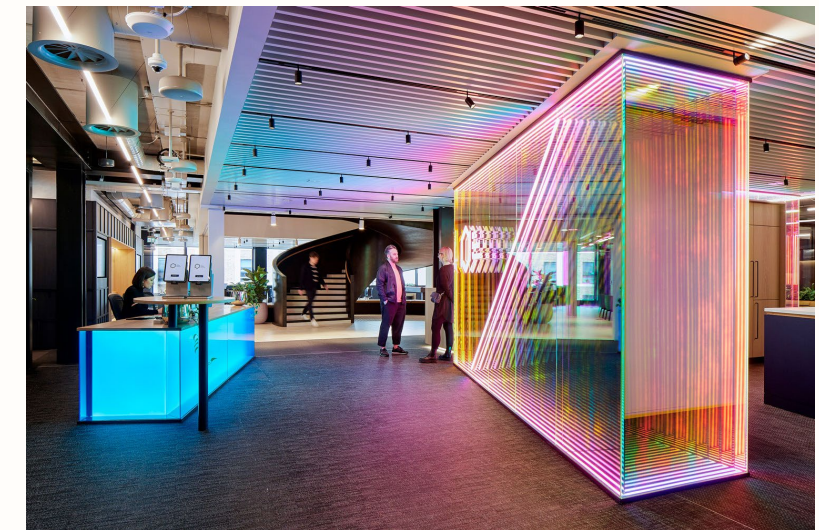


# Measuring Performance of Innovation Ecosystems and Communities

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**Science Park**  
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# From bricks to brains

The science park movement laid the foundation for creation of innovation ecosystems.

They served as **physical catalyst** for innovation, promoted **technology transfer** and **academic entrepreneurship**.

Initially financial, property related and technology transfer indicators were key measures to assess success.

Over time, the role of science parks evolved to emphasize collaboration that is increasingly interdisciplinary, cross-sectoral and global, and **no longer confines to physical boundaries**.

Therefore, performance assessment have become oriented towards the evaluation of intangible factors: **collaboration**, **value creation**, and **knowledge dissemination**.



