

**BUSINESS  
FINLAND**

# Nation-wide impact of **INNOVATIONS**

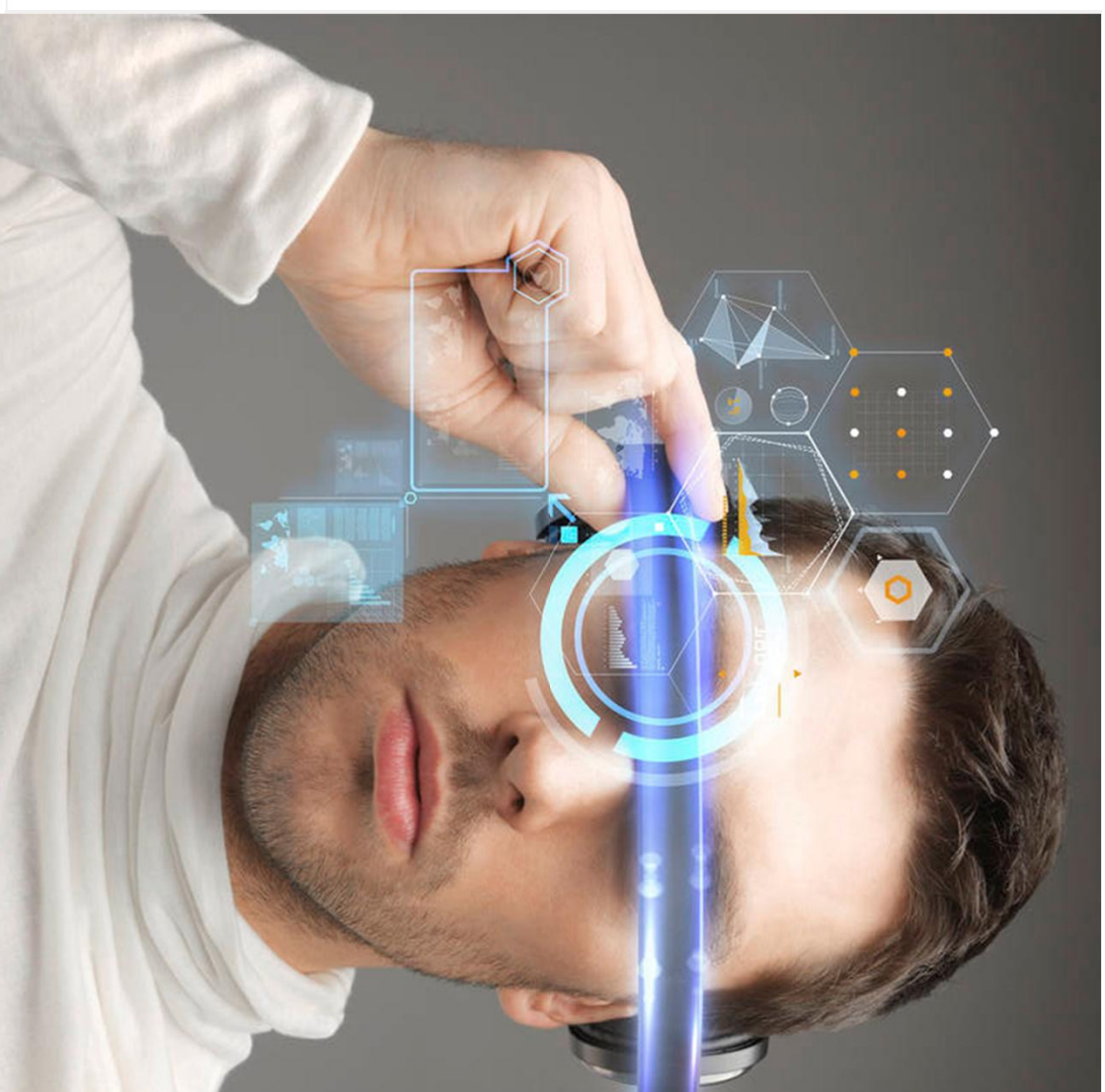
14.3.2019

Hannu Kemppainen  
Executive Director  
Business Finland

AALTO UNIVERSITY / "PUT YOUR HEAD ON A BLOCKCHAIN" –  
STRATEGIES FOR EMPLOYING EMERGENT TECHNOLOGIES FOR  
BUSINESS AND SOCIETY" / 14.3.2019

# NATION-WIDE IMPACT OF INNOVATIONS

1. Business Finland
2. Main drivers of growth
3. Rationalities for government intervention
4. Some examples
5. Closing remarks



