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# Innoveren in alle tijden

Van gestructureerde chaos tot een  
gecontroleerde uitvoering



# Innovation at IMEC

- Who is IMEC?
- New program definition: case study
- A sustainable innovation process: from ideation to realization

# IMEC 1984 – 2008 - 2009 ...a bit of history

## 1984

Established by state government of Flanders in Belgium

Nonprofit organization

Initial investment: 62M€

Initial staff: ~70

## 2008

One of the largest independent R&D organizations in its field, worldwide

Revenue (P&L) : about 260M€ (includes 42 M€ grant from Flanders government)

17% government/state funding

Staff: over 1600

Worldwide collaboration with many partners

## 2009

We celebrate 25 years IMEC



# Mission statement

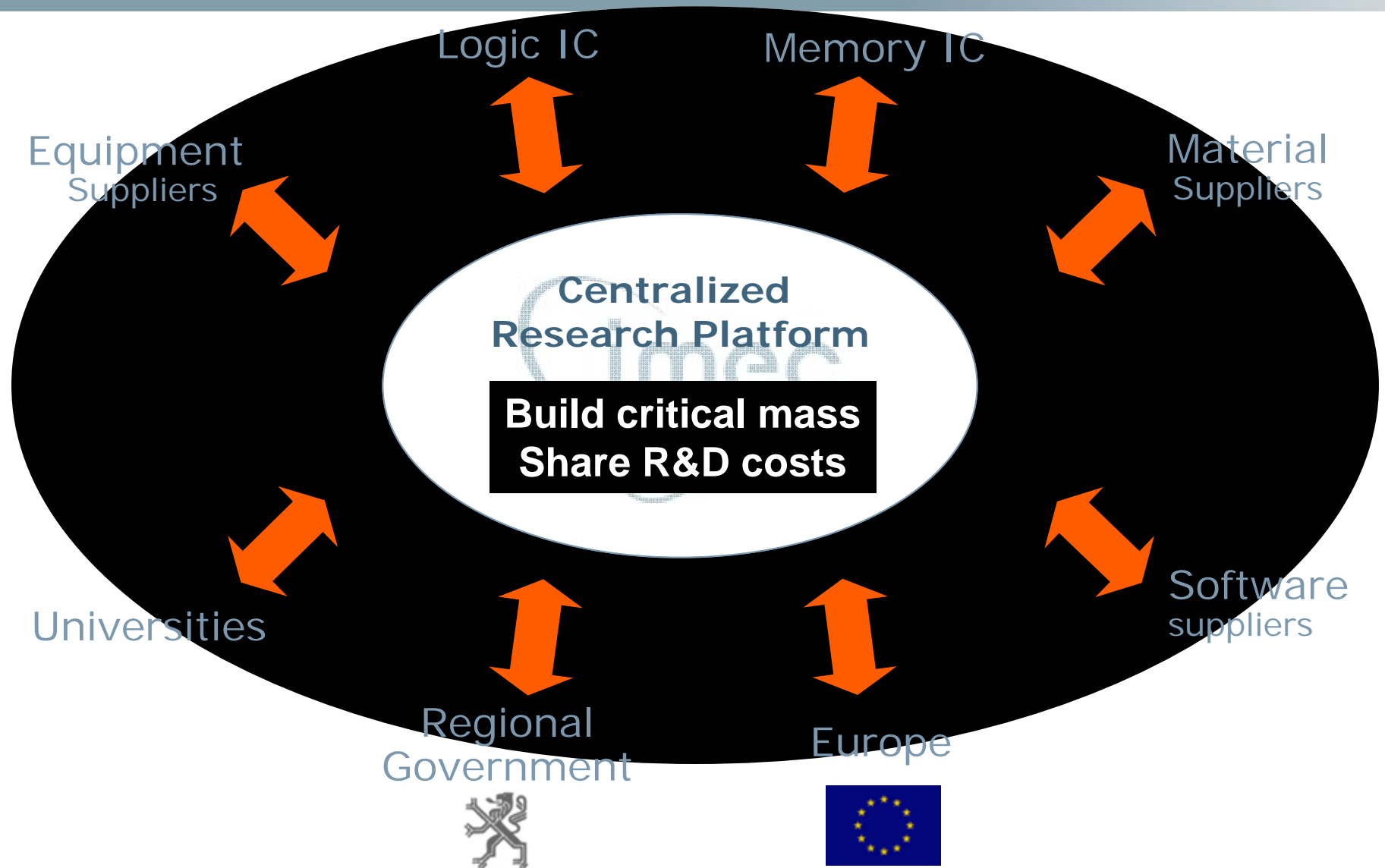
To perform research and development, ahead of industrial needs by 3 to 10 years, in microelectronics, nanotechnology, design methods and technologies for ICT systems