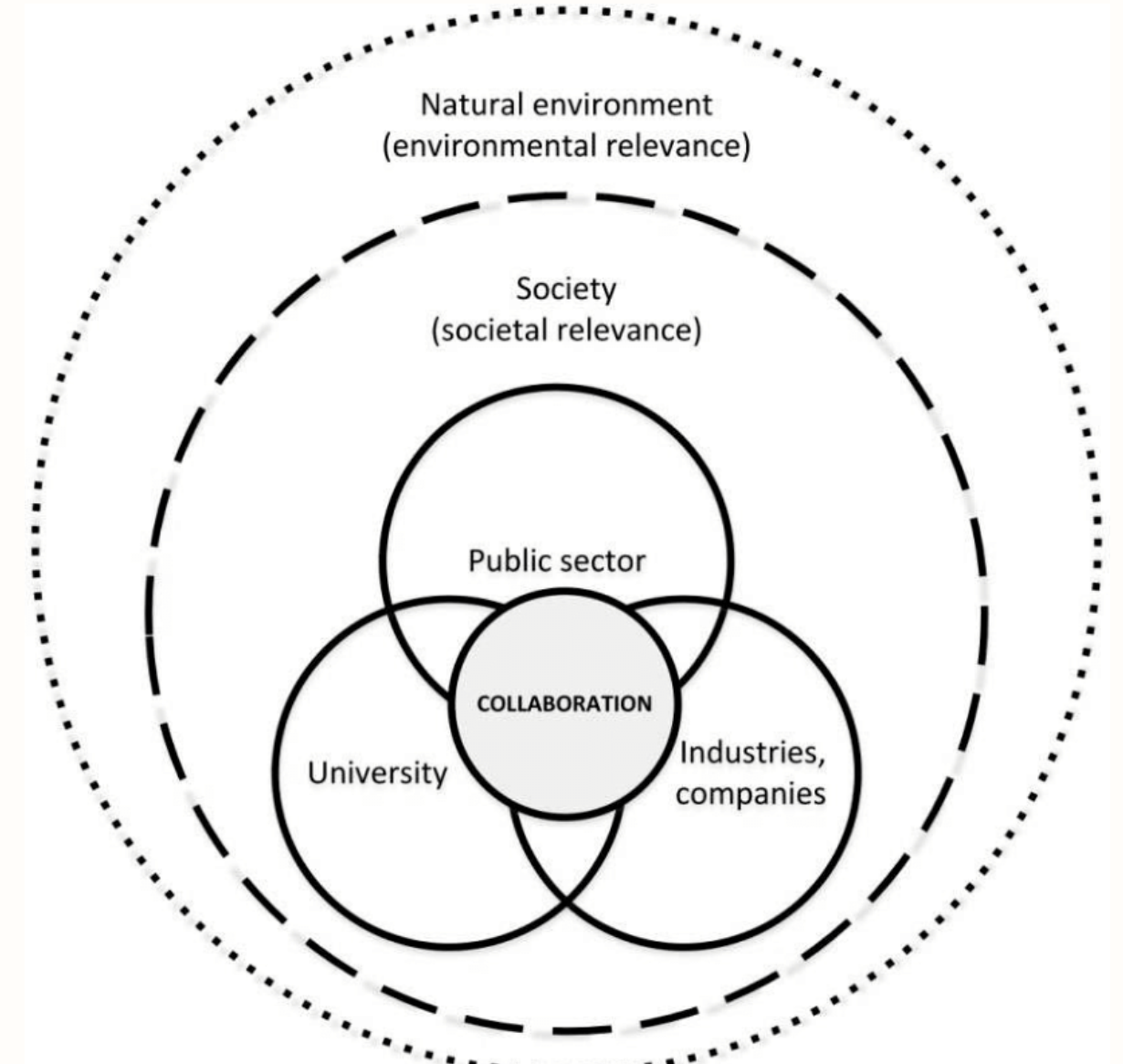
# From Triple Helix to Quintuple Helix

The Triple Helix model underpins parks, emphasizing collaboration between **academia, industry, and government** to drive innovation.

However, the model has evolved to incorporate **broader contextual dimensions, including community engagement and environmental sustainability.**

Innovation ecosystems reflect this **Quintuple Helix** in their settings and apart from fostering innovation through collaboration they serve their **communities** and contribute to **the natural environment.**

Consequently, in addition to performance assessment metrics capturing indicators related to innovation ecosystems should evaluate the extent to which these ecosystems create value for both the society and the environment.



# Past evaluations



The earliest impact evaluation studies of ‘innovation areas’ (1988), employed a matched sample approach to examine statistically significant differences between on-site and off-site firms in terms of number of jobs created, sales, profitability, R&D outputs, new products and/or services, employment, etc.

While the matched sample approach may appear methodologically straightforward, it presents notable limitations:

- **Lack of comparable data**
- **Selection bias**
- **Limited control over firm-level variables**
- **Broader impact of innovation ecosystems**
- **Narrow scope of evaluation**



# Common Measurement Pitfalls

## Too strong focus on financial or property related perspective

Over-reliance on financial and property related metrics neglects qualitative and long-term innovation aspects.

## Lack of Differentiation

Failure to use distinct metrics for different different innovation categories leads to to inaccurate conclusions.

## Short-term Bias

Measuring only immediate understanding of sustained innovation impact.

## Inconsistent Methods

Variability in measurement approaches data and comparability.

## Various expectations

A wider range of actors became involved in innovation ecosystems, bringing diverse expectations and resulting in different performance metrics - some complementary, others potentially contradictory.

## Misalignment

Misfit between metrics and strategy causes confusion and innovation tracking.



# Balanced Scorecard - Inspired

## Methodology: Perspective Model

### Multi-Dimensional Metrics

The balanced approach tracks performance across various perspectives to comply with changing requirements of various groups of stakeholders.