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# **Business Finland**





# Business Finland

## CATALYZING NEW SUSTAINABLE GROWTH

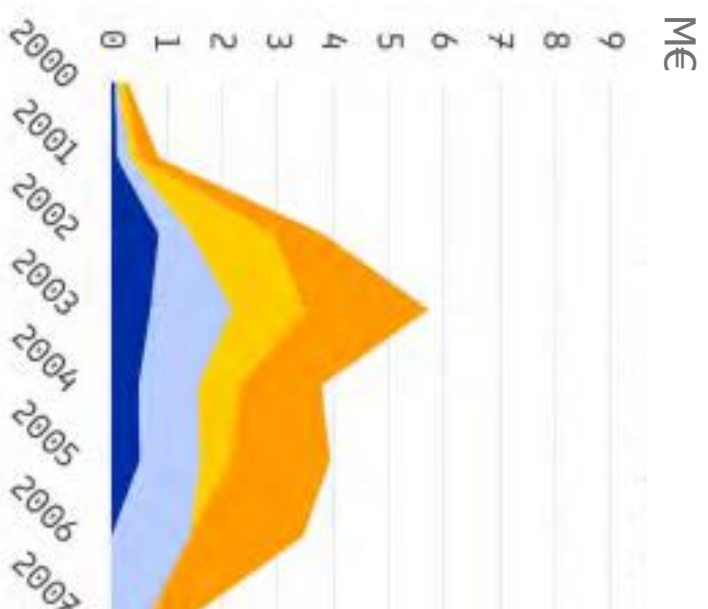
Boosting **innovations** and **exports**  
Attracting **investments** and **visitors**

## TOOLS

- Research and innovation funding
- Advise and coaching
- Domestic and international networks
- Themes and programs

# What to do...?

## Case “Traditional industry”



- Company investment, in-house R&D
- Company investment, university research
- Public project funding, in-house R&D
- Public project funding, university research

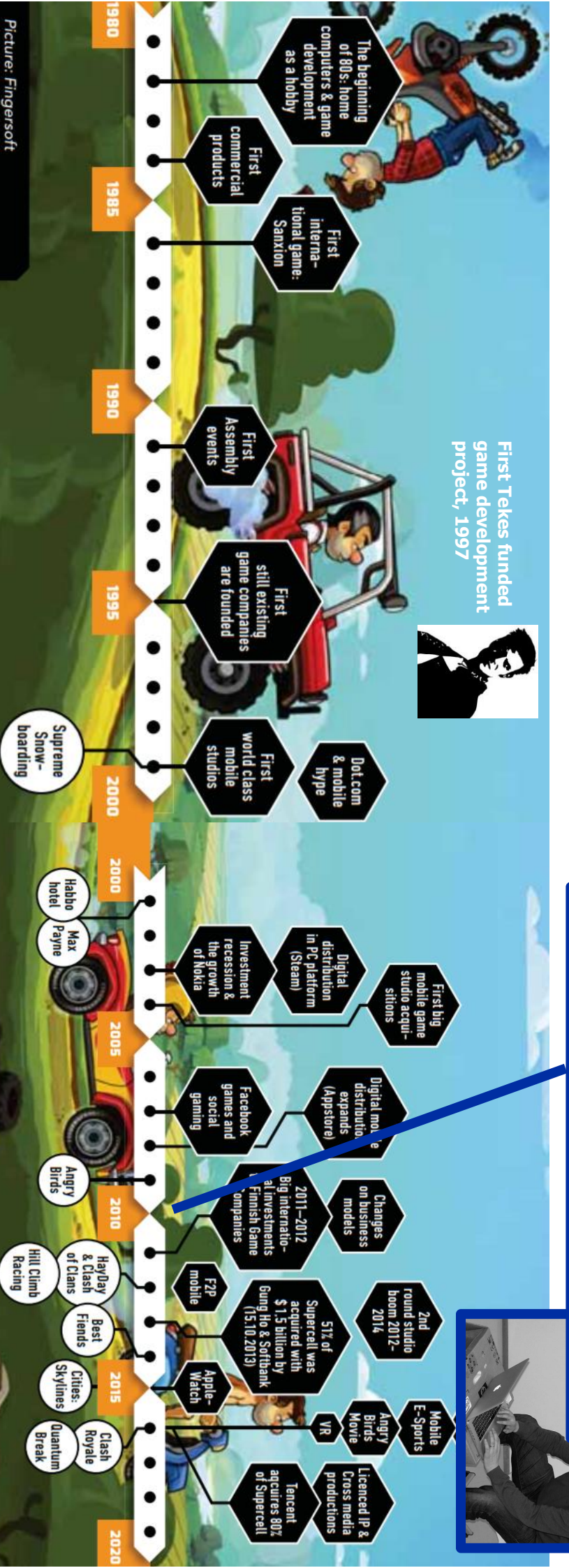




# What to do...?

## Case “Yet another gaming start-up”

“We have some experience on games and business development. Now we would like to try something new. Can You help us?”