## Performance criteria

- **being a worldwide center of excellence**  
(total contract revenue, publications, invited papers)
- **being excellent in exploratory work**  
(number of Ph.D.s, projects and publications with universities)
- **with impact on local industry**  
(new spin offs, collaborations, training, interaction with local SME's)



# Partnering for Cost-effective Research



# Innovation at IMEC

- *Who is IMEC?*
- New program definition: case study
- *From Ideation to realization*

# New program definition: case study

- **Nomadic Embedded Systems (2007)**
  - “Industrial impact through academic excellence”
  - 2 departments: Wireless and digital design
  - 1 global program offering: Apollo
    - Several subprograms
    - Long history
  - Goal: sustainable profitable growth
    - Assessment of current activities: introduction of the Stage-Gate® process
    - Need for new ideas: introduction of the Fuzzy front end of innovation

Great results just don't "happen"

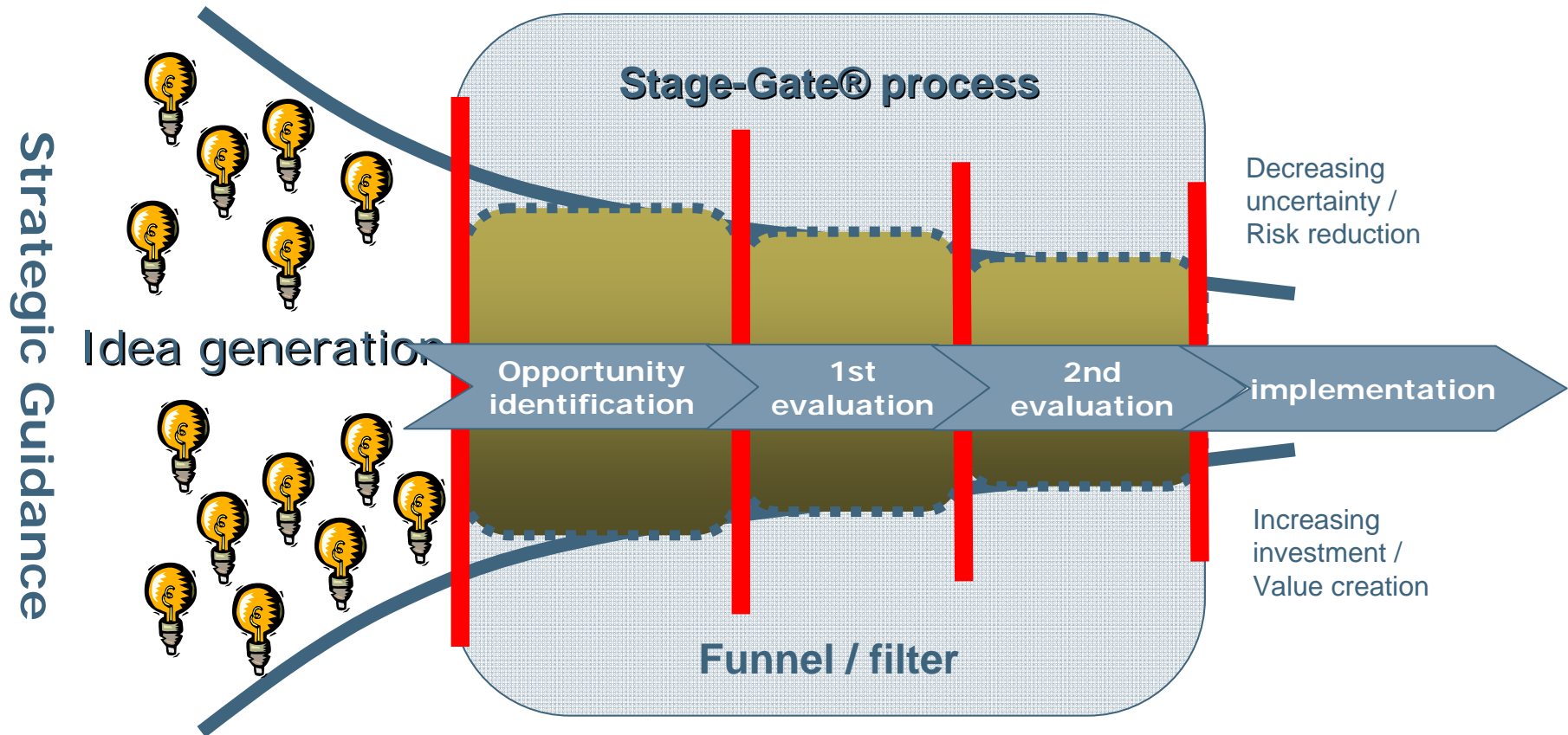
They are planned, based on analysis, strategic targeting and careful execution