### Holistic Evaluation

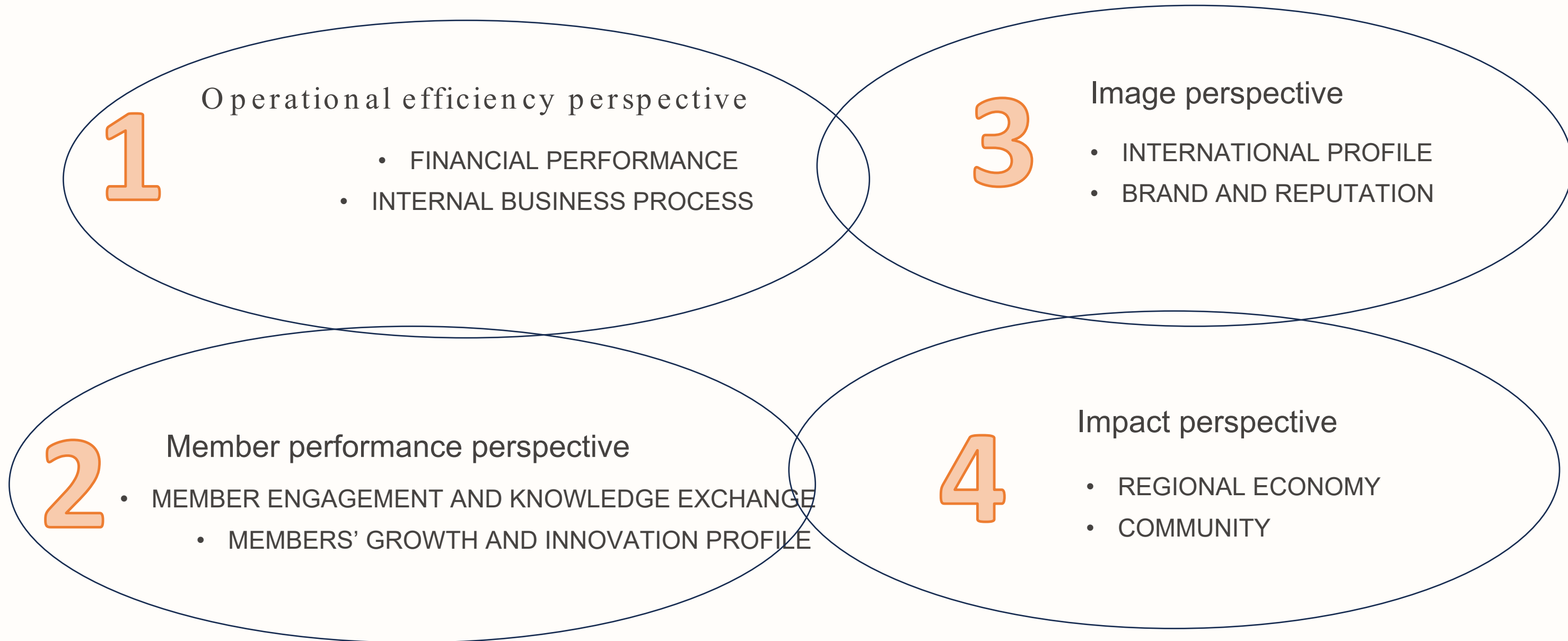
This approach provides a well - rounded overview, integrating diverse metrics to capture complex dynamics beyond finance, property and classic innovation related indicators.

### Strategic Management

It is a comprehensive system supporting strategic decision - making and continuous improvement.



# Perspectives for Assessing Performance



# Operational efficiency perspective:

## Financial performance

Performance area	Performance Indicator	Measures	Baseline (Year End)	Target/Benchmark	Results	Frequency of reporting
Commercial performance	Profitability	Profit Before Interest and Tax Turnover	confidential	confidential	confidential	Annually
	Percentage of occupied space	Sq. ft occupied /net lettable sq. ft	Corridor/main site: 89% OCP: 65% SIF: new site no target defined Technopark: 70%	Corridor/main site: 85% OCP: 71% SIF: new site no target defined Technopark: 70%	Corridor/main site: 86% OCP: 26% SIF: 63% Technopark: 69%	Monthly
	Sales	1) Existing tenants (tenant retention rate): number of renewals as % of lease expires in last 12m  2) New tenants (Conversion of enquiries): enquiry /let office)  3) Nr of network subscriptions	1) 71% 2) 19% 3) 15	1) 75% 2) 24% 3) 65	1) 77% 2) 21% 3) 72	Annually
	Debt management	Total aged debt > 120 days old	£88K	£60K	£16K	Monthly
	Actual financial performance versus forecasted budget	1) PBIT vs. budget 2) Services cost recovery	1) 101% 2) 75%	1) 100% 2) 76%	1) 102% 2) 77%	Monthly
	Investment Efficiency	1) ROI 2) External funding raised to support growth/operations	confidential	confidential	confidential	confidential