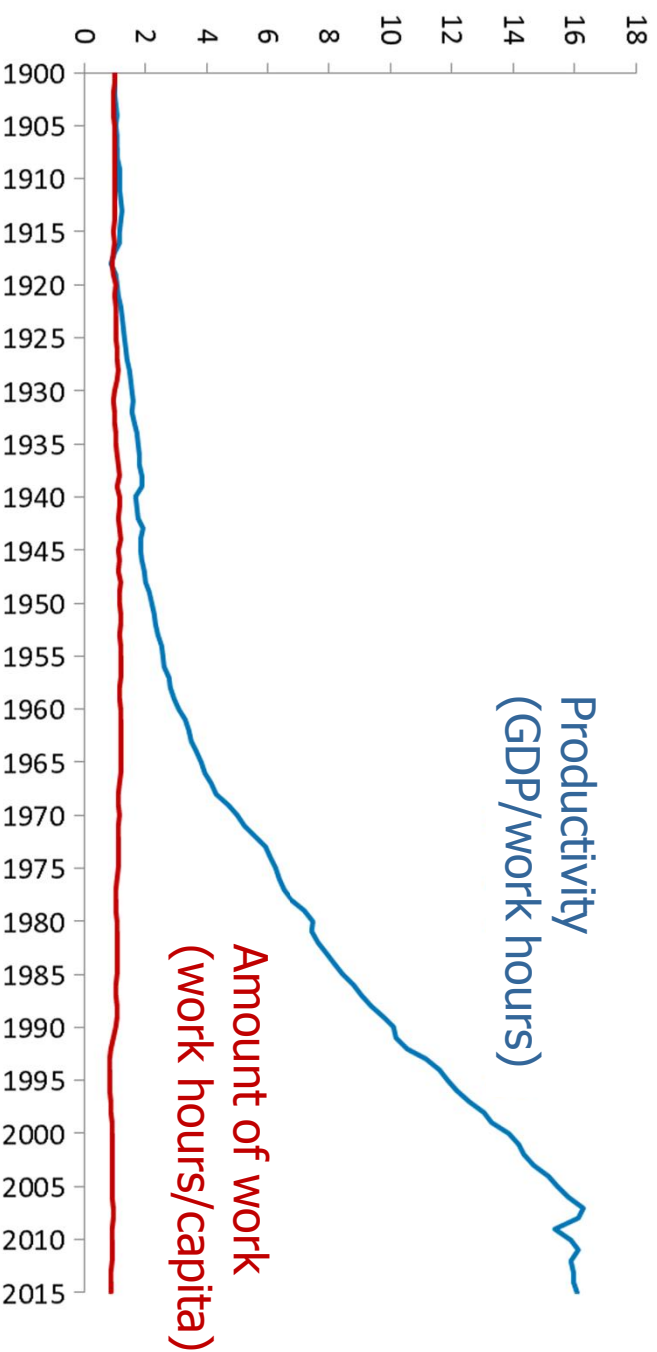


Picture: Fingersoft

# **Main drivers of growth**

# Innovations are the most important source of sustainable economic growth

Components of economic development in Finland 1900-2015



”  
Innovative growth is the only possibility for Finland.

Petri Rouvinen,  
former CEO, ETLA

Source: Professor Matti Pohjola, Aalto University  
Figure: ETLA



# Innovations are the most important source of sustainable economic growth

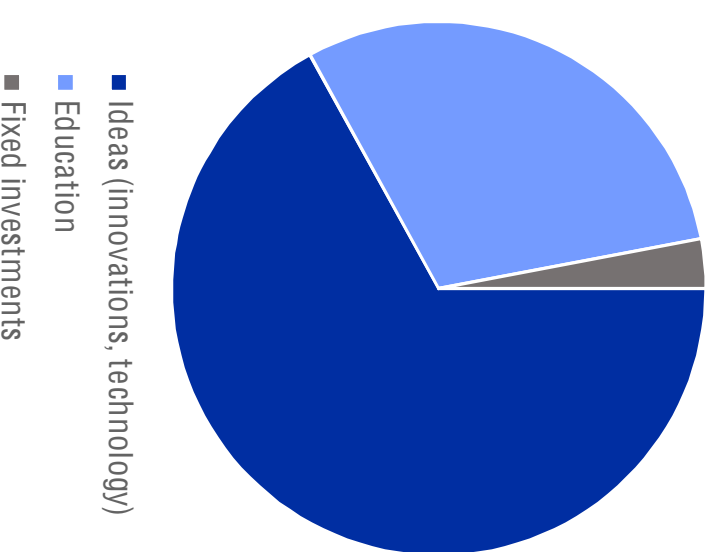
”

The economy grows from new ideas, ie products and production methods, education and fixed capital, ie machinery, equipment and structures.

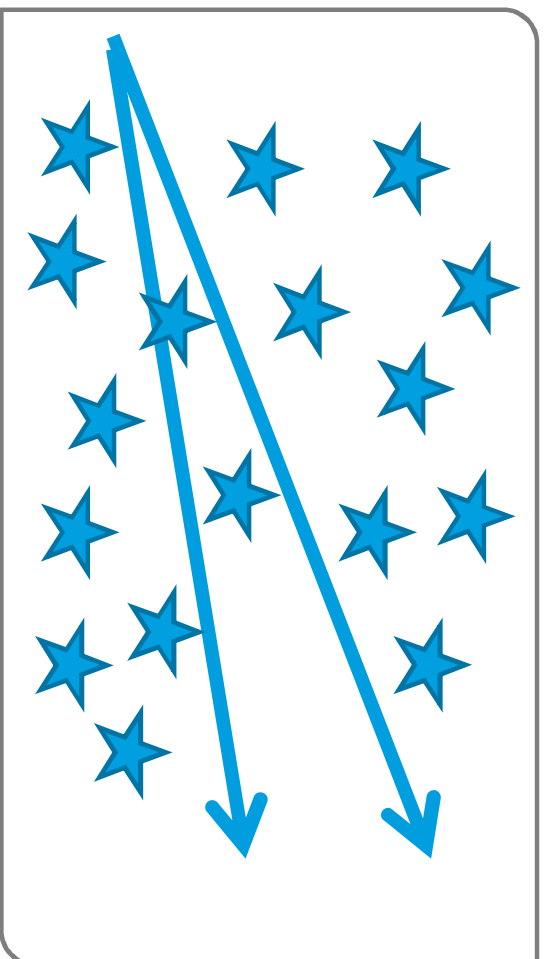
After 1860, 2/3 of the growth was generated by ideas and 1/3 of the education. The share of fixed investments has been small.

