

# How can we evidence clusters' role in fostering resilience, industrial transformation and system-level change?

Baltic Cluster Christmas Forum  
10 December 2020

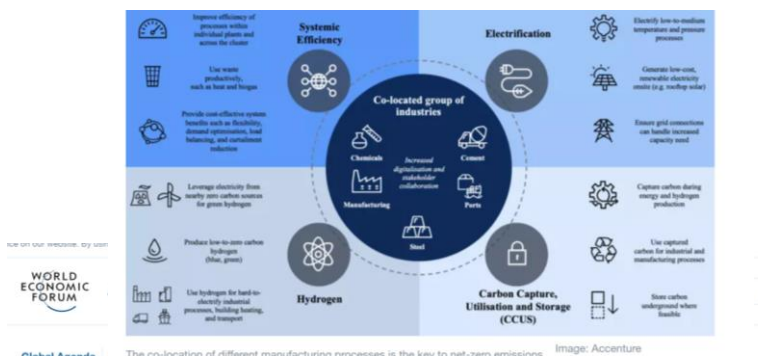
Emily Wise, Consultant and Research Fellow,  
IEC AB and Lund University



Clusters should lead the green transition...  
 Clusters should accelerate the digitalisation of our economy...  
 Clusters should ensure resilience...

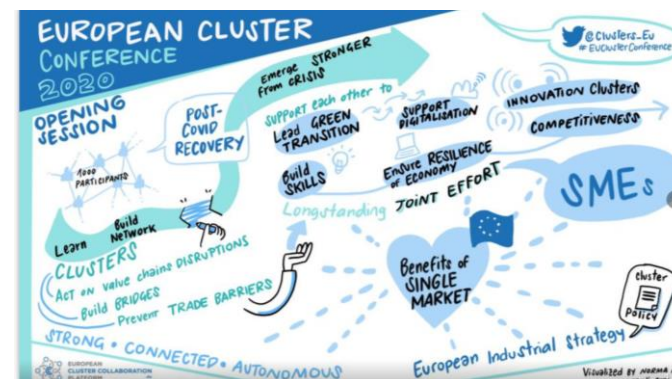
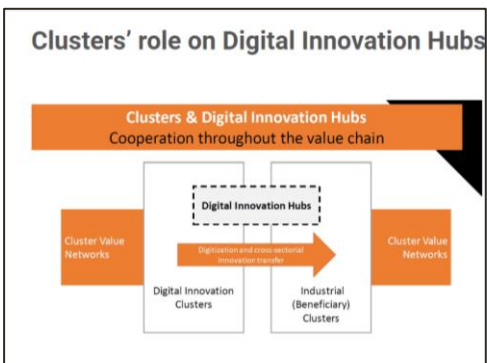
Clusters are an integral part of industrial ecosystems... providing intelligence, building bridges and developing strong partnerships

Clusters are being challenged to do more



Global Agenda The co-location of different manufacturing processes is the key to net-zero emissions Image: Accenture

**Industrial clusters are critical to getting to net-zero. Here's why**



**EUROPEAN CLUSTERS ALLIANCE**

**European Alliance Against Coronavirus Shared Spaces**

- Resources from Multiple networks
- Daily Videoconferences
- ECCP COVID-19 Forum
- Email lists
- Newsletter
- Slack
- Social networks

**European Alliance Against Coronavirus Guiding Rules**

- Conceptual framework
  - 20 minutes total
  - Very concrete, to the point speeches from experts on the day's thematic
- Needs
  - 20 minutes
  - 1-2 maximum per person
- Potential solutions
  - 20 minutes
  - 1-2 maximum per person

Use <https://bit.ly/3d5C6CA> for comments, questions and ideas

CONNECT! SOLVE! SAVE!

COVID-19 Response Force

INDUSTRIAL CLUSTERS RESPONSE PORTAL

**THE GAP 2021**

**CLUSTERS OF CHANGE**

**Join our 2021 Cluster Accelerator Driving Green Transitions**

**anthill**

How business clusters will ensure a strong and collaborative future for the Australian cleantech industry

...and are actively driving system-level transformation

**TOWARDS A NEW GREENER NORMAL**

HOW CLUSTERS ARE DEALING WITH CIRCULAR TRANSITION IN TIMES OF COVID-19

**Vi tar skogen in i framtiden**

Med hjälp av skogen kan vi skapa ett fossilfritt samhälle. Paper Province finns för att göra omställningen möjlig.



Skogen är vägen till ett hållbart samhälle.

**HELPING TODAY. PREPARING FOR TOMORROW**

A guide for Economic Development Organisations and Cluster Organisations

Authors: Christian Ketels, Merete Daniel Nielsen

Case compilation by Patricia Valdenebro

**TCI RECOVERY PLAYBOOK**

TCI NETWORK

How does Denmark's robot and drone cluster create innovation and growth?

