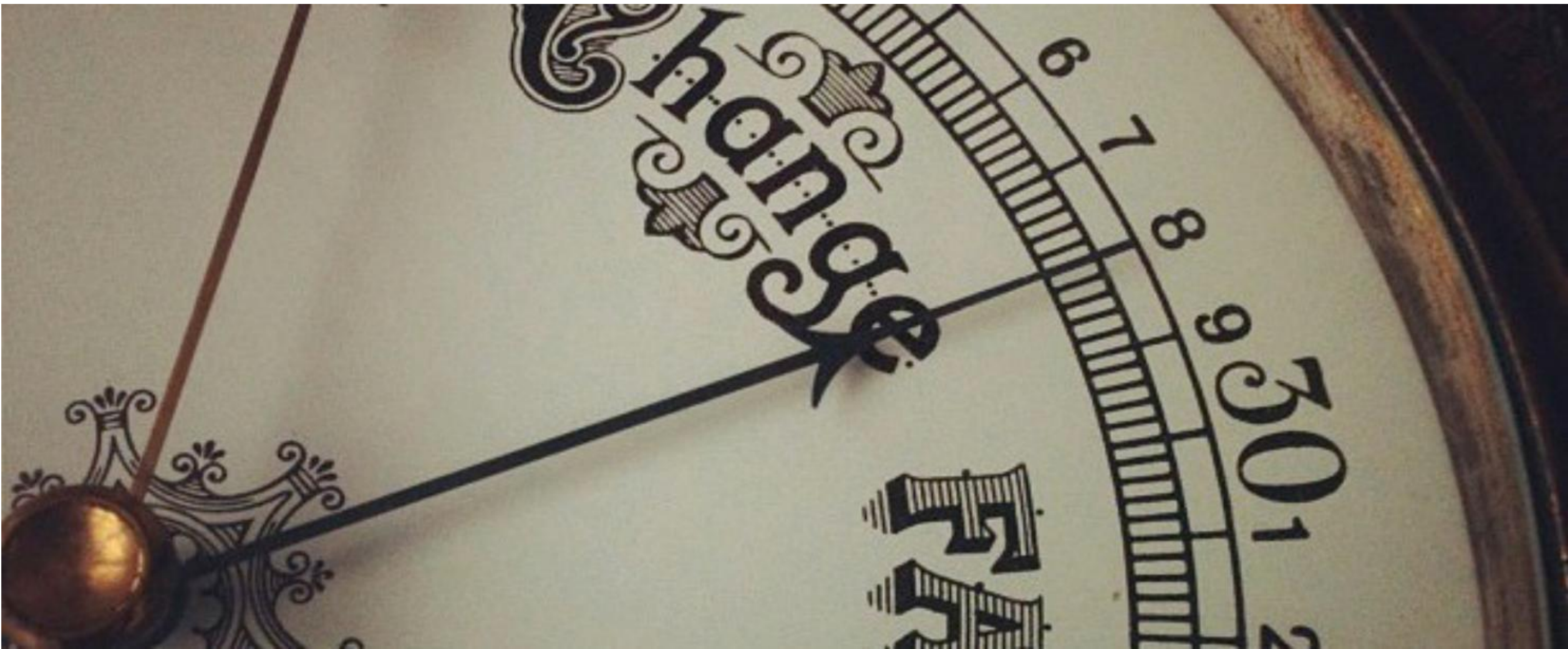Guarantee that the governance & THE METRICS are aligned with what you what to achieve

👉 **Investing in innovation talent:** The leadership team signals a strong commitment to innovation through investments of resources and time to recruit, develop and retain innovation talent

👉 **Encouraging prudent risk-taking:** Innovative firms foster a tolerance for risk throughout the organization by encouraging learning from innovation disappointments

👉 **Adopting an outside-in innovation process:** Growth leaders start with deep insights into customers to anticipate emergent needs and likely responses to innovation

👉 **Aligning metrics and incentives with innovation activity:** An innovation dashboard creates a credible and transparent link to rewards and recognition for innovation accomplishments

Profiling Growth Leaders

1	2	3	4	5	6	7

Developing innovation talent is not a priority — 2.6 — 3.9 — 5.0 — We invest heavily to develop and retain our talent in innovation activities

Our culture is highly risk-averse and does not cope well with failure — 2.2 — 3.6 4.3 — Our culture encourages risk-taking and learning from disappointments

We are poor at listening to customers and anticipating their needs — 3.2 — 4.4 5.1 — Every senior manager is attuned to the voice of the customer

Our incentives are not linked to innovation performance — 2.7 — 3.9 4.4 — Rewards and recognition are strongly linked

To Define Indicators, think Innovation as (industrial) process

👉 **Inputs:** such as R&D spending as a percentage of sales, number of R&D projects, number of ideas or concepts in the pipeline, and the percent of ideas sources from outside the company