Professor Matti Pohjola, Aalto University

Sources of growth



# Productivity development happens through two different mechanisms



We have been good at doing incremental improvements.  
Now we should focus on boosting radical renewal of industries.

# Radical renewal of industries creates new value

## Present cellulose based products



**Paper**  
900-1100 €  
/1000kg

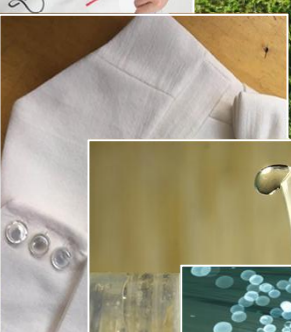


**Cardboard**  
1000-1200 €  
/1000kg

## Future cellulose based products



**Replacing plastics**  
1600-1900 €  
/1000kg



**Replacing cotton**  
2000-6000 €  
/1000kg



**Materials for  
optic fibres and  
medical applications**  
...20000 €/1000kg



# **Rationalities for government intervention**

**Spillovers can occur via:**

**Labour mobility**

**Imitation/demonstration**

**Exporting**

**Competition**

**Vertical linkages**

**Empirical evidence from small open economies**

## **MAIN RATIONALITIES FOR GOVERNMENT INTERVENTION**

### **1. Spillover effects**

- Markets under-invest in knowledge production and knowledge use due to the inherent non-proprietary nature of knowledge and other innovation capabilities

### **2. Market failure**

- Markets fail to allocate capital efficiently to innovation activities and start up companies due to imperfect information needed for risk assessment

### **3. Systems Failure**

- Institutional inertia, structural deficiencies, and lock-in to old technological and business paradigms inhibit efficient knowledge exploration and ecosystem development