Titta senare Dela

All companies within the robot, automation, and drone value chain

1:04 / 1:53

YouTube

**But how can clusters evidence  
the difference they make?**

**How to evidence contributions to  
system-level change?**

## POLL #1:

**What are the most important aims for cluster initiatives?** (choose top three)

- a) Fostering new interactions and collaboration
- b) Fostering innovation in firms
- c) Strengthening firm-level productivity and exports
- d) Contributing to regional attractiveness and competitiveness
- e) Contributing to addressing societal challenges

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What are the most important aims for cluster initiatives?  
(choose top three)

 Start presenting to display the poll results on this slide.

# “European Cluster Policy” has evolved

What are clusters?  
Where are clusters?  
What role for policy?

2000-2006  
Policy development and learning fora on Member State level  
INNO Policy trendcharts and Innobarometer  
Broad-based innovation strategy for the EU (2006)

- Mapping of clusters (10 new MS)
- EU Observatory for SMEs

How to build strength and improve what clusters do?

2007-2013  
COM and SWD (2008) “Towards world-class clusters”  
Improving cluster policies  
Transnational cluster cooperation  
Excellence of cluster organisations

- ECO
- InnoNets, ECPG
- InnoActions
- RoK (FP7)
- ECEI


How can we use (strong) clusters to do new/more things?

2014-2020  
Industrial modernization (I4.0)  
New (cross-sectoral) value chains  
Growth and internationalization of SMEs  
Smart specialization (and interregional collaboration)

- ECO-Emerging Industries
- InnoSup (H2020)
- ECCP and ESCPs-4i
- S3 Platform and ESCPs-S3
- ESCA

# European Policy Frames continue to evolve


**VISION FOR INDUSTRY 2030**  
REPORT BY INDUSTRY 2030  
HIGH LEVEL INDUSTRIAL ROUNDTABLE



In 2030, European industry will be a global leader, responsibly delivering value for society, the environment and the economy. Europe will build its competitive advantage on cutting-edge and breakthrough technologies, respect for our environment and biodiversity, investment in our people, and smart European and global alliances. Based on collaboration and our common European values, this new industrial model will help to make Europe a role model for the rest of the world.

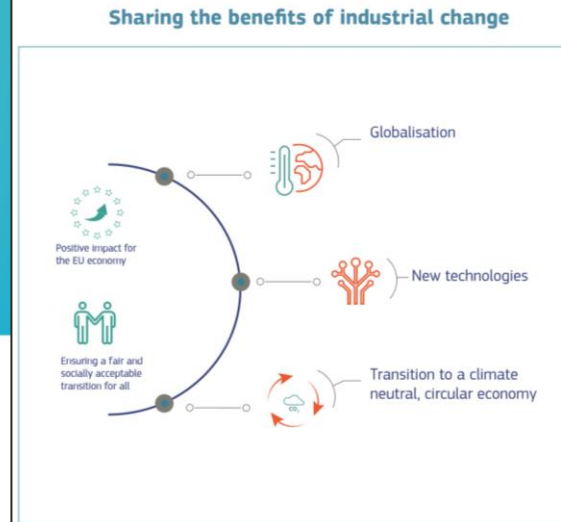
The European Commission proposed setting up the Industry 2030 high level industrial roundtable in the 2017 renewed Industrial Policy Strategy to provide independent advice on future EU industrial policy action. The Vision for Industry 2030 is their contribution to this ongoing debate.

A new European industrial model must adopt an integrated approach to respond to a series of specific and interconnected challenges facing our industries.



Five key drivers to achieve the Industry 2030 vision

New vision for industrial policy strategy



Europe's regions need a clear vision on how to modernise their economies by **embracing digitalisation, technological and social innovation, decarbonisation and the circular economy** for the benefit of all