👉 **Process measures:** including patenting activity, percent of projects hitting their gates on time, budget verses actual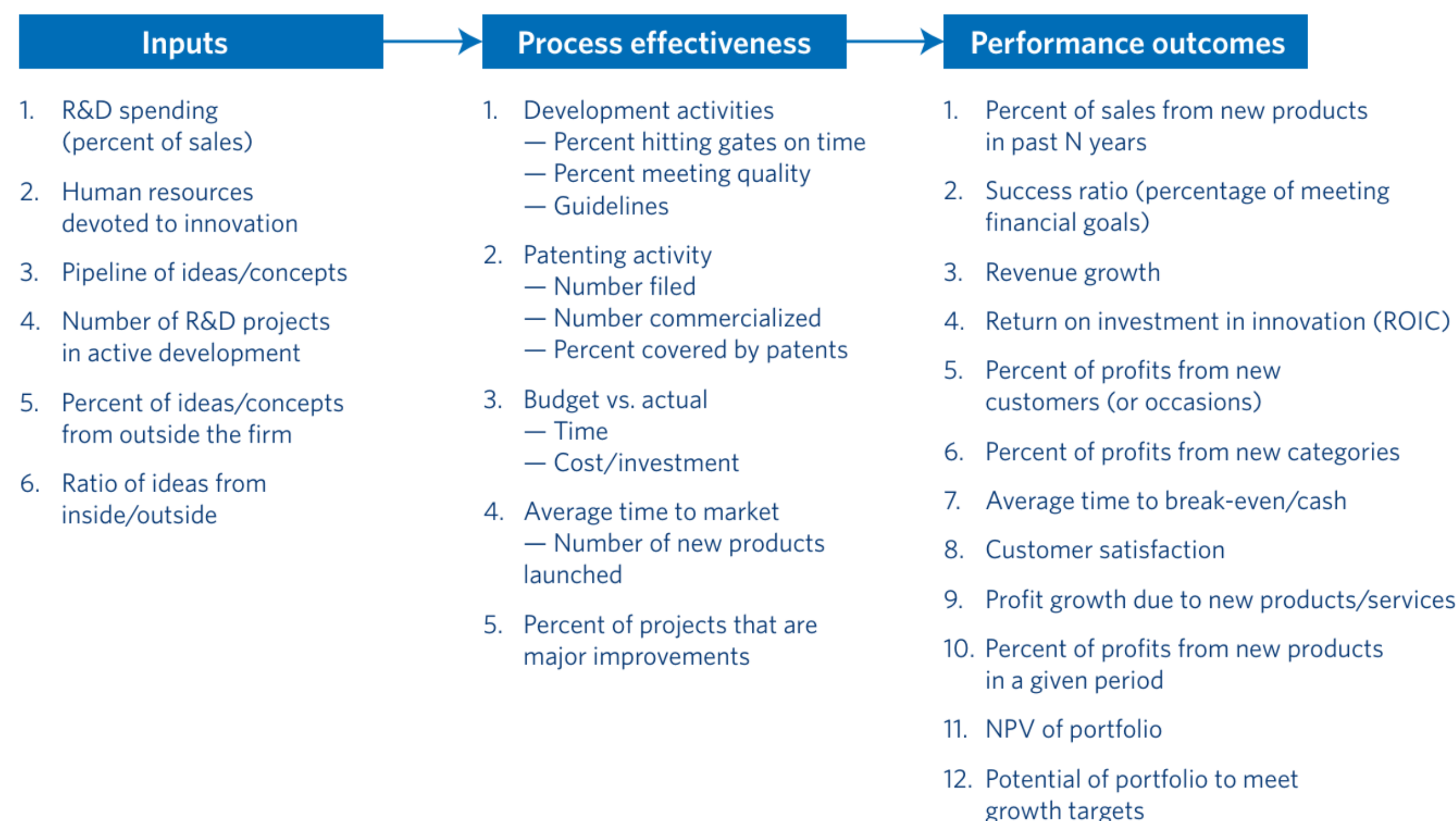 spending, average time to market, and the percent of projects that are major improvements. These measures were aimed at understanding the effectiveness of the innovation processes that yielded the performance outcomes.

👉 **Performance outcomes:** such as percent of sales from new products in past N years (this was usually three years) success rates, revenue growth, due to organic sources, customer satisfaction, net present value of the portfolio, and average time-to-breakeven.

Possible Metrics in an Innovation Dashboard

Inputs	Process effectiveness	Performance outcomes
1. R&D spending (percent of sales)	1. Development activities — Percent hitting gates on time — Percent meeting quality — Guidelines	1. Percent of sales from new products in past N years
2. Human resources devoted to innovation	2. Patenting activity — Number filed — Number commercialized — Percent covered by patents	2. Success ratio (percentage of meeting financial goals)
3. Pipeline of ideas/concepts	3. Budget vs. actual — Time — Cost/investment	3. Revenue growth
4. Number of R&D projects in active development	4. Average time to market — Number of new products launched	4. Return on investment in innovation (ROIC)
5. Percent of ideas/concepts from outside the firm	5. Percent of projects that are major improvements	5. Percent of profits from new customers (or occasions)
6. Ratio of ideas from inside/outside		6. Percent of profits from new categories
		7. Average time to break-even/cash
		8. Customer satisfaction
		9. Profit growth due to new products/services
		10. Percent of profits from new products in a given period
		11. NPV of portfolio
		12. Potential of portfolio to meet growth targets

And in the end cut al least in half...

On average companies use seven metrics (max.)

The best performers are the ones that make the connection between their innovation investments to shareholder value creation

Most Popular Innovation Metrics

Inputs	Process effectiveness	Performance outcomes
• Pipeline of ideas/concept (61%)	• Number of new products launched (46%)	• Revenue growth (60%) • Customer satisfaction (48%) • Return on investment in innovation (48%) • Profit growth (45%) • Percent of sales from new product in past N years (44%)

Keep in mind that we have golden rules to define Metrics for R&D + Innovation

Four rules for *better* metrics
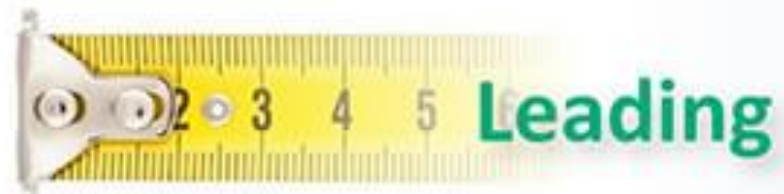
Leading
- "If we do more of this, it will lead to growth."