# LUXTURRIM – FAST 5G NETWORK ON SMART LIGHT POLES

**NOKIA**

**VAISALA**

**C<sup>2</sup> SmartLight®**

**VT**

**TELESTE**

**exel**  
COMPOSITES

**LAMMIN**  
Windows & Doors

**TTY**

**INDAGON**

**PEREMIX**

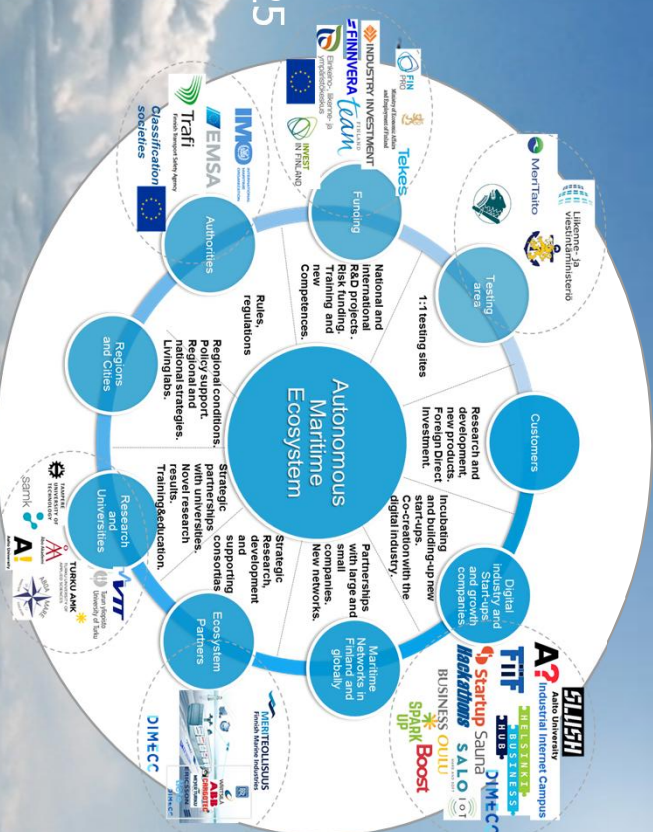
**SITO**

**A?**  
Aalto University

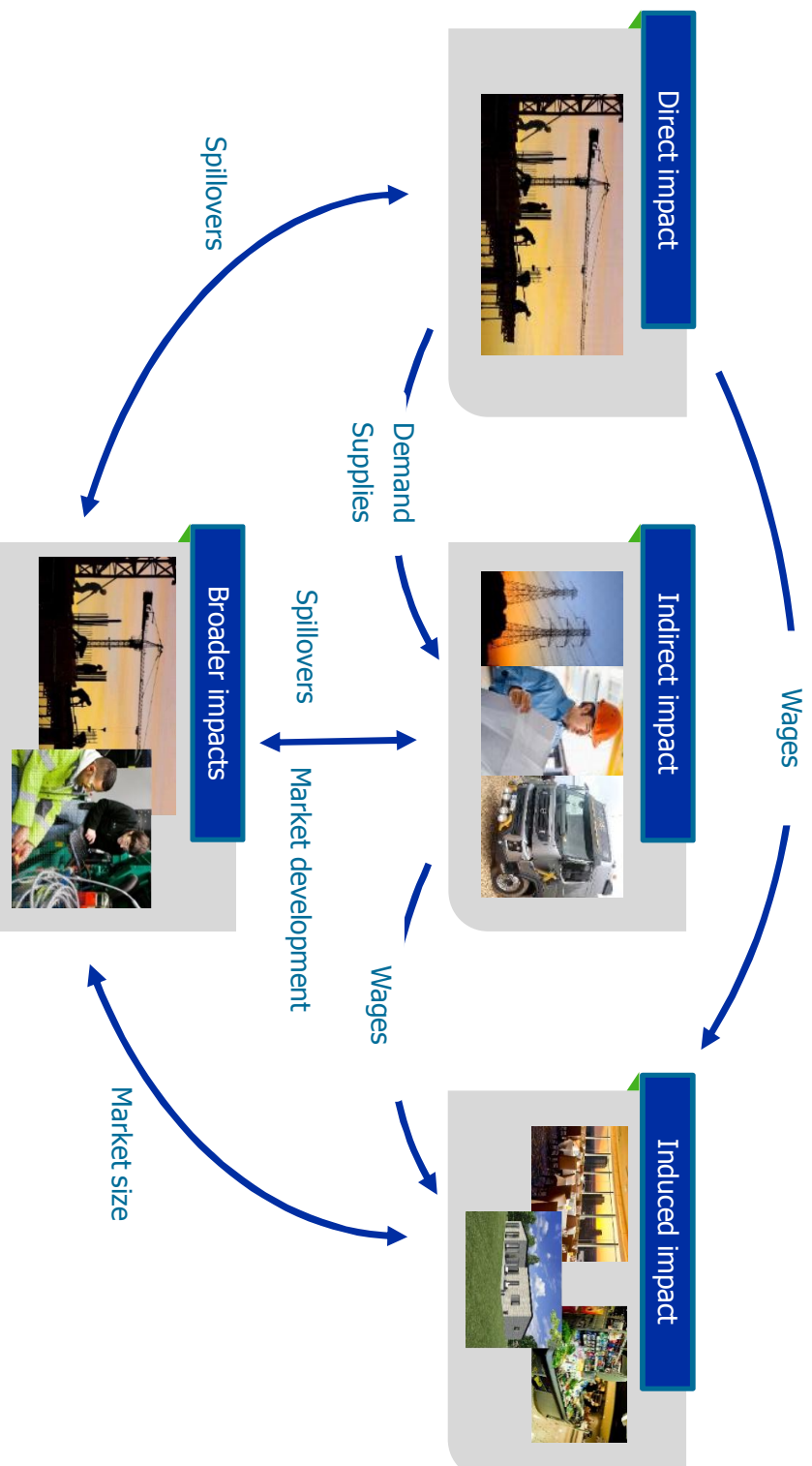


# ONE SEA - ECOSYSTEM FOR AUTONOMOUS SHIPS

Finland aims to operate world's first autonomous ship system in 2025

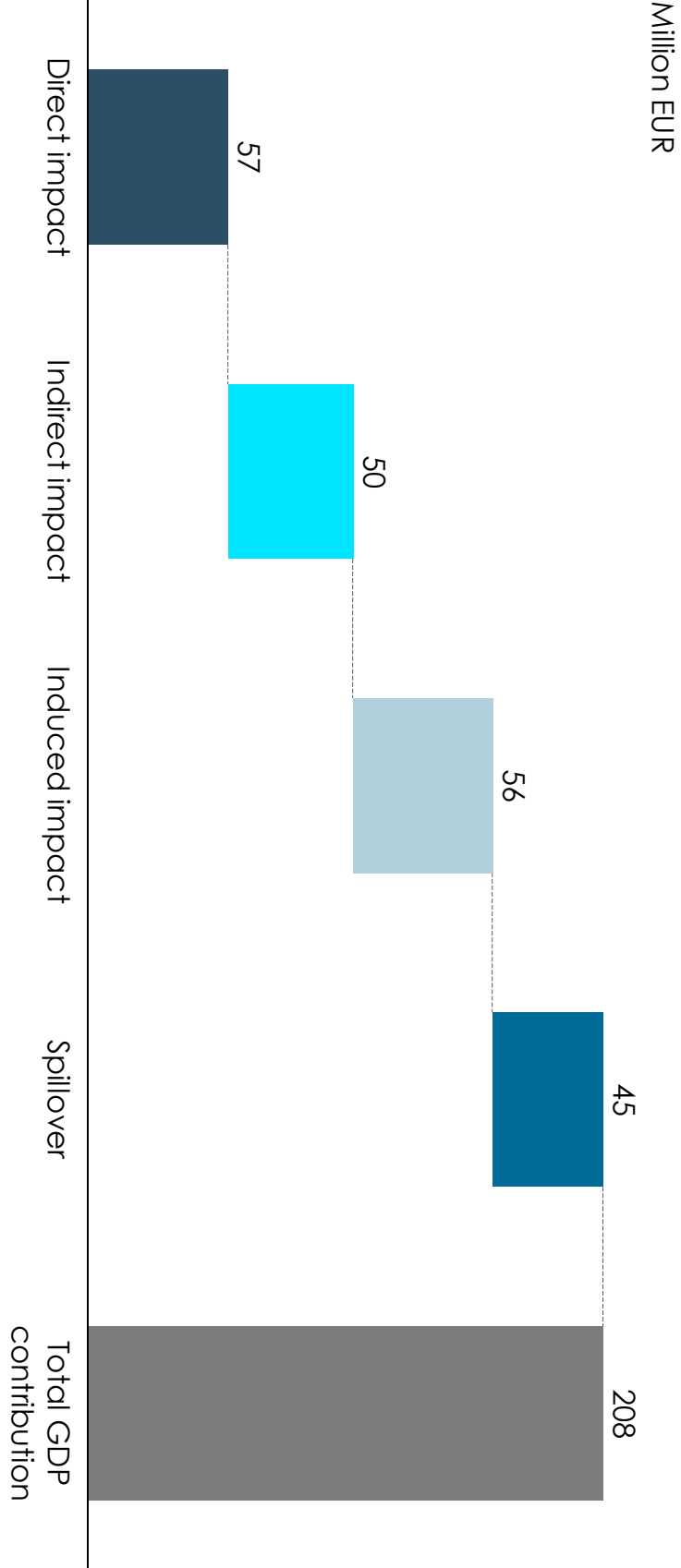