# Operational efficiency perspective:

## Internal business processes

Performance area	Performance Indicator	Measures	Baseline (Year End)	Target/Benchmark	Results	Frequency of reporting
Internal business processes	Level of employee satisfaction	Percentage of staff leaving	3%	4%	3%	Annually
	Level of Member satisfaction	Percentage of member satisfaction level (4-5 scores)	87%	90%	91%	Annually
	Staff sickness absence	Average absence in days per employee	4.4	5	4.4	Annually
	Unforced billing errors	Percentage of credit notes issued		3.0%	2.5%	Quarterly
	Time taken to fix complaints	Percentage of Member complains resolved within 48 hours	49%	70%	86%	Monthly
	Security incidents	Number of security incidents		1	3	Quarterly
	Reliable IT systems	Number of ICT outages lasting > 1 hour	1	0	2	Quarterly
	Reduction of carbon footprint	1) Paper usage reduction (boxes) 2) Reduction in waste collections 3) Recycling increase		1) 37 2) 5% 3) 5%	1) 35 2) 11% 3) 27%	Quarterly
	Environmental sustainability	Eco-friendly solution adoption	5	10	11	Annually

# Members' perspective: engagement and knowledge exchange

Performance area	Performance Indicator	Measures	Baseline (Year End)	Target/Benchmark	Results	Frequency of reporting
Member activities in Hub/Park/innovation Area	Participation in networking events	Percentage of members who have taken part in one or more events organized by the HUB	65%	70%	76%	Quarterly
	Inter-company collaboration	Percentage of members having formal working Relationship with another member on the HUB	57.8%	n/a	66.6%	Annually
	Inter-company collaboration as a result of Hub interventions	Percentage of members having formal working relationship with another member in the HUB as a result of the HUB support	32.4%	40%	44.2%	Annually
	Links to university and/or hospitals	Percentage of member companies that have links with universities	65%	n/a	64%	
	Links to university and/or hospitals as a result of Hub support	Percentage of member companies who have links with universities as a result of the HUB support	12%	15%	15%	Annually
	Additional funding raised by members	Percentage of member companies who received additional funding	37.5%	n/a	27%	Annually
	Additional funding raised by members as a result of Hub support	Percentage of member companies who received funding as a result of the HUB support	25%	25%	22%	Quarterly
	Additional sales or work obtained by members as a result of Hub support	Percentage of tenants who obtained additional sales or work as a result of the HUB support	32.3%	32%	25.4%	Quarterly
	Additional business contacts as a result of Hub support	Percentage of member companies with additional business contacts as a result of the HUB support	53.1%	55%	70.5 %	Quarterly
	Involvement in ESG activities organized by the HUB	Percentage of member companies involved in ESG activities organized by the HUB	8%	30%	26%	Annually

# Members' perspective: growth and innovation

Performance area	Performance Indicator	Measures	Baseline (Year End)	Target/Benchmark	Results	Frequency of reporting
Members' growth and innovation profile	Members' growth (turnover)	Percentage of companies growing (turnover)	47.9%	n/a	60.3%	Annually
	Members' growth (staff)	Percentage of companies growing (staff)	44.7%	n/a	40.6%	Annually
	Tenants who took more space/opened new branches	Percentage of members who took more space/opened new branches		n/a	34.8%	Annually
	Innovation profile	1) Percentage of members engaged in R&D 2) Percentage of members outsourcing R&D (Open Innovation) 3) Percentage of employees having a post graduate degree per company	n/a	1) 70% companies 2) n/a 3) n/a	1) 67% companies 2) 46% products/services 3) 63%	Annually
	Innovation types (radical vs incremental)	1) Percentage of companies who developed completely new products 2) Percentage of companies who developed completely new services 3) Percentage of companies who made improvements to already existing products 4) Percentage of companies who made improvements to already existing services 5) Percentage of companies involved in social innovations 6) Percentage of companies involved in ecological innovations	n/a	n/a	1) 23% 2) 47% 3) 33% 4) 37% 5) 21% 6) 42%	Annually
	Research/cross-sector collaboration as a result of HUB support	Percentage of member companies involved in research activities/cross-sector collaboration as a result of HUB support	37%	50%	42%	Annually
	Patents	Number of patents issued/exploited	n/a	n/a	6/4	Annually
	Licenses	Number of products licensed in and out by member companies	43	n/a	45	Annually
	Publications	Percentage of member companies who published papers in academic/trade/commercial journals		n/a	22%	Annually
	High risk funding accessed	Percentage of companies who received funding from high-risk funds		n/a	8%	Annually