Actionable
- "Our employees can make this happen."

Benchmarkable
- "We can compare to others and year-to-year."

Impactful
- "Improvement will *significantly* drive growth."

👉 **Leading**

"If we do more of this, we'll get more of the results we want." Let's be clear about those results for an innovation metric: We want **rapid, profitable, sustainable growth from market-facing innovation**. So yes, a good leading metric should result in increasing vitality index levels. But more important, it should drive rapid, profitable, sustainable growth

👉 **Actionable**: Innovation metrics should tell the team what they should do while their multi-functional team is developing a new product. And should guide them between projects, to develop capabilities—skills, methods, and tools—to do it even better with future projects

👉 **Benchmarkable**: Any new innovation metric must allow you to compare your performance year-over-year. And needs to let you compare your performance against other companies

👉 **Impactful**: Any metric must help the team to make a big difference in growth. There are many possible metrics that could distract or dilute your objective

In reality... Let´s see how we can establish metrics for an innovation department

A real case study

- We want to launch a startup engagement program that can bring **visible results** and that will allow the organization to be recognized as a *player* **relevant in the innovation european ecosystem**

- In the context of this need, **PROGRAM X** needs to **define metrics for evaluating its impact**

- The main objective of defining these metrics is **to systematically measure and evaluate the impact of PROGRAM X** both on the Company and for the Startup Ecosystem

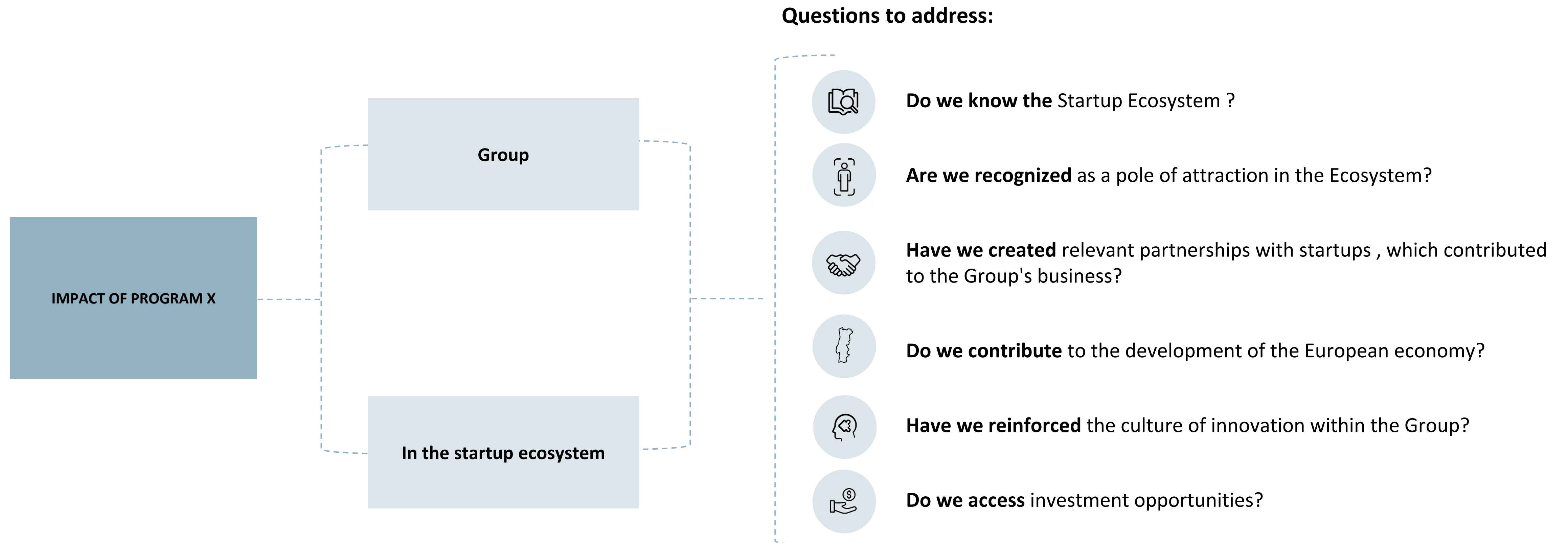- To do this, it will be necessary **to develop, define and collect** a set of metrics