They are orchestrated by talented, disciplined and dedicated individuals

# Stage-Gate® process: general aspects

- A stage-gate process aims to funnel and filter many ideas into successful product and/or market implementations
- Each step in the process is meant to reduce uncertainty and risks, while the effort (and also the possible value creation) is increased
- After each stage with a set of predefined deliverables comes a decision point or gate (with gatekeepers judging by predefined criteria) which serves as a Go/No-go for moving the project into the next stage
- A stage-gate process should have a limited set of stages, otherwise it would result contra-productive with respect to time-to-market aspects

# Stage-Gate® process implementation 2007-2008



- Waterfall based  
... but our approach is iterative and incremental

# Program selection stages and activities



## **Inputs**

- 3 pages template
- elevator talk (bierviltje)
- Presentations + meeting reports

## **Participants**

- Strategy team
- Strategy board

## **Activities / criteria**

- Assess idea according to high level criteria:
  - Customer
  - Business
  - Innovation
  - Realization
- Vote on attractiveness and potential of idea

## **Outputs**

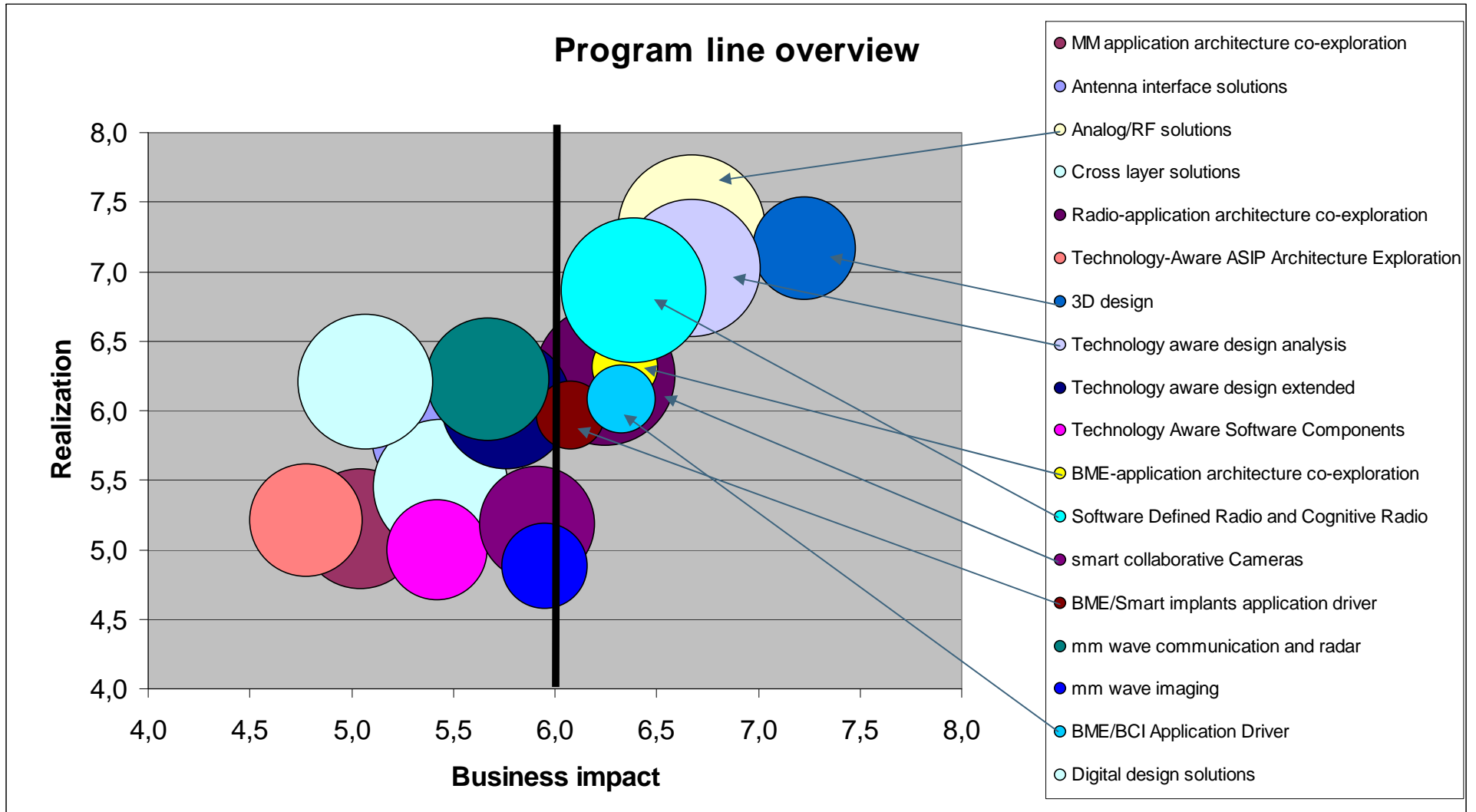
- Selection of idea for next stage and prioritization among other ideas
- Attention areas for next phase
- Owner for next stage

# Example of a “bierviltje”

# “Tiger” teams

- **Status**
  - Owner per topic is identified: end responsibility until Gate 3
  - Inner circle: strong commitment, participates active
  - Involved: consultancy approach
- **Multi-discipline, cross-division**
- **To extend with people from other departments**
  - Business
  - Technology
  - Market

# Rating overview



# Program selection stages and activities



## **Inputs**

- Draft version of strategic text
- Previous stage output

## **Activities / criteria**

- Detailed description of technology, research value
- High level market study with clear indication of business potential
- Clarify USP
- Critical success factors
- SWOT analysis
- Timeline
- Showstoppers?
- Optional dating
  
- Vote on attractiveness and potential of idea (2<sup>nd</sup>)

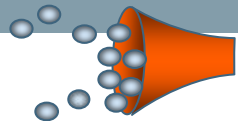
## **Outputs**

- Go/Bo go for next stage and prioritization among other ideas
- Owner for next stage
- Attention points for next phase

## **Participants**

- Strategy team
- Strategy board
- Technology experts)
- Business/market experts)