Enhanced S<sub>3</sub>



**MISSIONS**

## Mission-Oriented Research & Innovation in the European Union

A problem-solving approach to fuel innovation-led growth

by Mariana MAZZUCATO



Research and Innovation

Mission-oriented research and innovation



Policy rationales and aims have evolved

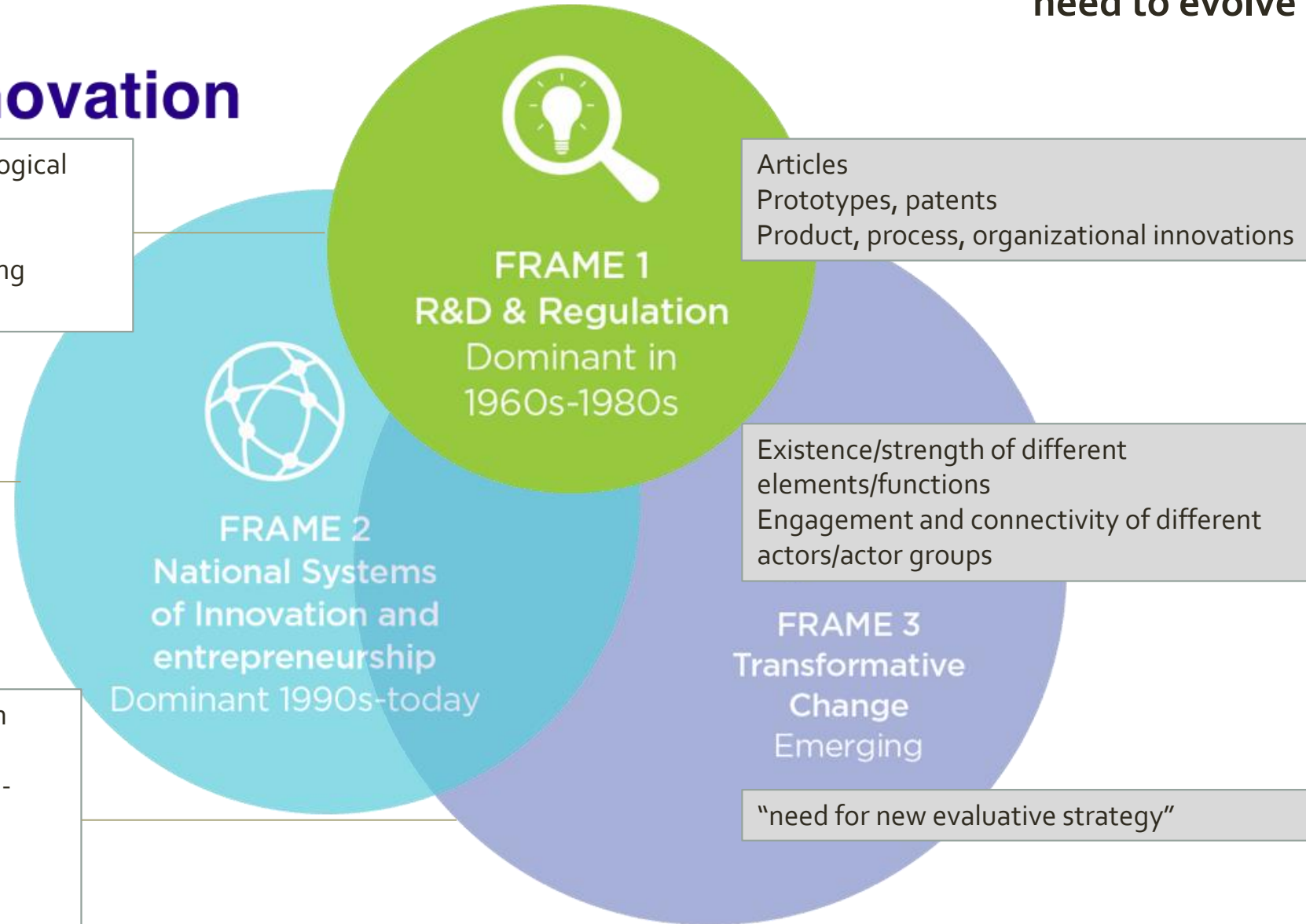
Monitoring and Evaluation practices also need to evolve

## The 3 Frames of Innovation

Innovation for growth; scientific and technological knowledge the key  
Market failure the rationale  
Policy focus on stimulating R&D and catalysing technological advances

Systems of innovation; process for learning and innovation driven by interaction between actors  
System failure the rationale  
Policy focus on fostering more/better coordination and alignment between actors/actor groups

Transformative change; need to better align innovation with social and environmental challenges  
Rationales: directionality, policy coordination, demand-articulation and reflexivity  
Policy focus on co-production of social, technical and behavioral change in an interrelated way (system innovation)



## POLL #2:

**What indicators do you use to evidence your success?**  
(choose three)

- a) (New) cluster participants, interactions and knowledge exchange
- b) (New) collaborative actions and projects
- c) (New) patents, tests/demos or innovation (products, processes, etc.)
- d) Strengthened firm revenue, productivity, export, etc.
- e) Change in participants' strategy, practices, or perceived value of collaboration
- f) Development of cluster management organisation
- g) Stories of system change/progression towards long-term collective aims

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What indicators do you use to evidence your success? (choose three)