PROGRAM X objetives

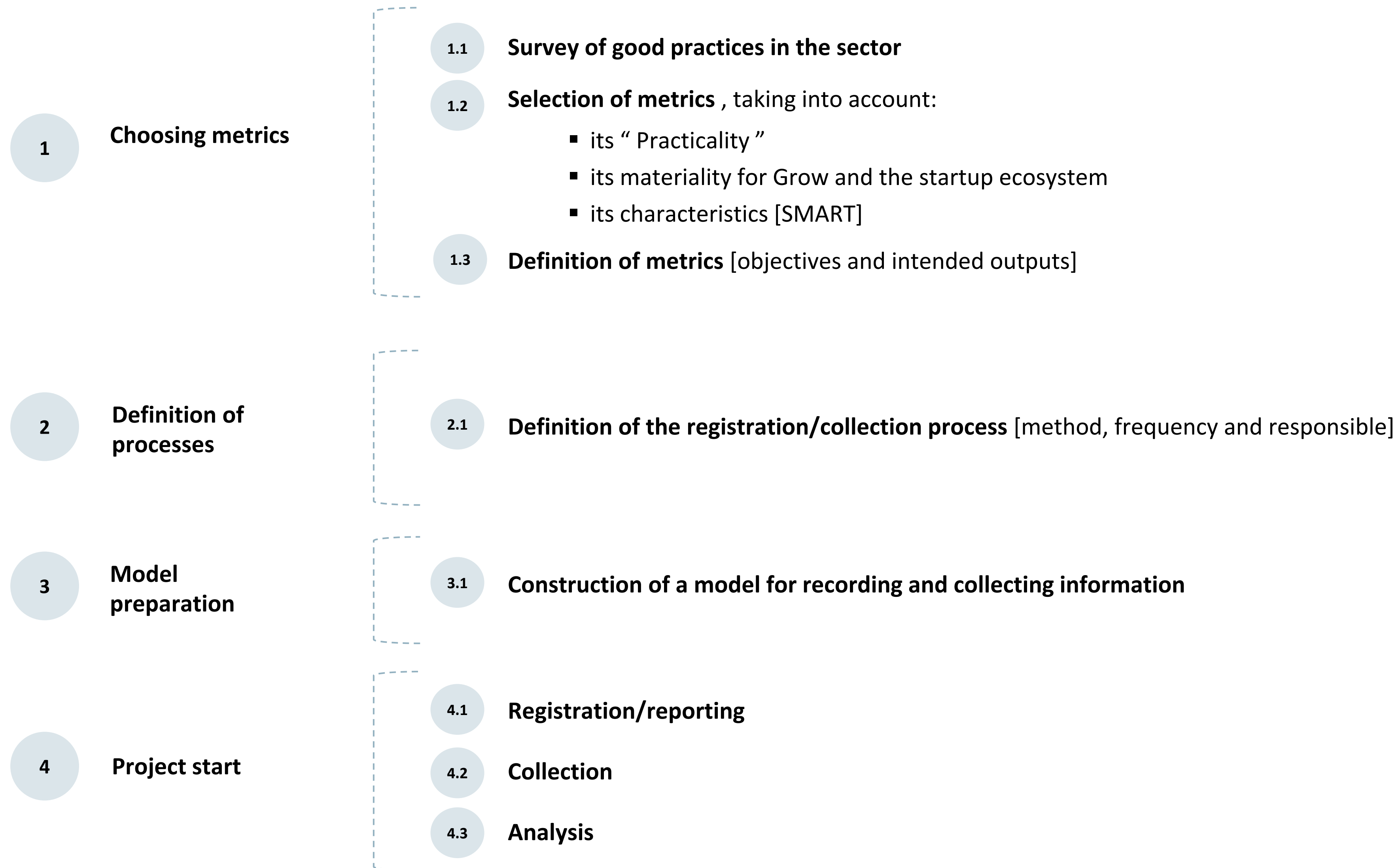**Positioning the company as a key player** & Create **Impact**

A. Guarantee pilots with startups have impact for the company

B. Activate a Mentor Network

C. Start the participation in specific ecosystem initiatives

D. Gain visibility in the ecosystem

E. Launch a strong internal communication policy

PROGRAM X impact assessment metrics

We want to measure the **impact of PROGRAM X** on the **Group** and on the **Startup Ecosystem,** in the way its results respond to the objectives initially outlined

Questions to address:

IMPACT OF PROGRAM X

Group

In the startup ecosystem

Do we know the Startup Ecosystem ?

Are we recognized as a pole of attraction in the Ecosystem?

Have we created relevant partnerships with startups , which contributed to the Group's business?

Do we contribute to the development of the European economy?

Have we reinforced the culture of innovation within the Group?

Do we access investment opportunities?

Project timeline

1 **Choosing metrics**

- **1.1** **Survey of good practices in the sector**
- **1.2** **Selection of metrics** , taking into account:
  - its " Practicality "
  - its materiality for Grow and the startup ecosystem
  - its characteristics [SMART]
- **1.3** **Definition of metrics** [objectives and intended outputs]

2 **Definition of processes**

- **2.1** **Definition of the registration/collection process** [method, frequency and responsible]

3 **Model preparation**

- **3.1** **Construction of a model for recording and collecting information**

4 **Project start**

- **4.1** **Registration/reporting**
- **4.2** **Collection**
- **4.3** **Analysis**

1.3 Definition of metrics [1/2]

		METRICS	Startup	Be recognized and a pole of attraction in the Ecosystem	Create "partnerships" (field tests) relevant with startups	Contribute to the development of the Portuguese economy	Reinforce the culture of innovation within the Group	Access investment opportunities
Reach and Reputation	External	Events with active participation of Group employees	✓	✓			✓	
		PROGRAM X's reputation in the initiatives in which it participates or organizes		✓	✓			
		Recognition of the Group (PROGRAM X) as a relevant player in the innovation ecosystem		✓	✓	✓		✓
	Internal	Areas involved in pilots					✓	
		Employees "affected" by PROGRAM X					✓	
		Organization feedback/perception regarding PROGRAM X					✓	
Activity		Startups analyzed	✓				✓	
		Investment opportunities analyzed	✓	✓		✓		✓
		Startups supported with mentorship	✓	✓	✓	✓	✓	✓
		Investments in the ecosystem		✓		✓		
Results	Direct Financial Impact	Financial impact of pilots/contracts on Group companies			✓			
		Valuation of investments			✓			✓
	Impact on the Ecosystem	Success stories		✓		✓		
		Magnitude of the startups we are supporting (jobs)		✓		✓		
		Magnitude of the startups we are supporting (investment received)		✓		✓		
	Of activity	Pilots (tested solutions)		✓	✓	✓	✓	✓
		Contracts signed with startups		✓	✓	✓	✓	✓
		Startups invested by the Group		✓		✓		✓