# Current Pipeline (status 16.03.2008 )



Identified opportunity



Stage 2



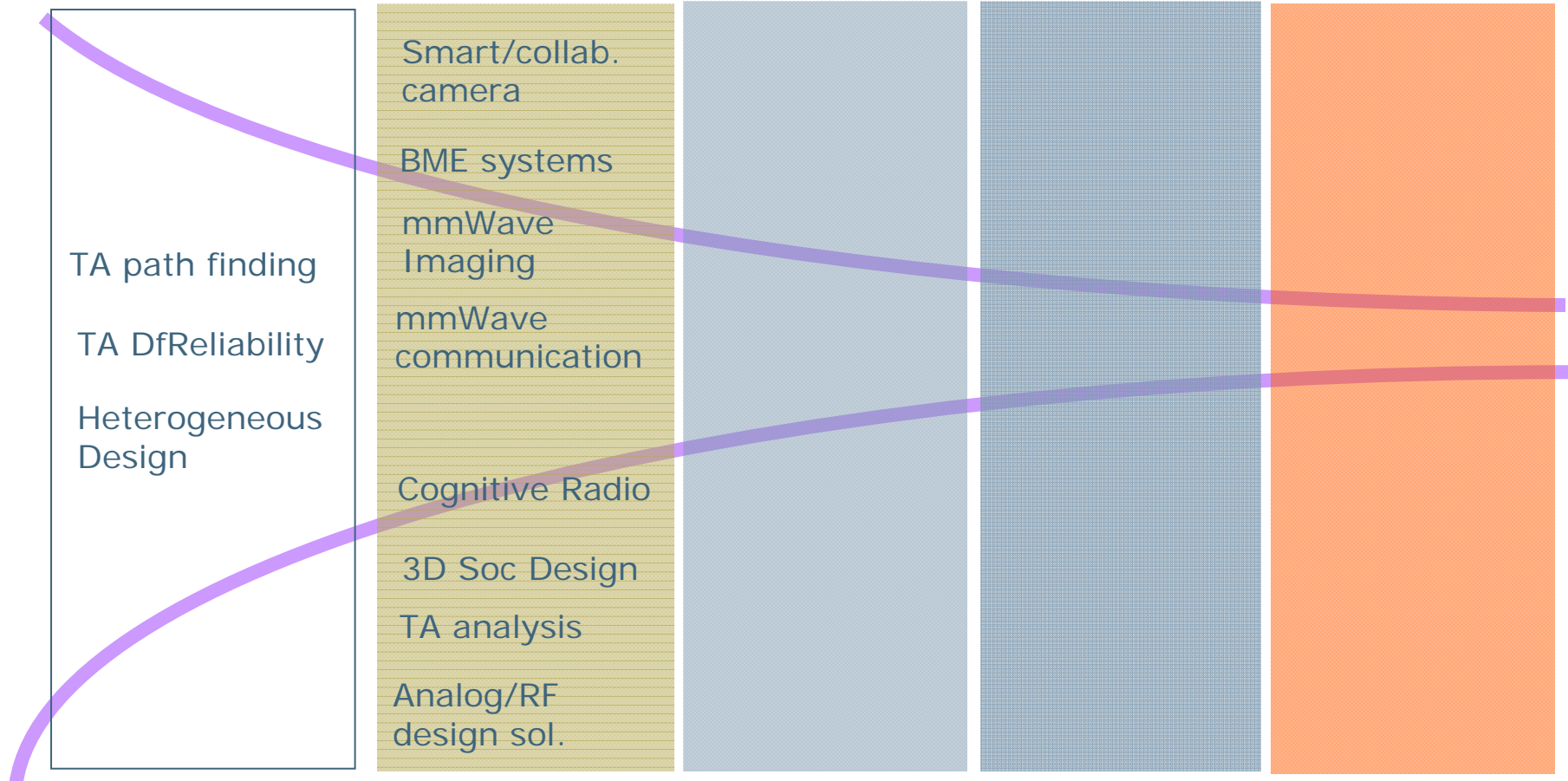
Stage 3



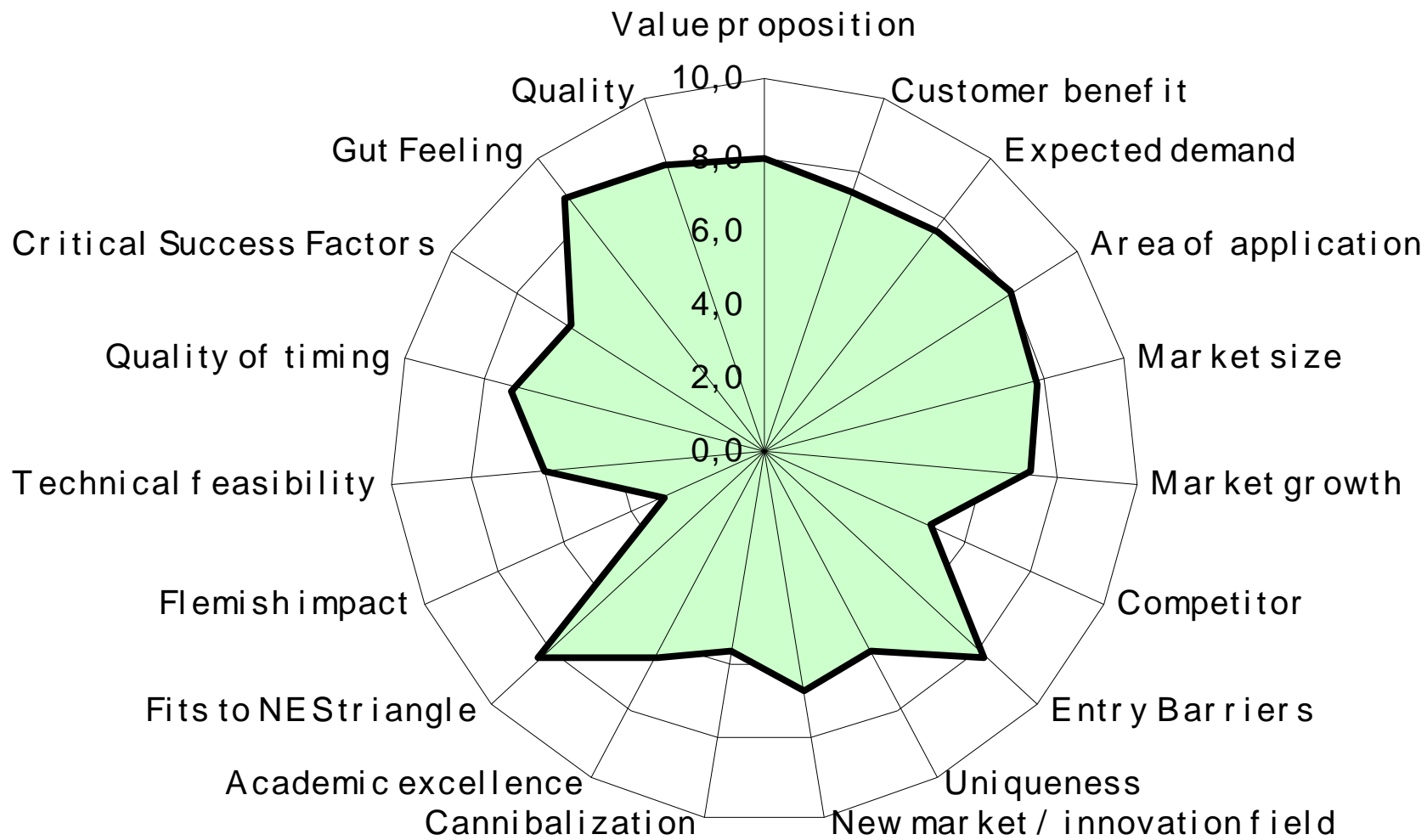
Ready for execution



In execution



# Example of an assessment result



# Program selection stages and activities



## **Inputs**

- Presentation
- Draft version of strategic text
- Previous stage output

## **Activities / criteria**

- Customer visits (friendly/lead) and/or external experts consultation
- Detailed market information
- Financial plan
- Go to market strategy
- Organization: staffing, competencies, partners
  
- Vote on attractiveness and potential of idea (2nd)

## **Outputs**

- Go/Bo go for next stage
- Draft business plan

## **Participants**

- Strategy team
- Strategy board
- Technology expert(s)
- Business experts)

# Business plan outline

## 1. Executive summary

## 2. Product description

- Current portfolio
- Description of new product
- Development status of product
- IPR status
- SWOT analysis
- Customer value, Unique Selling Proposition
- Critical Success Factors
- Risks and assumptions
- High level roadmap

# Business plan outline

## 3. Market and competition

- Target market segments, market size and growth
  - Eco system
  - Key customers
- Positioning vs. competition
- Short/long term market developments (timeline)

## 4. Marketing strategy

- Pricing model
- Marketing plan, incl. sales forecast
- Go to market model (eco system, cost and strategy of acquiring customers)

# Business plan outline

## 5. Execution plan

- Business model
  - IIAP, TT, spin-off
- Staffing requirements
  - Organization
  - Required expertise
  - Quantity (incl. timeline)
- Partnerships, outsourcing, purchasing issues
- Implementation schedule
- Risks