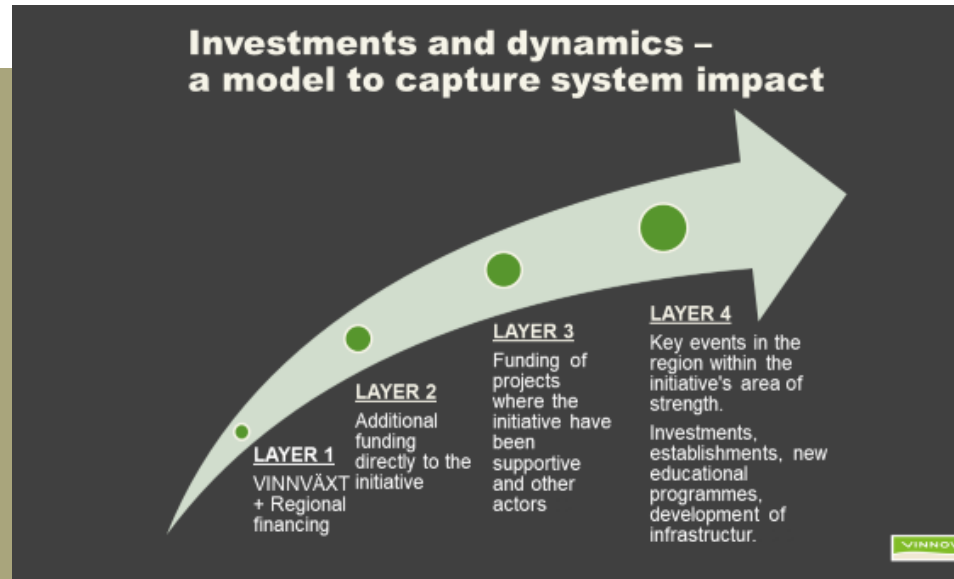
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# Cluster Programme Framework of Effects

Level	Short-term results (1-3 years) Cluster participants <i>(direct/immediate results claimed by cluster participants)</i>	Long term effects (3-10 years) Cluster participants & beyond <i>(indirect/subsequent effects that can be observed over time)</i>	
<b>Individual Actor (A)</b>	Perceptions & Behaviours <ul style="list-style-type: none"> <li>- Competence development</li> <li>- Knowledge exchange</li> <li>- Capacity to innovate</li> <li>- Involvement in collaborative activities</li> </ul>	(Economic) Performance experienced by individual actors	
<b>Collaborative Group/Cluster Initiative (C)</b>	Perceptions & Behaviours <ul style="list-style-type: none"> <li>- Engagement of different actor groups</li> <li>- Dynamics of linkages over time</li> <li>- Perceived value of collaboration</li> </ul> Collaboration Infrastructure <ul style="list-style-type: none"> <li>- Quality of cluster management</li> <li>- Leadership</li> <li>- Processes</li> </ul>		
<b>Territorial System (S)</b>  <b>Focus</b>	Spillover Effects <ul style="list-style-type: none"> <li>- Improving the competitiveness and international attractiveness of the innovation ecosystem</li> </ul> Strategic/Systemic Leadership Effects <ul style="list-style-type: none"> <li>- Contributing to increased effectiveness (structures, policies and institutional arrangements) of the innovation ecosystem</li> </ul>	Spillover Effects <ul style="list-style-type: none"> <li>- Improving the competitiveness and international attractiveness of the innovation ecosystem</li> </ul> Strategic/Systemic Leadership Effects <ul style="list-style-type: none"> <li>- Contributing to increased effectiveness (structures, policies and institutional arrangements) of the innovation ecosystem</li> </ul>	<b>Higher Level System Effects</b>

Reference: Wise, Wilson and Smith (2018). Evidencing the benefits of cluster programmes – towards a framework of effects. Paper presented at the *Regional Studies Association Winter Conference*, London, November 2018.

Focused efforts to better evidence Vinnväxt's system-level effects



### Cluster programme framework of effects

(following several iterations with groups of practitioners, policymakers and researchers)

Level	Short-term results (1-3 years) Cluster participants <i>(direct/immediate results claimed by cluster participants)</i>	Long term effects (3-10 years) Cluster participants & beyond <i>(indirect/subsequent effects that can be observed over time)</i>
<b>Individual Actor (A)</b>	Perceptions & Behaviours - Competence development - Knowledge exchange - Capacity to innovate - Involvement in collaborative activities	(Economic) Performance experienced by individual actors
<b>Collaborative Group/Cluster Initiative (C)</b>	Perceptions & Behaviours - Engagement of different actor groups - Dynamics of linkages over time - Perceived value of collaboration	Collaboration infrastructure - Quality of cluster management - Leadership - Processes
<b>Territorial System (S)</b>	Competitiveness and international attractiveness of innovation eco-system - Changes in behaviours and performance of system	Competitiveness and international attractiveness of innovation eco-system - Changes in behaviours and performance of system
<b>Focus</b>	Effectiveness of business and innovation support system - Changes in structures, policies and institutional arrangements	Effectiveness of business and innovation support system - Changes in structures, policies and institutional arrangements

A "meta action research project" aimed at:

- A common understanding of system-level effects (definition and categories)
- A structured approach to evidence system-level effects (including leverage of action researchers)
- Ideas on how information can be used to strengthen strategic development processes and communication of Vinnväxt effects

## A (preliminary) definition of system level effects

A system level effect is a *milestone*, event or outcome that has been *influenced by (a set of) actions of the cluster/collaborative initiative*, and which has a lasting, *longer-term impact on several organisations/actors* in the territorial system (both *within and beyond the cluster/ collaborative initiative*).