1.3 **Definition of metrics [2/2]**

METRICS	DESCRIPTION	GRADES
Events with active participation of Group employees	Number of events in which (within the scope of Grow) employees of the Group have actively participated as speakers, juries or mentors	Includes PROGRAM X´ team and others
PROGRAM X's reputation in the initiatives in which it participates or organizes	Global classification of surveys carried out as part of PROGRAM X's participation or organization in any ecosystem initiative	(detailed ahead) **A**
Recognition of the Group (PROGRAM X) as a relevant player in the innovation ecosystem	Result of a market study on PROGRAM X's reputation	(detailed ahead) **B**
Areas involved in pilots	Number of areas involved in the pilot development process	**Process:** from the first pitch to the end of the pilot
Employees "affected" by PROGRAM X	Number of people who were exposed to innovation topics within the scope of PROGRAM X (actively – speakers; mentors; juries **or** passively – spectators)	**Examples of events where this count must be done:** Board Meeting, Web Summit , Innovation talks Sessions , …
Organization feedback/perception regarding PROGRAM X	Result of feedback to Group employees about their perception of PROGRAM X	(detailed ahead) **W**
Startups analyzed	Number of startups analyzed by (at least) one member of the PROGRAM X *core team*	**Analysis =** there has been at least one conversation with the startup
Investment opportunities analyzed	Number of investment opportunities in startups analyzed and presented to (at least) one top Director of the company in question	
Startups supported with mentorship	Number of startups supported with *mentorship* in (at least) one of the 3 levels: *office hours* , *expertise sharing* or ongoing mentoring	Valid for Mentors Exchange members and others
Investments in the ecosystem	Value attributed to startups for: (1) supporting pilots and (2) contracting/providing services/products	
Financial impact of pilots/contracts on Group companies	Value that reflects the financial impact of pilots on business	Take into account the value of the pilots (if applicable)
	Valuation of investments made within the scope of PROGRAM X	This value will not be expressed in the first years
Valuation of investments	Verification of the existence of (at least) 2 criteria that make a startup a "success case"	(detailed ahead) **D**
Success stories	Total number of employees of companies supported by PROGRAM X with pilots and/or contracts	
Magnitude of the startups we are supporting (jobs)	Total investment raised by companies supported by PROGRAM X with pilots and/or contracts	
Magnitude of the startups we are supporting (investment received)	Number of startups that tested their solutions (pilots) in the Group	
Pilots (tested solutions)	Number of contacts made between startups and the Group	Includes startups with and without a prior pilot
Contracts signed with startups	Number of startups in which investments were made by a company in the Group	Excludes monetary value attributed to supporting pilots

2.1 Definition of the data collection process

An analysis of the results status is expected to be carried out quarterly, with some metrics only being updated every six months.

METRICS	RESPONSIBLE FOR REGISTRATION*	METHOD
Events with active participation of Group employees	Name a person	Daily log (if applicable)
PROGRAM X's reputation in the initiatives in which it participates or organizes	Name a person	Ad Hoc Surveys
Recognition of the Group (PROGRAM X) as a relevant player in the innovation ecosystem	Name a person	**Biannual market study**
Areas involved in pilots	Name a person	Daily log (if applicable)
Employees "affected" by PROGRAM X	Name a person	Daily log (if applicable)
Organization feedback/perception regarding PROGRAM X	Name a person	**Semiannual survey**
Startups analyzed	Name a person	Daily log (if applicable)
Investment opportunities analyzed	Name a person	Daily log (if applicable)
Startups supported with mentorship	Name a person	Daily log (if applicable)
Investments in the ecosystem	Name a person	Daily log (if applicable)
Financial impact of pilots/contracts on Group companies	Name a person	Estimate on pilot approval and quarterly update (?)
	Name a person	Estimate on pilot approval and quarterly update (?)
Valuation of investments	Name a person	Quarterly (?) update with startups
Success stories	Name a person	Quarterly (?) update with startups
Magnitude of the startups we are supporting (jobs)	Name a person	Quarterly (?) update with startups
Magnitude of the startups we are supporting (investment received)	Name a person	Daily log (if applicable)
Pilots (tested solutions)	Name a person	Daily log (if applicable)
Contracts signed with startups	Name a person	Daily log (if applicable)

Metrics [detail]

PROGRAM X's reputation in the initiatives in which it participates or organizes

A

| goal | In the context of analyzing PROGRAM X´s impact, we want to assess **PROGRAM X's reputation** in the ecosystem initiatives in which it participates or organizes |

| Information collection method | At the end of each initiative, PROGRAM X teams launch surveys to as many participants as possible |

| Final classification | This metric will have as its final rating the average rating given to a set of questions. Examples:
▪ "On a scale of 1 to 7, rate the impact of PROGRAM X on this meeting"
▪ "On a scale of 1 to 7, rate the performance of PROGRAM X's participation in this meeting"
▪ "On a scale of 1 to 7, how useful is this meeting" |

Recognition of the Group (PROGRAM X) as a relevant player in the innovation ecosystem

B

| goal | In the context of analyzing the impact of Grow, we want to assess the level of **recognition of the Group (PROGRAM X)** as a relevant *player* in the innovation ecosystem |

| Information collection method | Conduct a market study of the ecosystem: incubators, accelerators, corporate accelerators, startups , universities and others |

| Final classification | (to be defined) |

Metrics [detail]

Organization feedback/perception regarding PROGRAM X

W

goal	In the context of analyzing the impact of Grow, we want to assess the **perception of the Group's employees about PROGRAM X**
Information collection method	Carry out a biannual survey of a broad group of employees who had direct and indirect interaction with PROGRAM X activity
Final classification	(to be defined)

Success stories

D

goal	In the context of analyzing the impact of PROGRAM X, we want to assess how many "success cases" we have among the startups we work with (pilots or contracts)
Information collection method	Interview startups quarterly with some questions about their activity
Final classification	Verification of the existence of (at least) 2 criteria that make a startup a "success case". Examples: ❑ **Number of employees:** + 50 (since they started working with Grow) ❑ **Number of customers:** +20% (since they started working with Grow) ❑ **Investment received:** minimum 3x the amount startups raised before working with Grow ❑ **Internationalization:** launch of 1 more location (since they started working with Grow) ❑ **Innovation:** new product development (since they started working with Grow)

Metrics can be like... shopping lists...