# New innovative businesses revitalise the economy largely through indirect mechanisms



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**GDP contribution from FDI projects where Business Finland was involved, 2016**





# Some examples

# Digital Health Innovation Program

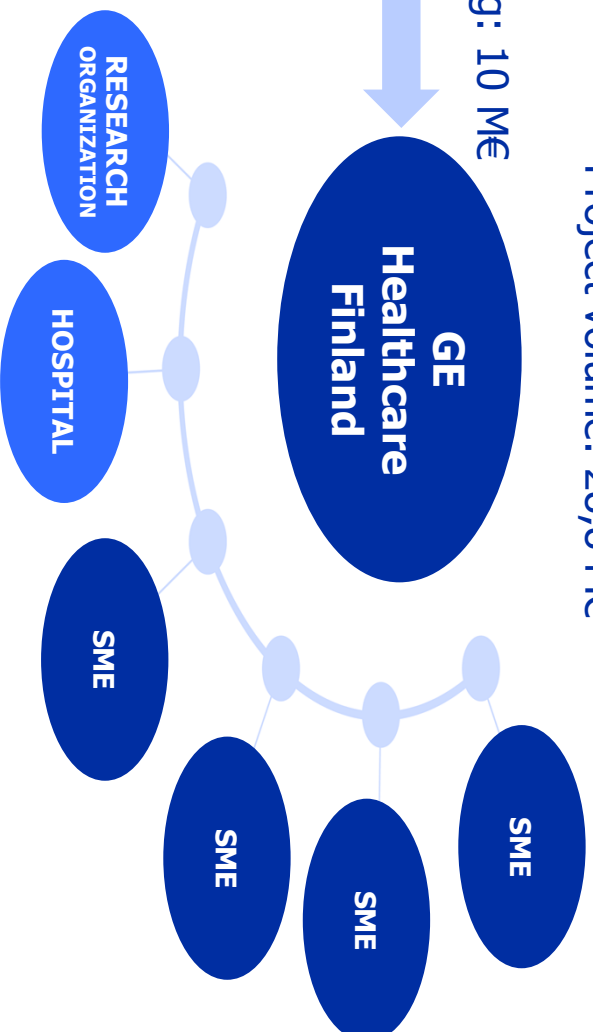


# Digital Health Innovation Program

Project volume: 28,8 M€

Public funding: 10 M€

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Number of subcontractors: 40

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Source: Digital Health Innovation Program,  
Impact Study, Härmälä et. al. 2018