# Participatory approach to defining system result categories

Category abbreviation	Description	Examples	
System Resources	KD	<b>Knowledge Development and Dissemination:</b> affecting how knowledge is developed, spread between actors and combined/applied in the system	new university courses, new research networks, programmes or institutional establishments/ expansions within the thematic area, attraction of talent
	EE-N or EE-I	<b>Experimentation and Entrepreneurship:</b> fostering test of new technologies, applications or markets; new company establishments	experimentation within existing companies, new companies or spin-outs, foreign companies establishing in the region
	INV-N or INV-I	<b>Investments:</b> new investment	expansionary investments in existing companies, FDI/purchase of companies in the region
	INF	<b>Infrastructure:</b> development of physical research and innovation infrastructure and environments	test/demo facilities, accelerators
System Leadership	POS-N or POS-I	<b>Position:</b> acting as the “voice of the ecosystem”; development of national or international reputation, position or visibility	national coordination responsibility, engagement in international RDI projects
	SP/ISS	<b>Strategic partnership or business/innovation support system:</b> development of collaborative culture, new strategic/longer-term partnerships and more efficient innovation support system	new cross-sectorial connections, improved structures/working practices among innovation support actors
	POL/ST	<b>Policy or strategy:</b> informing and influencing policy or strategy related to thematic area	public procurement, regulations, company or regional development strategy, resource mobilisation and financial allocations

# Cluster Programme Framework of Effects - indicators

Level	Short-term results (1-3 years) Cluster participants <i>(direct/immediate results claimed by cluster participants)</i>	Long term effects (3-10 years) Cluster participants & beyond <i>(indirect/subsequent effects that can be observed over time)</i>
<b>Individual Actor (A)</b>	<ul style="list-style-type: none"> <li>• Introduction of new products/services</li> <li>• Prototypes and patent applications</li> <li>• Articles (academic, other)</li> <li>• New markets and customers</li> <li>• Change in strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue growth</li> <li>• Productivity growth</li> <li>• Employment growth</li> <li>• Export growth</li> <li>• Improved market share/position</li> </ul>
<b>Collaborative Group/Cluster Initiative (C)</b>	<ul style="list-style-type: none"> <li>• # and different types of actors engaged in the cluster initiative</li> <li>• #, types and volume of collaborative activities</li> <li>• New innovation partnerships</li> <li>• Willingness/perceived value of collaborating around a shared strategic direction</li> <li>• Labelling of cluster management quality (ESCA approach)</li> </ul>	
<b>Territorial System (S)</b>	<ul style="list-style-type: none"> <li>• Initial milestones/key events on various "impact pathways"</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge development and dissemination</li> <li>• Experimentation and Entrepreneurship</li> <li>• Attracting investment</li> <li>• Developing physical (R&amp;I) infrastructure</li> <li>• Building reputation and position of the sector/thematic area</li> <li>• Connecting with other system leaders in new strategic partnerships</li> <li>• Influencing policy or strategy</li> </ul>

- Clean energy or climate action
- Equality, diversity and social inclusion
- Health and wellbeing





## Hur kan vi följa systemresultat?

EN GUIDE FÖR VINNVÄXT INITIATIV

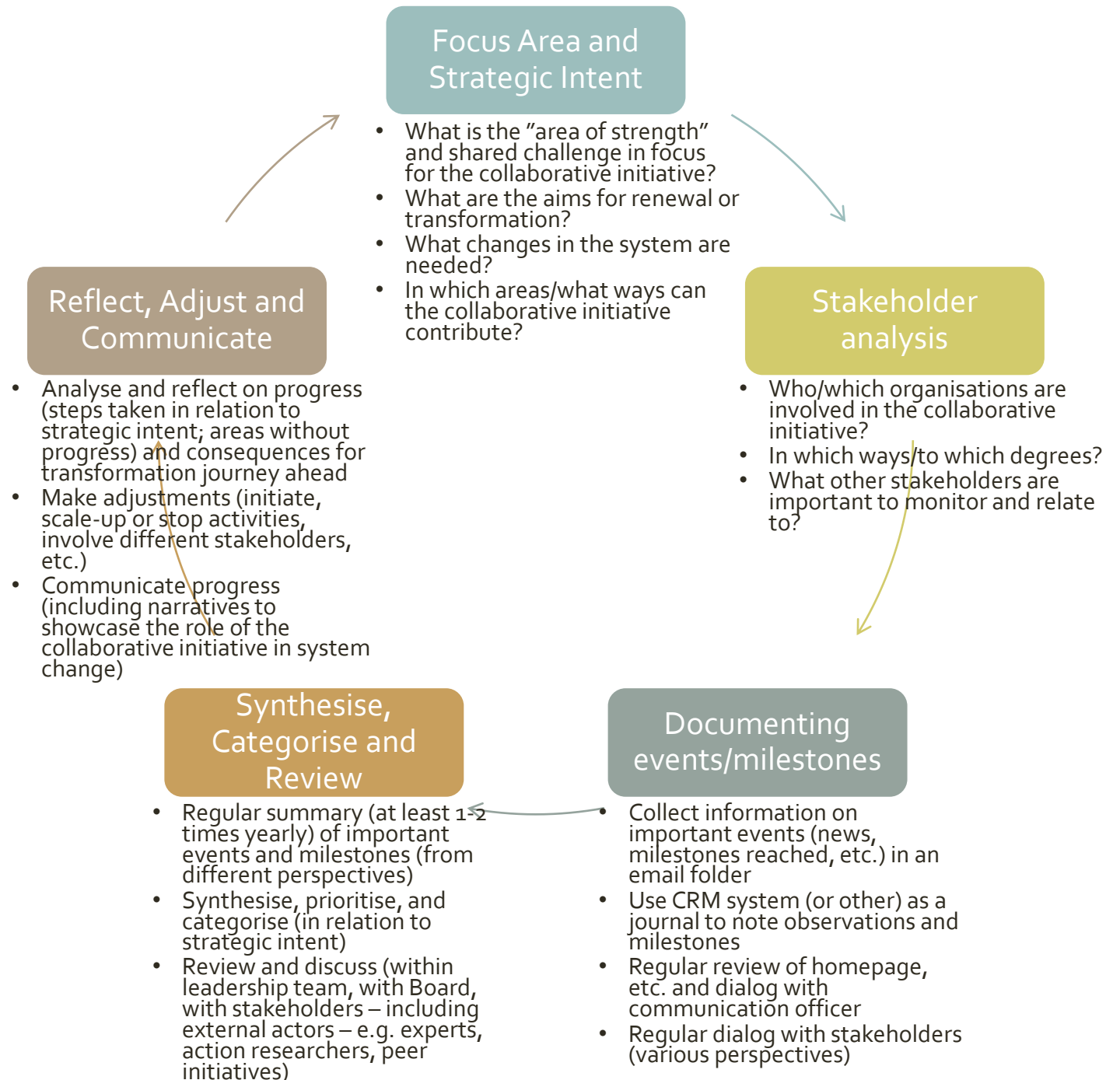
Emily Wise och Vinnväxt Följeforsknätverk | oktober 2019

# A structured approach for evidencing system-level effects over time

- A guide "How can we follow system-level results?" (explaining the why, what and how)
  - Tips on documenting, prioritising, categorising and communicating important events within the regional innovation system
  - Suggestions for support from action researchers
- Embedded in annual reporting – with increased structure and harmonisation
- New possibilities for visualising, analysing and communicating "system result profiles"
  - For individual initiatives
  - For the full portfolio of Vinnväxt initiatives
  - For tracking system-level changes over time

Viktiga händelser i regionen (positiva och negativa)	Beskrivning av betydelsen för målsättningen m.s. Om möjligt ange ekonomiska bidragsförhållning	Har initiativ haft någon roll? (Ja/Nej)	Om ja, kort beskrivning av initiativets roll	Om ja, kategorisering av resultat (se aktivitetsrapporten och till)	Anteckningar	Bidrag till Årsmålet 2018
10 Under slutet av 2018 startades R&D förening upp, där medlemmarna är Västra Stads, Eskilstuna Kommun, Region V, Region S, Föreningen R&G i sin tur Robotdalen AB. Detta möjliggör att ut kan bedriva kommersiell verksamhet och skapa övervärd för att finansiera den samhälleliga delen		Ja	Initiativägare	ÖVR. Skapa förutsättningar för R&D 2.0		ENT, INN-N
13 Bildande av R&D förening och R&D AB	Efter en framgångsrik förhandling med det kinesiska investeringsbolaget ZFR Co Ltd. har de nu investerat 21 Mil i en anskaffning från Robotdalen som kommer att öka på automation. R&D äger 10% av det nya företaget	Ja	Vi såg till att det hände	INN-ENT-N		INN-I
15 Anskaffning av Cobotic AB från Robotdalen	ABB Robotics har lagt fram en avskaffningsplan där de förslår att förbättra mediciner och finansiering av Robotdalen verksamhet 2019-2022. (2-3 Mil/år)	Ja		SPR		INN-I INF
17 ABB Förmål LCI	Under 2018 genomfördes en utvärdering av R&D:s verksamhet, av Region V, Region S, E & Kommunen, Väst Stad. Denna utvärdering lade fram ett antal styrkor hos R&D samt ett antal förbättringspunkter, där de offentliga finansierarna behövde bli mer engagerade i verksamheten.	Ja		SPR		POS POS SPR POL ÖVR

# A structured approach to track system-level milestones (and evidence progress on strategy) over time



# Communicating system-level change/transformation

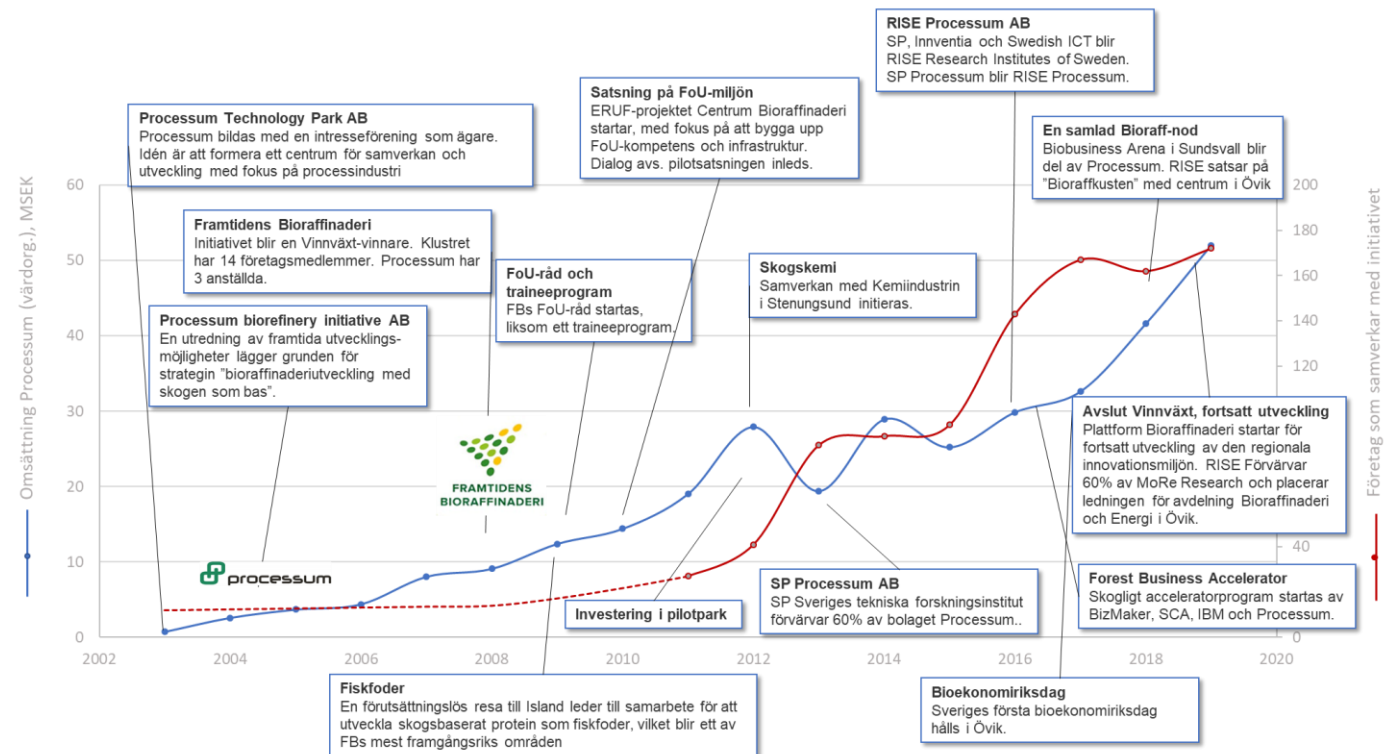
## AUDIENCE?

- The primary audience is the cluster initiative's own leadership and stakeholders
  - To evidence progress
  - To inform strategy
- Other audiences include:
  - Funders
  - Potential investors and partners (to show a track record)

## HOW TO COMMUNICATE?

- Communicate relative to strategic intent (address expectations)
- Use a consistent visual and/or set of 'indicators'
- Leverage 'success stories' to explain the context and relevance of the achievement
- Don't forget to communicate the cluster initiative's role in realising the system effect!

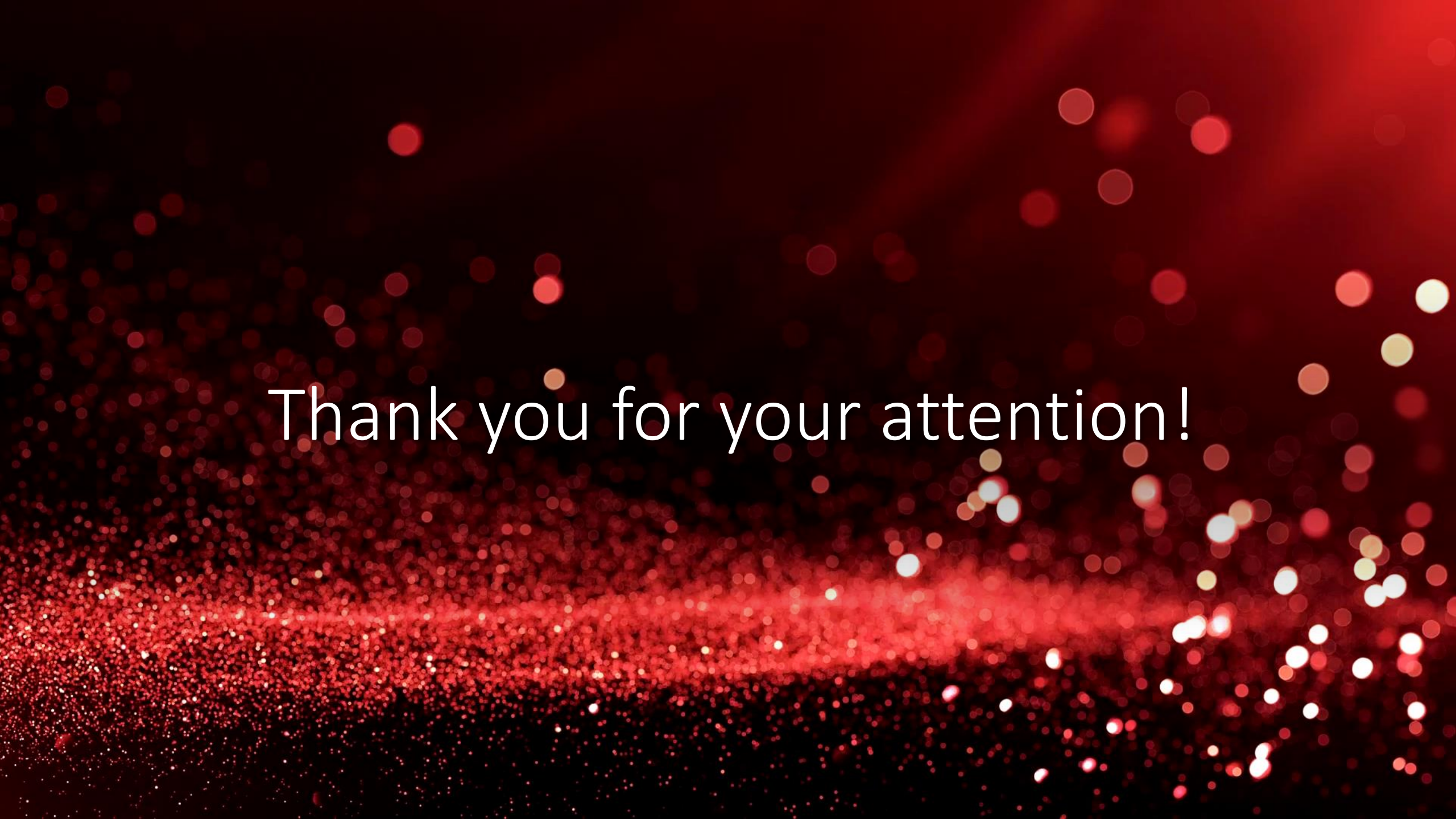
## Future Biorefinery Development Timeline (2003-2020)



# Tracking transformation – some final reflections

- It takes time to affect system-level change
  - Important to follow the process and document the initiative's role over time
  - Tracking critical events help evidence that steps in the desired direction(s) are being achieved (milestones vs. final results)
  - The collection of events (over time) are inputs to broader system-level effects
- Monitoring and evaluation of system level change is 'unchartered territory'
  - Different rationale
  - Different approach for data collection
  - Different timing and mindset
  - Different primary use
- Difficult to communicate system-level effects; initial definition and categories a helpful start
  - To relate to initiative's own strategy
  - To track over time
  - To enable learning between initiatives
- Important not only to gather evidence, but to **use** the evidence...
  - To show progress and "toot one's own horn"
  - To guide strategy development and prioritization of actions



The background features a dark field filled with numerous out-of-focus light spots in shades of red and white. A prominent, horizontal trail of fine, bright red particles or dust extends across the lower half of the image, creating a sense of motion and depth. The overall effect is festive and celebratory.

Thank you for your attention!