Indicators collected [list] v1

- # of solutions identified
- # of solutions selected
- # of experiments (field tests) run
- # of customers exposed to a new solution
- # of customer interviews
- # of prototypes/ MVPs built
- # of acceleration initiatives held
- Experiment results
- Cost-per-learning
- Time-cost-per-learning
- Learning velocity
- Validation velocity
- # of products in pipeline
- # of applications submitted
- # of decisions made
- # of products moving stages
- Average amount spent per stage

- Stage-gate criteria
- Assumption-to-knowledge ratio
- % of products at problem-solution fit
- % of products at product-market fit
- % of products ready to scale
- # of products by innovation type (core, adjacent, transformational)
- # of products per substage (problem, solution, business)
- % of products aligned to thesis
- # of patent fillings
- Partnerships and collaborations
- Process improvement metrics
- Number of patents granted
- New business models ready to scale
- Cost savings
- Innovation talks

Indicators collected [list] v2

- # training in the field of innovation

- Level of team availability to tackle PROGRAM X themes

- Awareness of teams about what PROGRAM X has done

- # internal participants

- Level of Top Management involvement

- Level of engagement and motivation of teams with PROGRAM X

- Talent retention

- Budget allocated to PROGRAM X

- Amount allocated to each phase of the pilots

- Value allocated to ecosystem events

- Return on investment

- # discussions about the possible application of the identified solutions to other businesses

- # pilots

- # participation in Ecosystem events

- % success of pilots

- # contracts with products/services

- Customer satisfaction with products/services

- PROGRAM X Reputation

- Recognition of the Group as a relevant player in the Ecosystem

Collected indicators [list] v3

- # training within the scope of PROGRAM X
- Level of team availability to tackle PROGRAM X themes
- Level of Top Management involvement
- # people allocated to PROGRAM X
- # internal participants
- # external participants
- mentorship
- # office hours (mentors)
- Talent retention
- # new partners established
- Level of engagement and motivation of teams with Grow
- awareness regarding PROGRAM X activities
- Budget allocated to PROGRAM X

- Value allocated to each phase of the pilots (scouting , pilot, award, …)
- Value allocated to ecosystem events
- Return on investment (ROI) for pilots
- # discussions about the possible application of the identified solutions to other businesses
- # scouting initiatives
- # startups contacted
- # participation in Ecosystem events
- # pilots
- # contracts with products/services
- # transversal solutions
- Customer experience with products/services
- PROGRAM X Reputation
- Recognition of the Group as a relevant player in the Ecosystem

Collected indicators [list] v4

- Employees dedicated to PROGRAM X
- Employees involved in PROGRAM X initiatives
- Employees with access to training within the scope of PROGRAM X
- Employees with effective mentorship experience
- Level of team availability to tackle PROGRAM X themes
- Level of top management involvement
- Level of engagement and motivation of operational teams with PROGRAM X
- Awareness of employees regarding PROGRAM X activities
- External stakeholders involved in PROGRAM X initiatives (e.g. Advisory Board)
- Hours of mentoring provided (mentorship + office hours)
- Global budget allocated to PROGRAM X
- Values allocated to each of the pilot phases (scouting , pilot, award, …)
- Pilot ROI

- Value allocated to ecosystem events
- PROGRAM X's contribution to the development of new companies (e.g. pilot financing)
- Solutions that responded to platform challenges/gaps
- Discussions about the transversality of the identified solutions
- Solutions transversal to other Group platforms
- Group presence at ecosystem events
- Scouting
- Startups analyzed
- Startups contacted
- Pilots accomplished
- Contracts with startups
- Customer experience in relation to the contracted products/services
- Established partners (players)
- PROGRAM X Reputation
- Recognition of the Group as a relevant player in the Ecosystem

Collected indicators [list] v5

- # Group employees involved in training (e.g. Mentor/ Investor Training Academy)
- # PROGRAM X's participation in initiatives (e.g. GITR)
- Value attributed to sponsorship of initiatives (ex : #LIS18)
- # established partnerships (ex : Cisco)
- PROGRAM X Reputation
- Recognition of the Group (PROGRAM X) as a relevant player
- # of mentors with effective mentorship experience
- # hours of mentoring provided (office hours + mentorship)
- Value attributed to supporting pilots
- Customer experience in relation to the contracted products/services
- # employees involved in the pilot process

- # solutions that responded to the Group's challenges/gaps
- # meetings with startups
- # tested solutions (pilots)
- # contracts made with startups
- # startups with investment after pilot with PROGRAM X
- # contributors dedicated to PROGRAM X
- # employees involved in PROGRAM X initiatives
- Awareness of employees regarding PROGRAM X activities
- Level of engagement and motivation of teams with PROGRAM X (top management and operational)
- Return on Investment (ROI)
- Total value of investments

Ex. Group discussion: R&D Metrics for Ethics and AI Research Center

Let's break into groups of 5 and discuss   ⏱ 60 min.