## Benefits for the SME partners



Growth in revenue  
and new jobs



New know-how and  
improved competitiveness



New networks and  
business contacts

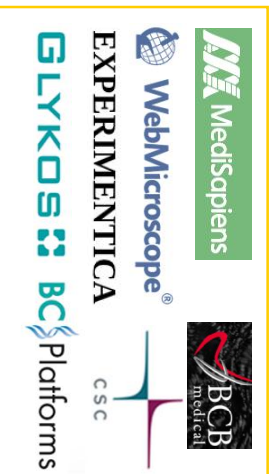


Increased business  
credibility



# HEALTH ECOSYSTEM PLAYERS IN FINLAND

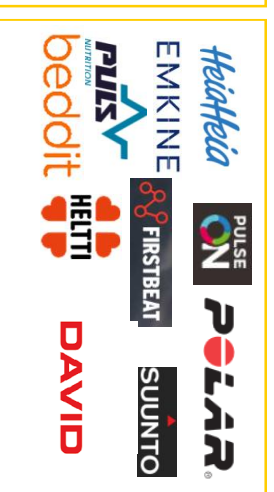
## Data analytics



## Bio, pharma and medical technology



## Prevention



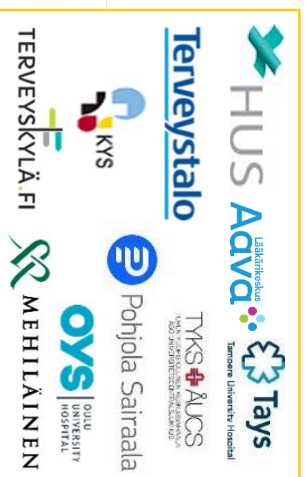
## Test beds and accelerators



## Biobanks and research platforms



## Social and health services



## Diagnostics and imaging



## Remote solutions



## "Technology enablers"



## Multimomics and research

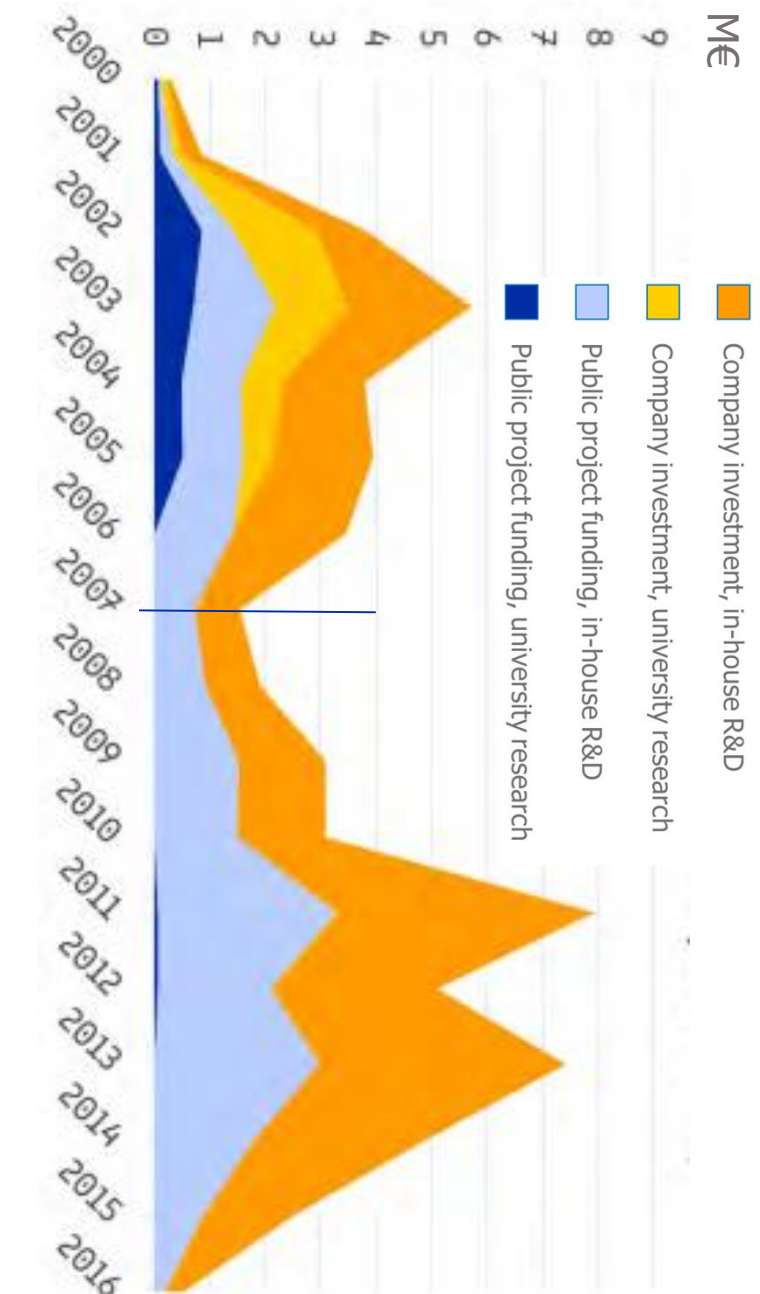


## Education and research



# What to do...?

## Case “traditional industry”



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## Renewable Products

Offers renewable diesel, renewable jet fuel, renewable propane, renewable solvents, and raw materials for bioplastics.

Capacity 2.7 million tons per year.

Our renewable products help customers to reduce their carbon footprint by up to 90%.

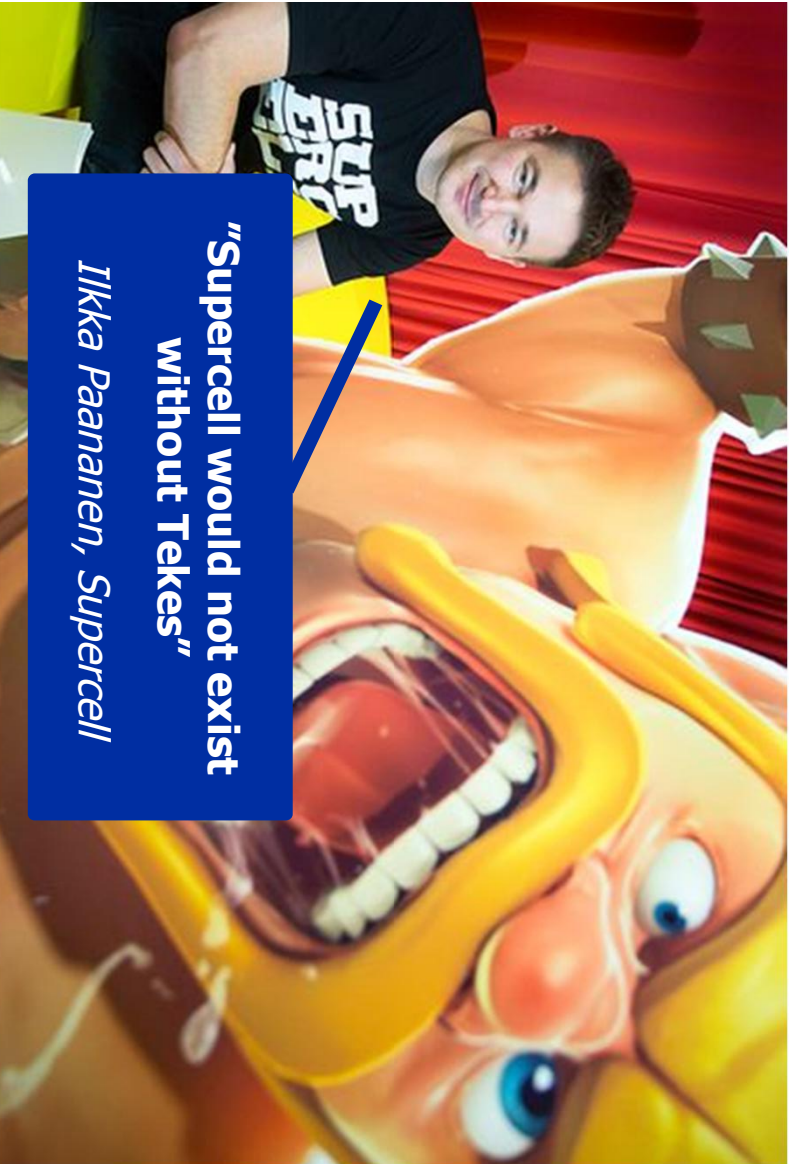
MEUR	2018	2017	2016
Revenue	3,241	3,243	2,690
Comparable operating profit	983	561	469
Operating profit	899	476	518
Net assets	2,018	1,863	1,811
Comparable return on net assets (RONA)	52.4	30.2	25.9
Capital expenditure and investments in shares	159	122	104



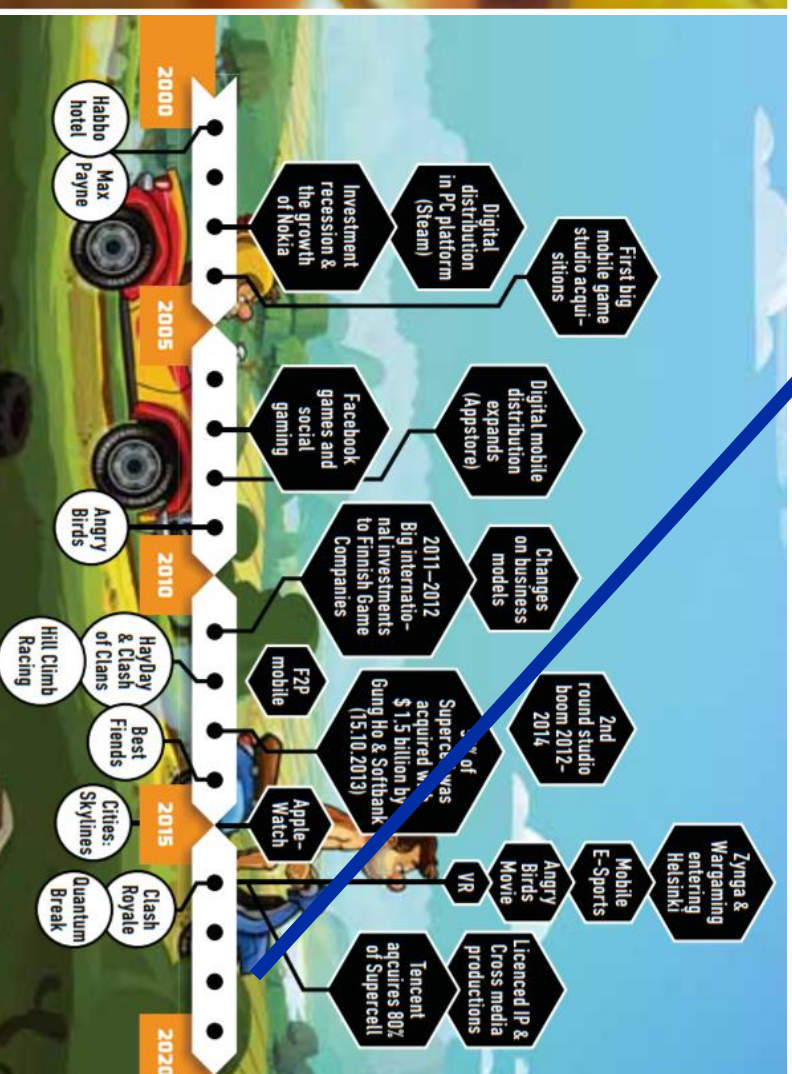
# What to do...?

## Case “Yet another gaming start-up”

Supercell and its employees together with Kahoon 3 Fund have paid more than 2 000 M€ in taxes between 2012-2018, in Finland



“Supercell would not exist without Tekes”  
*Ilkka Paananen, Supercell*





# **Closing remarks**

**BUSINESS FINLAND VISION**

# FINLAND DEFINING THE FUTURE

Together, we make Finland the most attractive  
and competitive innovation environment,  
where world class success stories are created