# Image perspective:

## International profile, brand and reputation

Performance area	Performance Indicator	Measures	Baseline (Year End)	Target/Benchmark	Results	Frequency of reporting
International profile	Inward investment companies within the HUB	Percentage of inward investment companies within the HUB	16%		14%	Annually
	Companies carrying out international activities (buying or selling abroad)	Percentage of companies carrying out international activities (buying or selling abroad)	67%		81%	Annually
	Inward visits to the HUB	Number of inward visits to the HUB	15	n/a	20	Quarterly
	Countries involved in inward visits	Number of countries involved in inward visits	10	n/a	19	Quarterly
	Good quality invitations to speak or participate in seminar	Number of good quality invitations to speak or participate in seminar		n/a		Quarterly
	Requests to take part in studies or benchmarking exercises	Number of requests to take part in studies or benchmarking exercises	40	n/a	39	Quarterly
Brand and reputation	Awards or prizes	Number of awards/prizes won by the HUB or its member companies		n/a	12	Annually
	Media coverage	Number of positive press releases about the HUB or successful company based on the HUB		12	14	Monthly
		Number of neutral/negative press releases		0	2	Monthly
		Number of followers on social media	4342		5108	Annually
	Referrals from other organizations	Percentage of enquiries from referrals	22%		25%	Monthly
	Companies in the HUB network	Number of companies in the HUB network (newsletter reach)	250		306	Quarterly
	Enquiries from appropriate organizations *	Percentage of enquiries from appropriate organizations			99%	Annually

# Impact perspective: Regional economy and communities

Performance area	Performance Indicator	Measures	Baseline (Year End)	Target/Benchmark	Results	Frequency of reporting
Hub impact on regional economy	Number of jobs created by members	1) Number of FTE employees within member companies	950		1015	Annually
	Survival rates of companies that have passed through the HUB	Percentage of companies who have passed through the HUB (members and ex-members) and are 10 years old or more (have a ten-year survival rate)	72%	42%	70%	Annually
	Length of life of the companies based within the HUB	Percentage of companies based on the HUB who are more than 5 years old	84%	n/a	80%	Annually
	Average salary paid by member companies to their employees	The mean wage	£50,964	n/a	£62,857	Annually
	Talent retention	Percentage of employees within member companies sourced from local universities	30%	n/a	32%	Annually
Hub impact on communities	Communities' engagement	1) Number of community engagement events hosted (on site) 2) Number of people from local communities Participating in HUB Events	1) 6 2) 84	1) 10 2) 100	1) 11 2) 103	Annually
	Partnerships with community organizations	Number of partnerships with community organizations (schools, NGOs, etc.)	4	7	7	Annually
	Initiatives supporting communities	Number of initiatives supporting local communities (off site: charity events, mock interviews for young people, exhibitions, fairs, etc.)	3	5	8	Annually
	Members involvement in communities' support	Percentage of members engaged in organization of events/initiatives aimed at communities	23%	30%	32%	Annually
	Communities' employment	Local community employment rate	n/a	n/a	68%	Annually

# Aligning indicators with Stakeholder Expectations

As various stakeholders are involved in innovation ecosystems, they bring diverse expectations and therefore prioritize different performance indicators. The Perspective Model addresses this by assigning weights to each indicator (1-the most important, 5 the least important), reflecting the relative importance attributed to different areas of performance evaluation by the respective stakeholder groups.

CATEGORIES OF PERFORMANCE / PERFORMANCE PERSPECTIVES/AREAS	KEY PERFORMANCE INDICATORS FOR DIFFERENT OWNERSHIP MODELS							PROPOSED PERFORMANCE INDICATORS	Measures	Baseline	Benchmark and/or Target	Actual
	UNIVERSITY	PUBLIC	PRIVATE	UNI-PUBLIC	TRIPLE HELIX	UNI-PRIVATE	PUBLIC-PRIVATE					
Commercial performance	5	2	1	1	3	1	2	Profitability				
	3	1	3	3	2	2	1	Percentage of occupied space				
	4	4	4			3		Turnover				
				5	5	3		Sales				
							3	Debt management				
			2		5		4	Actual financial performance versus forecasted budget				
	1	3		2	4	3	5	External funding raised by the park				
	2	5	5	4	1	3		Investment returns				
Resident involvement in park activities	4	5	3	4	3	2	3	Participation in networking events				
		5		5				Inter-company trading				
	3	2	3	3	2	4		Inter-company trading as a result of SP interventions				

# Key Features of the Perspective Model



## Modern and holistic approach

- It remains sensitive to the diverse expectations and priorities of various stakeholder groups, ensuring that performance metrics are aligned with their specific interests and roles.
- The measures are grounded in the **Triple Helix framework**, which emphasizes the interaction between academia, industry, and government, and are further extended to incorporate the community dimension (**Quadruple Helix**) as well as environmental considerations (**Quintuple Helix**), thereby enabling a more comprehensive and inclusive evaluation of innovation dynamics.

# Key Features of the Perspective Model



## The Model includes:

- **Input indicators:** Capture intentions, efforts, and resource allocation (e.g., investment in research infrastructure, number of networking events, number of scientists employed).
- **Output indicators:** Represent direct and immediate results of activities (e.g., number of connections established, funding raised, number of granted patents etc.).
- **Outcome/impact indicators:** Reflect medium- and long-term achievements resulting from outputs (e.g. Inter-company trading or collaboration projects as a result of innovation zone support, level of commercialization of research results, employment growth, growth in revenue of companies, survival rates of companies, etc.).

# Key Features of the Perspective Model



- The Model integrates performance metrics that are aligned with the defining characteristics of the Knowledge Economy.
- These include the ***level of innovation, the extent of co-creation and co-opetition, the adoption of open innovation practices, cross-sector collaborations, the availability and utilization of high-risk capital.***
- By combining these elements, the Model provides a nuanced and stakeholder-sensitive framework for evaluating innovation performance in dynamic and knowledge-based environments.

# Credibility and trust

The proposed methodology offers a balanced approach not only to measuring performance but also to **co-managing the entire process**, as all stakeholders become involved.

It aligns with stakeholders' expectations while also ensuring data transparency and reporting, which fosters **credibility and trust**.





# Implementing a Performance Measurement System

1

## Balanced Metrics

Include both financial and non -financial indicators to capture full impact.

2

## Short -term and long -term

Align metrics across all levels of the organization for coherence.

3

## Past & Future Focus

Combine lagging indicators with leading metrics for proactive management.

4

## Strategic Alignment

Ensure metrics support the science park's long -term goals and vision.

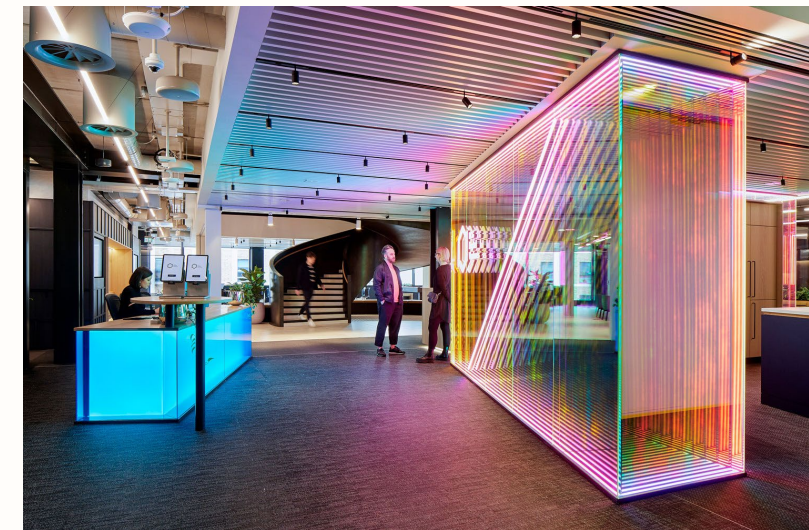
# Key Considerations for Performance Measurement

- **Customize metrics** to reflect the unique mission and goals of each innovation ecosystem.
- Blend **quantitative KPIs with qualitative** and perceptual measures for richer insight.
- **Benchmark** performance against comparable 'Innovation Areas' to gauge relative success.
- Regularly **review** and evolve frameworks to adapt to changing environments.
- **Engage stakeholders** in defining and refining success metrics to ensure relevance and buy-in.
- Identify the leading stakeholder who will **orchestrate** the innovation ecosystem.
- **Communicate the success!**

Applying these considerations ensures measurement systems are both practical and strategically useful, support innovation acceleration and sustainable regional development.

# Thank you

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