Objective: Develop a set of actionable, specific, and measurable R&D metrics that align with the organization's mission to advance research in ethics and artificial intelligence

Instructions: (5 minutes)
Create a framework of metrics that will help the organization measure the impact and effectiveness of its R&D activities in the field of ethics and AI

Brainstorming Metrics (15 minutes) – ROUND 1
Briefly write the **mission & 3 strategic objectives** of the organization to ensure that we all have a clear understanding of the context. Identify **metrics** that could be used to measure the success of the organization's R&D efforts.
Please remember to various aspects such as **innovation, societal impact, engagement, and academic contribution**

Outcome

Leave the session with a clear set of defined R&D metrics that are aligned with the organization's strategic goals

Ex. Group discussion: R&D Metrics for Ethics and AI Research Center

Let's break into groups of 5 and discuss   🕐 60 min.

Objective: Develop a set of actionable, specific, and measurable R&D metrics that align with the organization's mission to advance research in ethics and artificial intelligence

Instructions: (5 minutes)
Create a framework of metrics that will help the organization measure the impact and effectiveness of its R&D activities in the field of ethics and AI.

Brainstorming Metrics (15 minutes) – ROUND 1
Briefly write the **mission & 3 strategic objectives** of the organization to ensure that we all have a clear understanding of the context. Identify **metrics** that could be used to measure the success of the organization's R&D efforts.
Please remember to various aspects such as **innovation, societal impact, engagement, and academic contribution**

Brainstorming Metrics (20 minutes) – ROUND 2
Elect **3 metrics** to present to your BOARD and explain why those metrics and not others
Suggested areas to develop metrics around include:
Innovation Rate: Number of new methodologies or frameworks developed | Impact Factor: Influence on policy changes or adoption of ethical guidelines by tech companies | Engagement Metrics: Level of collaboration with academic institutions, tech companies, and other nonprofits | Publication Metrics: Number and quality of research papers published | Outreach Effectiveness: Reach and engagement of workshops, seminars, or webinars conducted

Group Presentation (20 minutes)
Please explain why they chose these metrics and how they align with the organization's goals.

Outcome

Leave the session with a clear set of defined R&D metrics that are aligned with the organization's strategic goals

Key Takeaways

✅ Align metrics and incentives with innovation activity

✅ Define a clear innovation dashboard to gain credibility and transparency

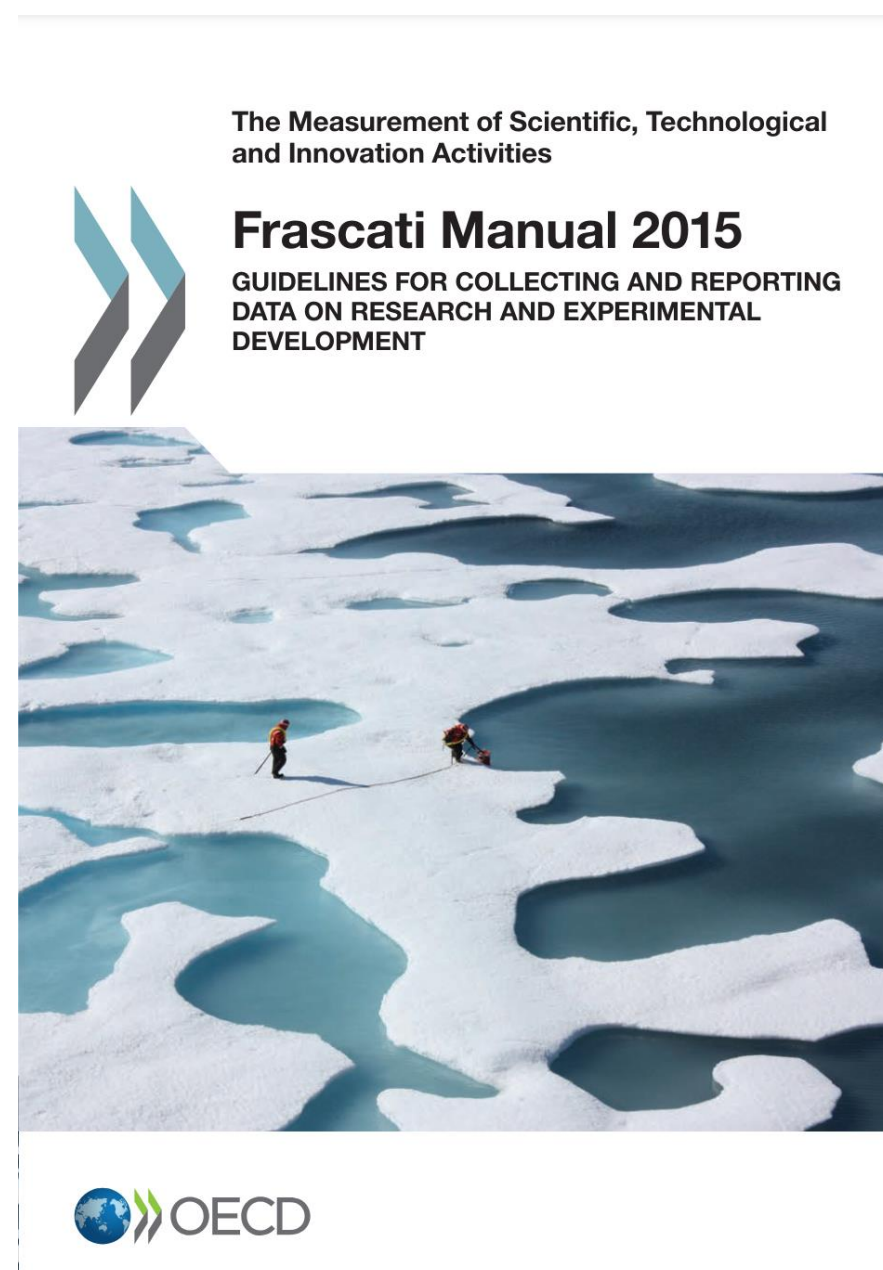✅ When defining metrics... simplicity is the ultimate sophistication