## 6. Financial plan

- Financial projections
- Break even analysis
- Financing required
  - Funding
  - Pre-investment

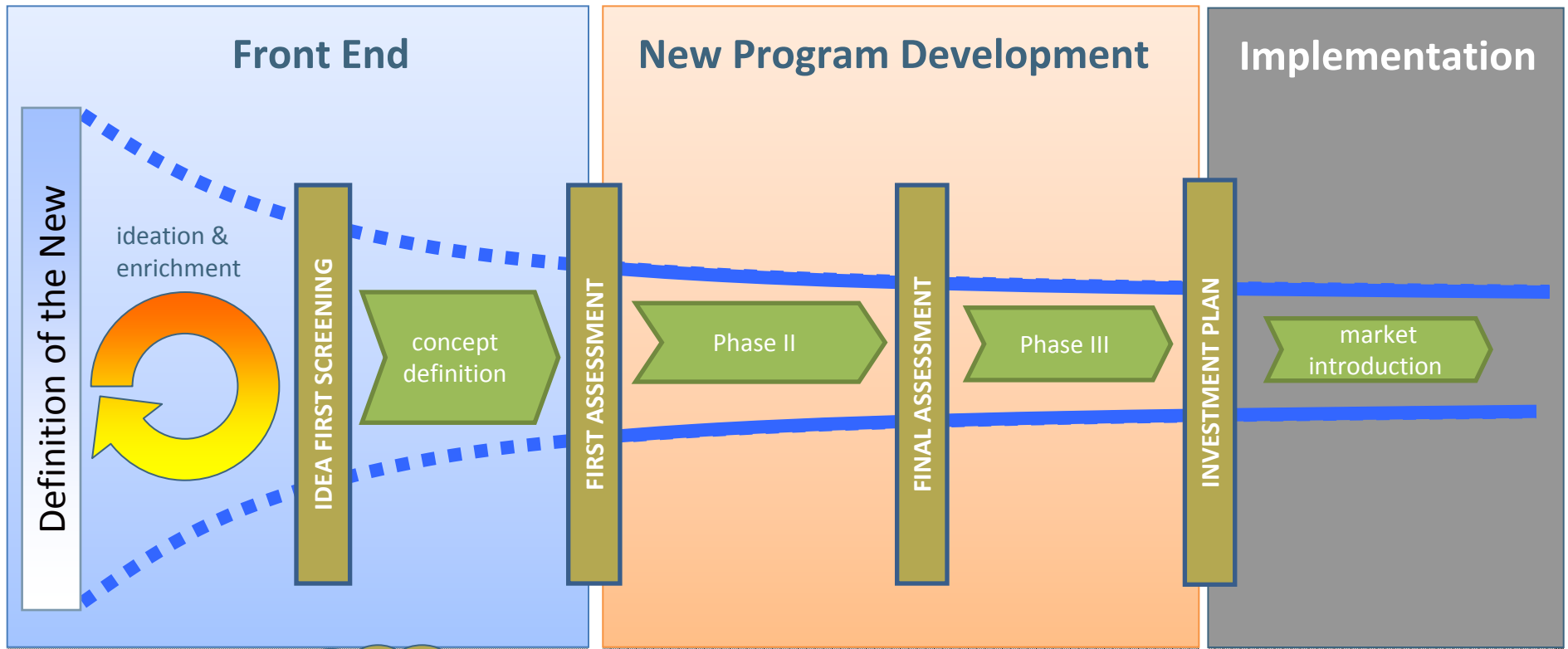
# Result of this approach

- Program offering changed (NES)
  - Digital design technology fade out
  - Wireless: continuation of existing research
  - New programs are under development
    - Link with process technology (joint offering)
    - New ideas are selected and in preparation for execution
  - Yearly review of the business plan implementation
- 2 new innovative programs per year
  - Introduction of the fuzzy front end of innovation
  - Multi-discipline
- Deployment in the rest of the organization

# Innovation at IMEC

- *Who is IMEC?*
- *New program definition: case study at NES*
- From Ideation to realization

# Managing Innovation: Finding the right balance between structure and chaos.



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