☞ Let´s innovate in other topics beyond metrics…

H.Edison et alt in 2013, "The Journal of Systems & Software" identified 232 metrics on Innovation Management…

Highly Curated Reading List

Because you can't read everything all at once

The Measurement of Scientific, Technological and Innovation Activities

Frascati Manual 2015
GUIDELINES FOR COLLECTING AND REPORTING DATA ON RESEARCH AND EXPERIMENTAL DEVELOPMENT

OECD

https://www.oecd.org/innovation/frascati-manual-2015-9789264239012-en.htm

McKinsey & Company

Strategy & Corporate Finance Practice

Building an R&D strategy for modern times

The age of the insular R&D organization is over. To serve as a company's innovation engine, R&D strategy needs to be equipped for today's fast-moving world.
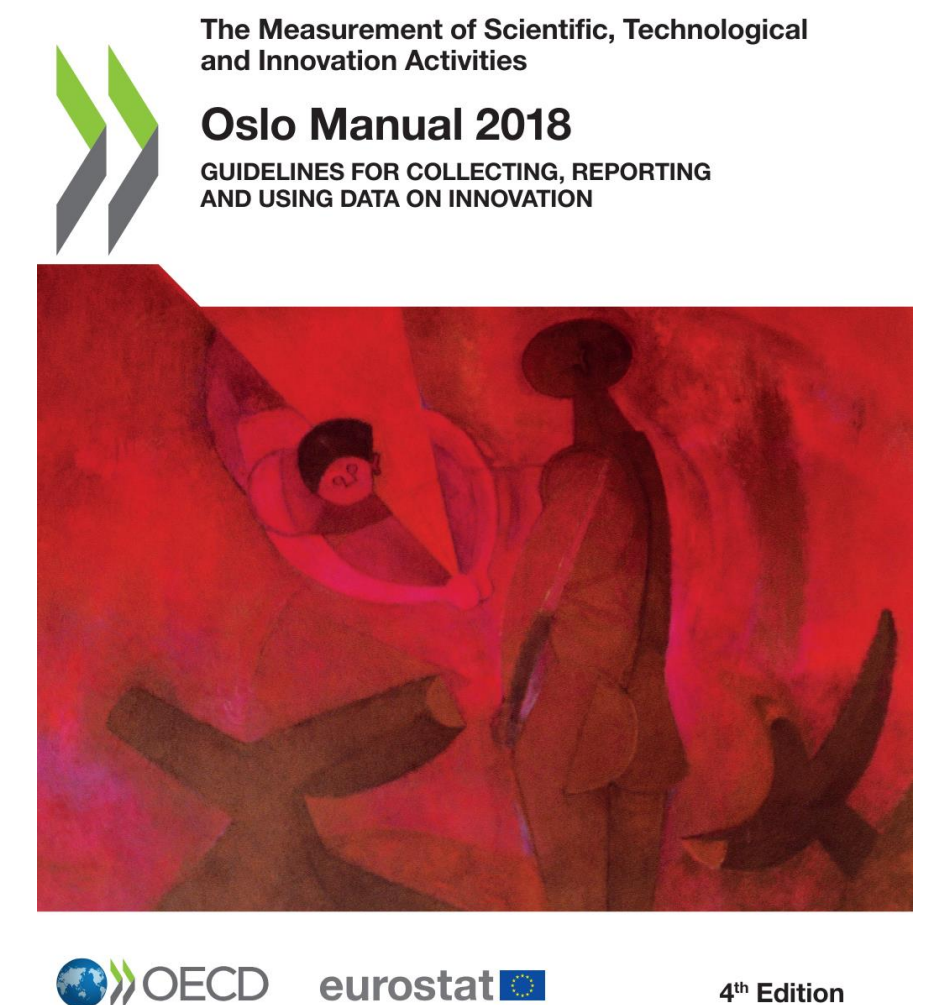
by Tom Brennan, Philipp Ernst, Josh Katz, and Erik Roth

https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/building-an-r-and-d-strategy-for-modern-times

Wharton UNIVERSITY of PENNSYLVANIA | William and Phyllis MACK INSTITUTE for INNOVATION MANAGEMENT

Metrics for Managing Innovation
Lessons From Growth Leaders

Contents

Introduction 3
How Whirlpool Became an Innovator and Transformed an Industry 6
Why Is Innovation Performance So Hard to Measure? 8
How Do Innovation Metrics Contribute to Innovation Performance? 15
Which Innovation Metrics for a Dashboard? 18
Pitfalls in Measuring Innovation 21
Overcoming the Pitfalls 25
Navigating Uncertainty With Metrics 30

HTTPS://MACKINSTITUTE.WHARTON.UPENN.EDU   FALL 2020

https://mackinstitute.wharton.upenn.edu/wp-content/uploads/2020/11/Metrics-for-Managing-Innovation-White-Paper.pdf

The Measurement of Scientific, Technological and Innovation Activities

Oslo Manual 2018
GUIDELINES FOR COLLECTING, REPORTING AND USING DATA ON INNOVATION

OECD   eurostat   4th Edition

https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm