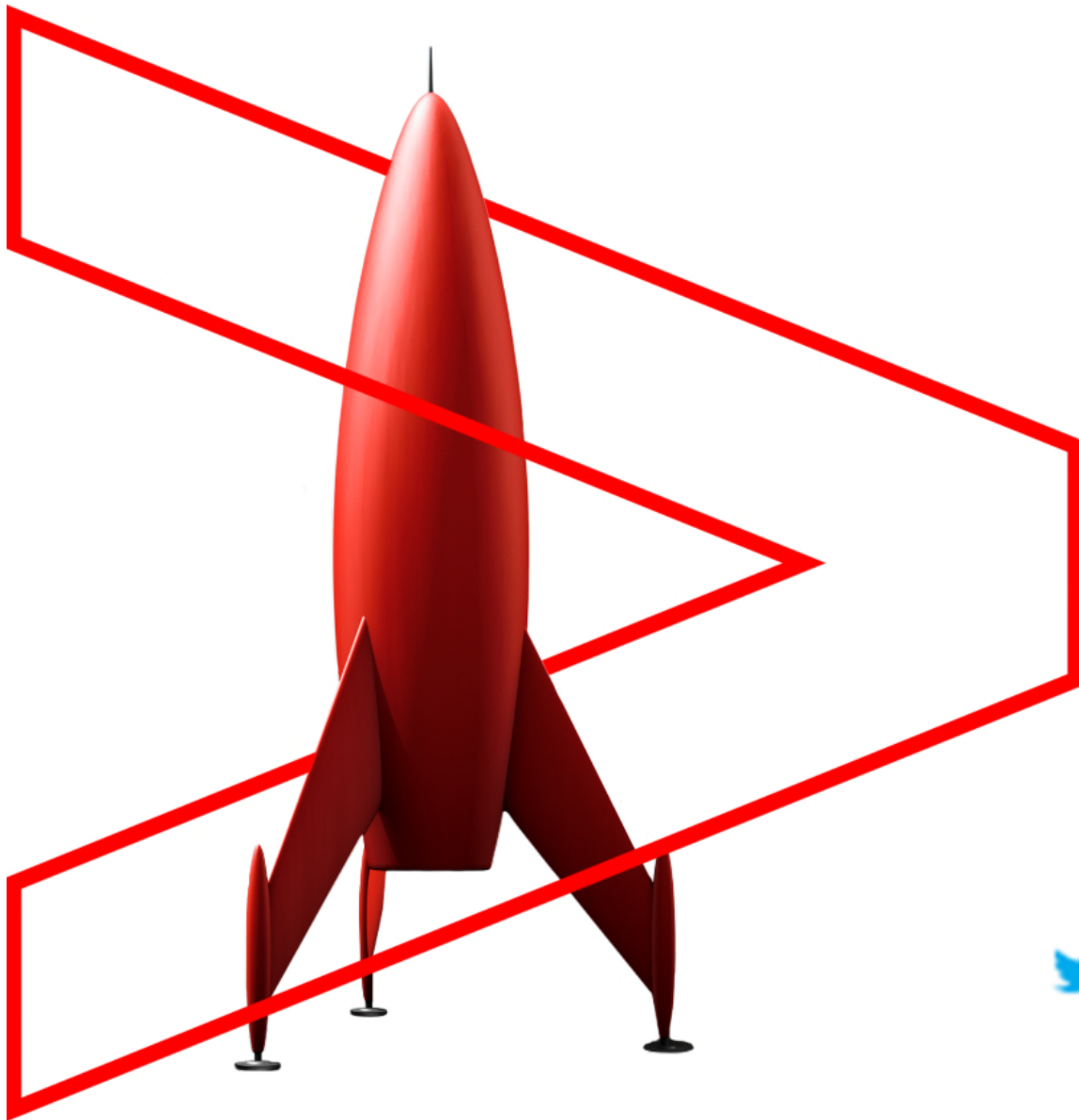




Key trends in the Life Science

 @DaniloMazzara

TODAY'S AGENDA

1. KEY TRENDS FROM A GLOBAL PERSPECTIVE
2. SELECTED DYNAMICS IN ITALY
3. CONCLUSIONS

MACROECONOMIC DRIVERS ARE LEADING TO AN UNPRECEDENTED HEALTHCARE INDUSTRY CHANGE

1. SOCIO-ECONOMIC DISRUPTION

- HC rising faster than GDP
- Silver Tsunami and Chronic disease
- Outcomes-Based Reimbursement



2. SCIENTIFIC DISRUPTION

- Patent Cliff
- Rise of generics globally
- Rise of specialized medicine



3. DIGITAL DISRUPTION

- Digitization (Cloud, IoT, Wearables)
- Changing Consumer (Mobile/ Social/ Gamification)
- Big Data (Adv Analytics, Genomics, AI)

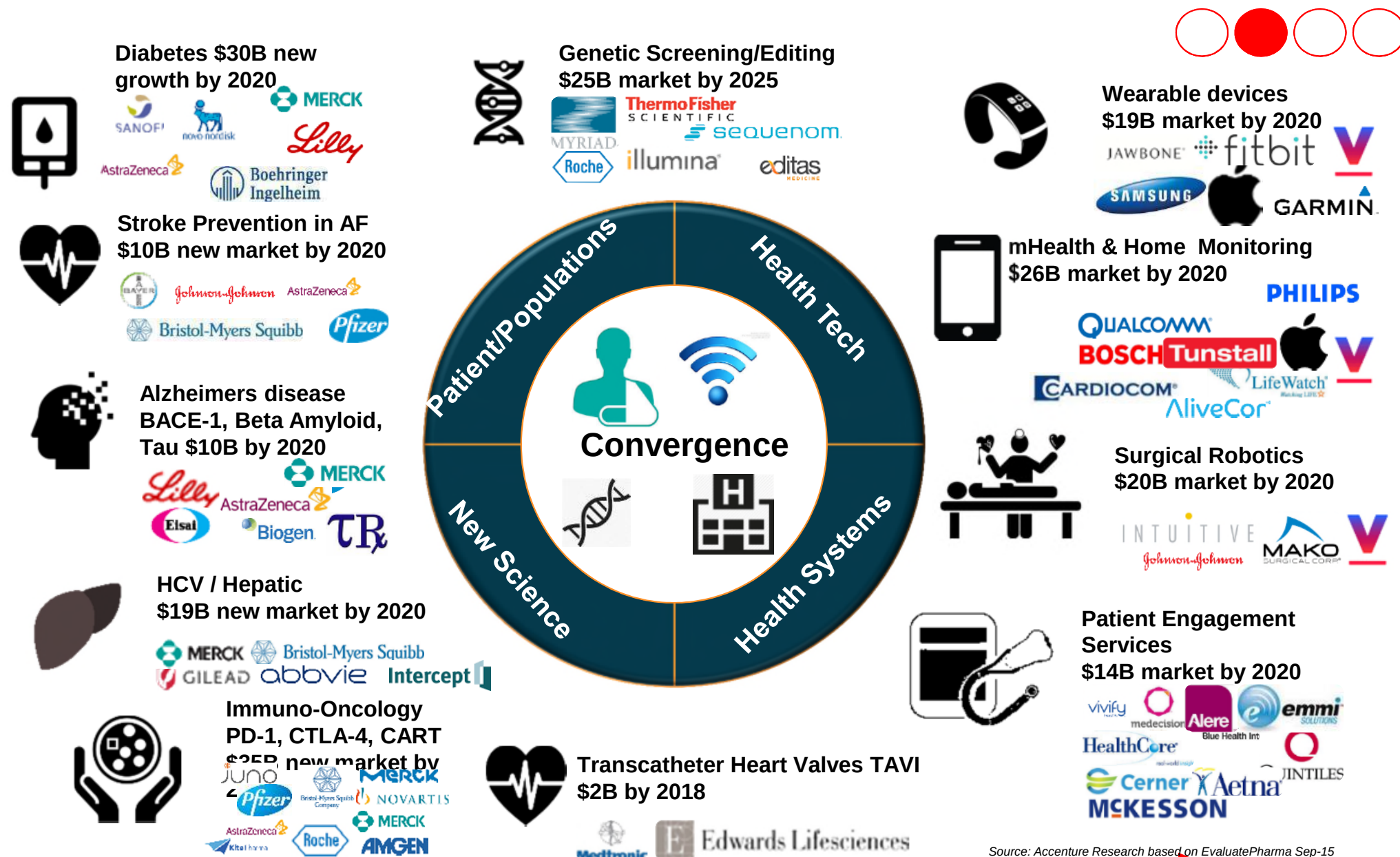


4. BUSINESS MODEL DISRUPTION

- The outside-in enterprise
- M&A & New Business Models
- The pivot to the patient



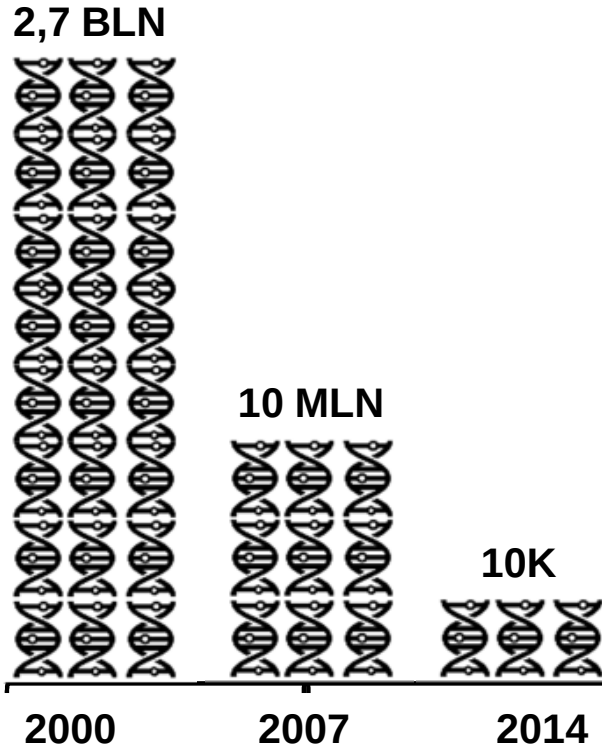
INNOVATION DRIVING FUNDAMENTAL CHANGE TOWARDS PERSONALIZATION



EMERGING DIGITAL TECHNOLOGIES ARE THE KEY ENABLERS, THEIR CONTINUOUS COST DOWNSIZING MAKE THEM CHEAPER AND AFFORDABLE



DNA Sequencing cost



Key emerging Technologies

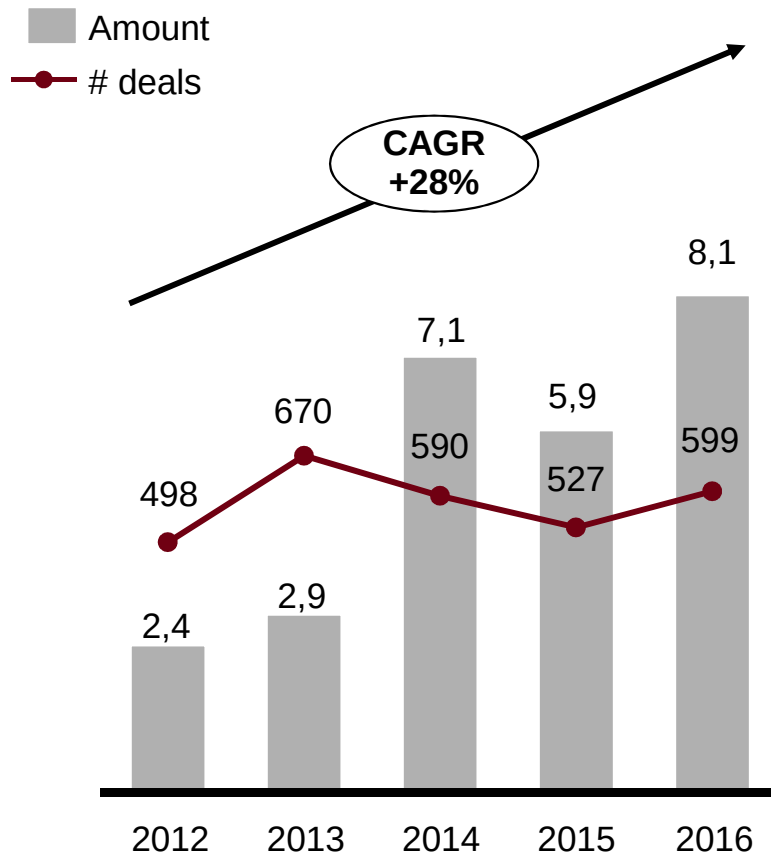
- **Robotics/AR:** Automating and Assisting Surgery/training
- **3D Printing:** Personalized and in the field custom manufacturing
- **Medical IoTs:** Connected devices, continuous monitoring
- **AI/Machine Learning:** Clinical Decision support, Accelerated R&D
- **Genetics:** next generation, low cost high accuracy LS tools
- **Bioelectronics:** Small implantable devices targeting specific organs



THE RISING OF DIGITAL HEALTH COULD GENERATE MARKET DISRUPTION

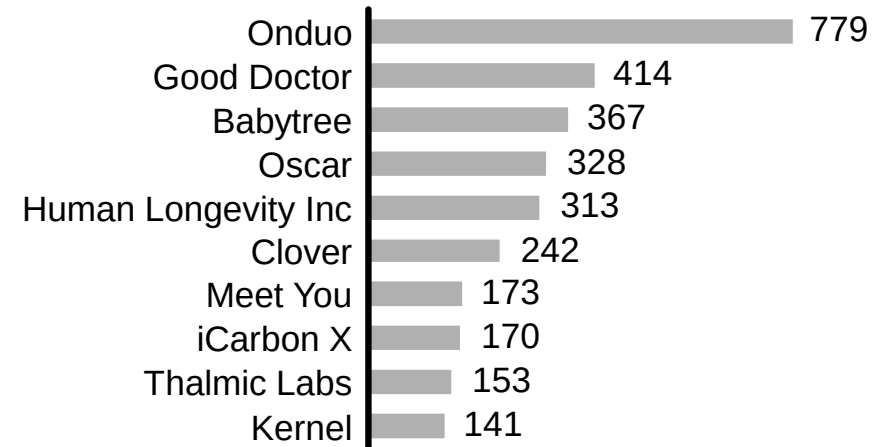


VC investments in Digital Health (\$ bn - # deals)



Source: Elaboration of StartUp Health Insight

Top 10 best funded digital health companies in 2016 (mln \$)



Corporate Venture Capital with focus on Digital Health (selection)



- 500 mln \$ CVC from Merck for Digital Health startups
- 100 mln \$ CVC driven by Novartis and Qualcomm
- GE Healthy imagination CVC focus on imaging and diagnostic

THANKS TO DIGITAL IMPROVEMENTS MANY NEW THEMES ENTRED INTO THE MARKET



Digital Health main themes

Patient Experience

~\$2,8.3B



The access to and purchase of healthcare solutions is easier than ever as the whole healthcare ecosystem becomes more consumer focused



Insurance and services

~\$1B



Powerful software allow data tracking and analysis of potential patients to offer data-driven, customized services, such as medical insurance



Personalized Health

~\$0.8B



Genomic powered technologies revolutionize medicine through advanced clinical services lowering both risks and costs for the end user



Medical Device

~\$0.7B



Smart objects, VR/AR visors, connected sensors and all other digital electronic medical instruments are proliferating widely and rapidly throughout the medical community.



Workflow

~\$0.6B



Technology is enhancing the patient/health care relationship through clinical evidence and advanced analytics to make better clinical therapy decisions for doctors and hospitals



Big Data/Analytics

~\$0.5B

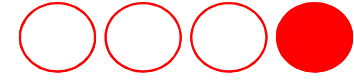


Healthcare system benefits a lot from getting valuable insight from very large data sets to offer predictive and prescriptive analytics

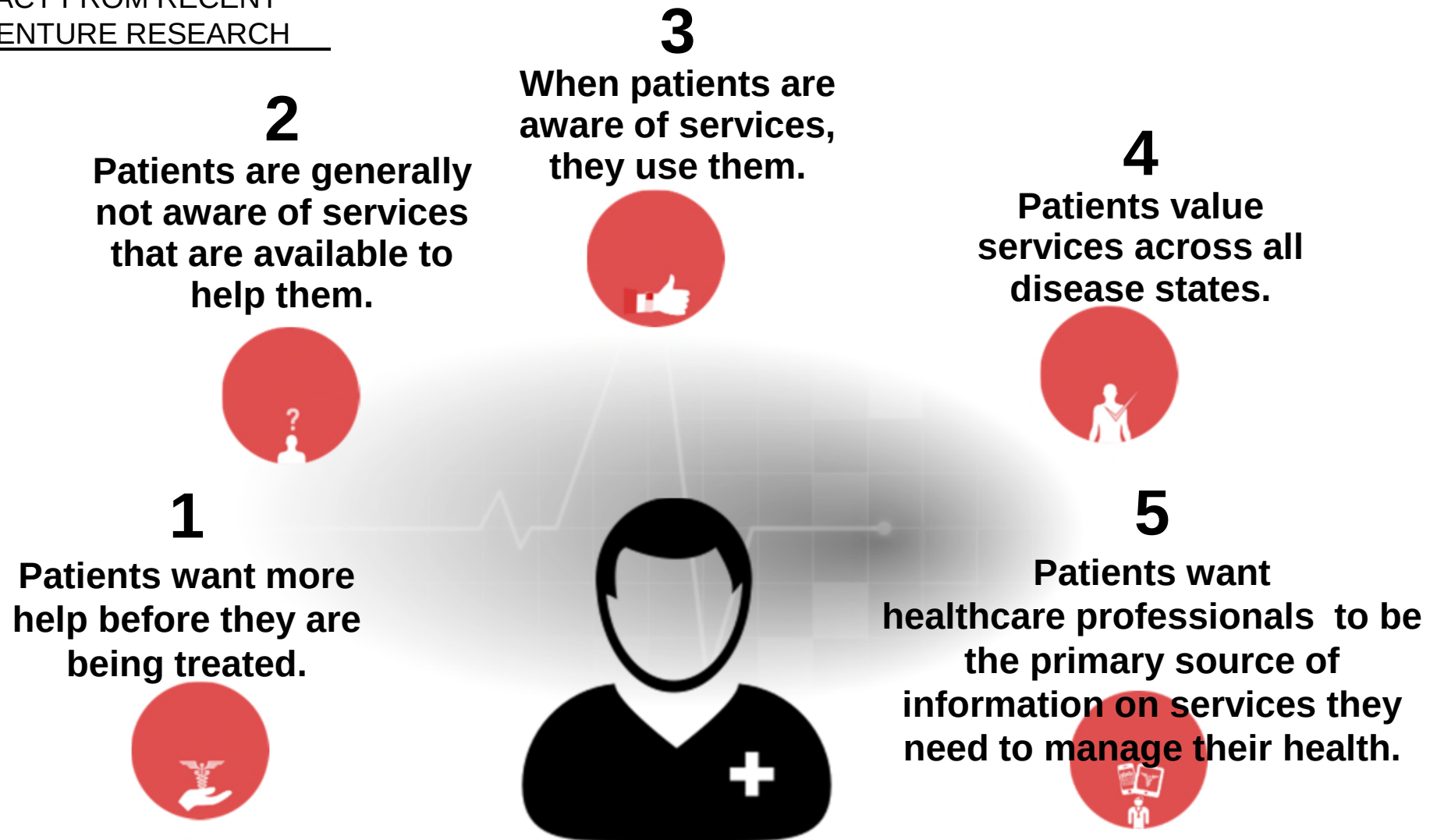


Population Health (~\$0,4B), Clinical Decision Support (~\$0,3B), Research (~\$0,3B) and E-Commerce (~\$0,3B) complete the list of the 10 most active digital health market in 2016.

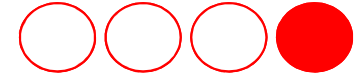
ACCORDING TO OUR RESEARCH PATIENT CENTRICITY REMAINS THE KEY TOPIC AND OFFERS HUGE OPPORTUNITIES TO START AN INNOVATION JOURNEY



EXTRACT FROM RECENT
ACCENTURE RESEARCH



DESPITE OF THE RISING OF NEW TECHNOLOGY HEALTHCARE PROFESSIONALS REMAIN THE PRIMARY SOURCE OF INFORMATION



Primary source of information preferred by patients



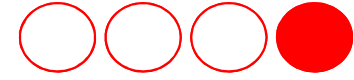
Note: a small number of respondents answered 'don't know' (not shown).
Base: All (10,000) and all wanting one point of contact (8,688)

Primary source of information preferred by patients (country details)

	Healthcare Professionals	Others (including insurance and pharma companies)
Total	85%	10%
US	88%	7%
Brazil	88%	9%
France	87%	10%
Germany	71%	25% (insurance 19%)
UK	86%	5%

Insurance companies mentioned more in Germany

NEW BUSINESS MODEL DRIVEN BY NEW TECHNOLOGIES AND NEW CUSTOMER NEEDS WILL EMERGE ALSO IN THE HEALTHCARE



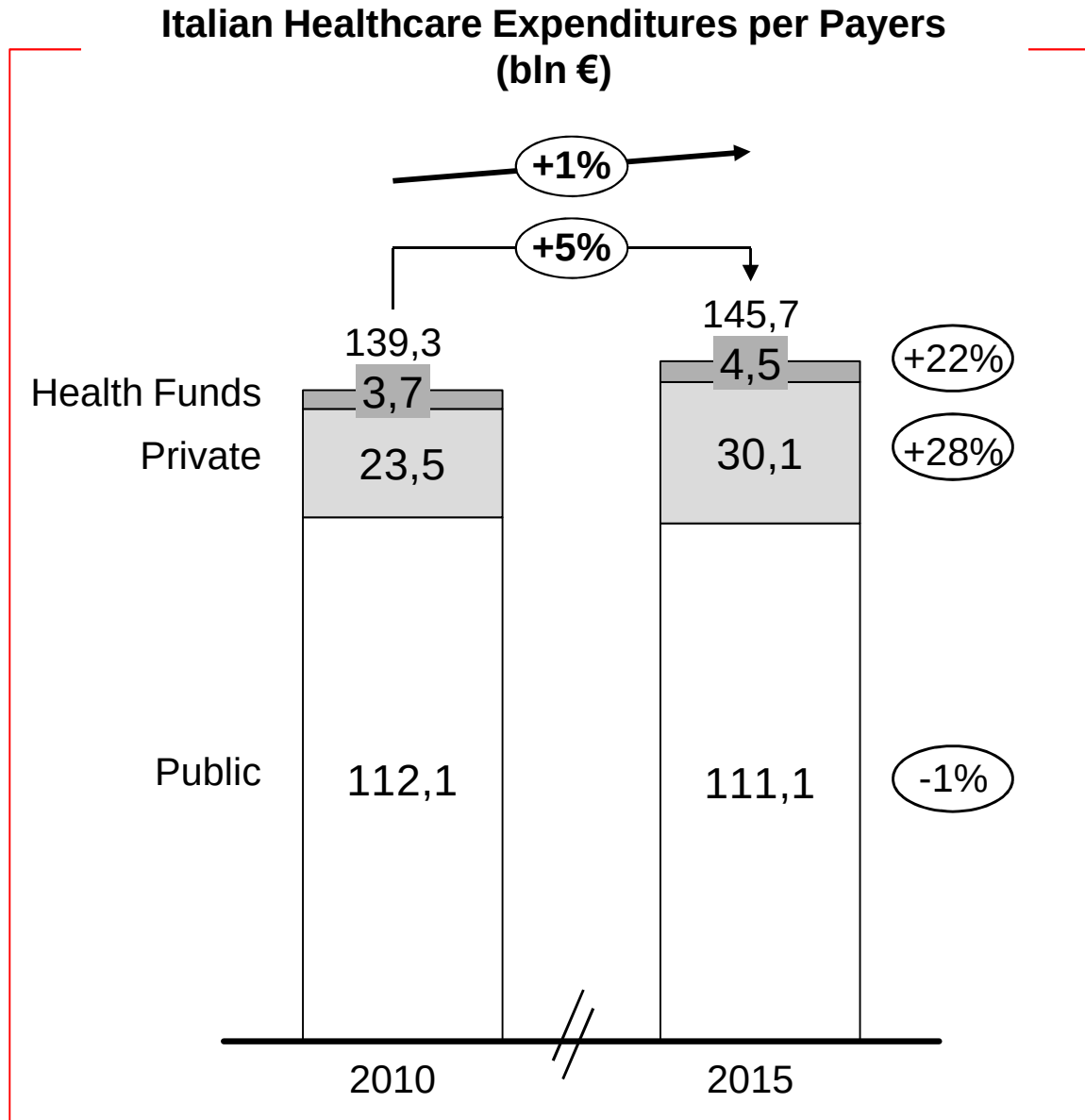
The screenshot shows the Nomad website homepage. At the top, the navigation bar includes 'About', 'For doctors' (underlined), 'For nurses', 'For facilities', 'Sign in', and a 'REGISTER' button. The main header features the text 'For doctors, by doctors.' above an illustration of a doctor and a nurse shaking hands in a clinical setting. Below this, the section 'What is Nomad?' is followed by a paragraph: 'Nomad is a free network for doctors to find great locum tenens and telehealth job opportunities, without agency recruiters and with full transparency of job details.' Three key benefits are listed: 'DO GOOD' (Find flexible locum tenens and telehealth jobs at facilities that need you the most), 'DO WELL' (Get paid a premium and earn supplemental income when and where you want), and 'DO MORE' (Focus on patients, while Nomad handles credentialing and malpractice insurance). A 'GET STARTED' button is at the bottom.

The screenshot shows the Cohealo website homepage. The navigation bar includes 'WHY COHEALO', 'SOLUTIONS', 'COMPANY', 'BLOG', 'Log In', and 'Request a Demo'. The main header features the text 'Cohealo turns unused capacity into profit' above a background image of a surgical suite. Below this, the section 'WHAT IS COHEALO?' is followed by a paragraph: 'Cohealo is a technology company that helps health systems share medical equipment across facilities, so they can optimize spend, accelerate cash flow, and improve access to care.' Three key benefits are listed with circular images: 'Optimize equipment spend' (Increase asset utilization while avoiding unnecessary purchases and rentals), 'Accelerate cash flow' (Launch or expand service lines quickly, based on proven demand), and 'Bring treatment to patients' (Care for patients where they live, not where equipment lives). A 'LEARN MORE' button is at the bottom.

TODAY'S AGENDA

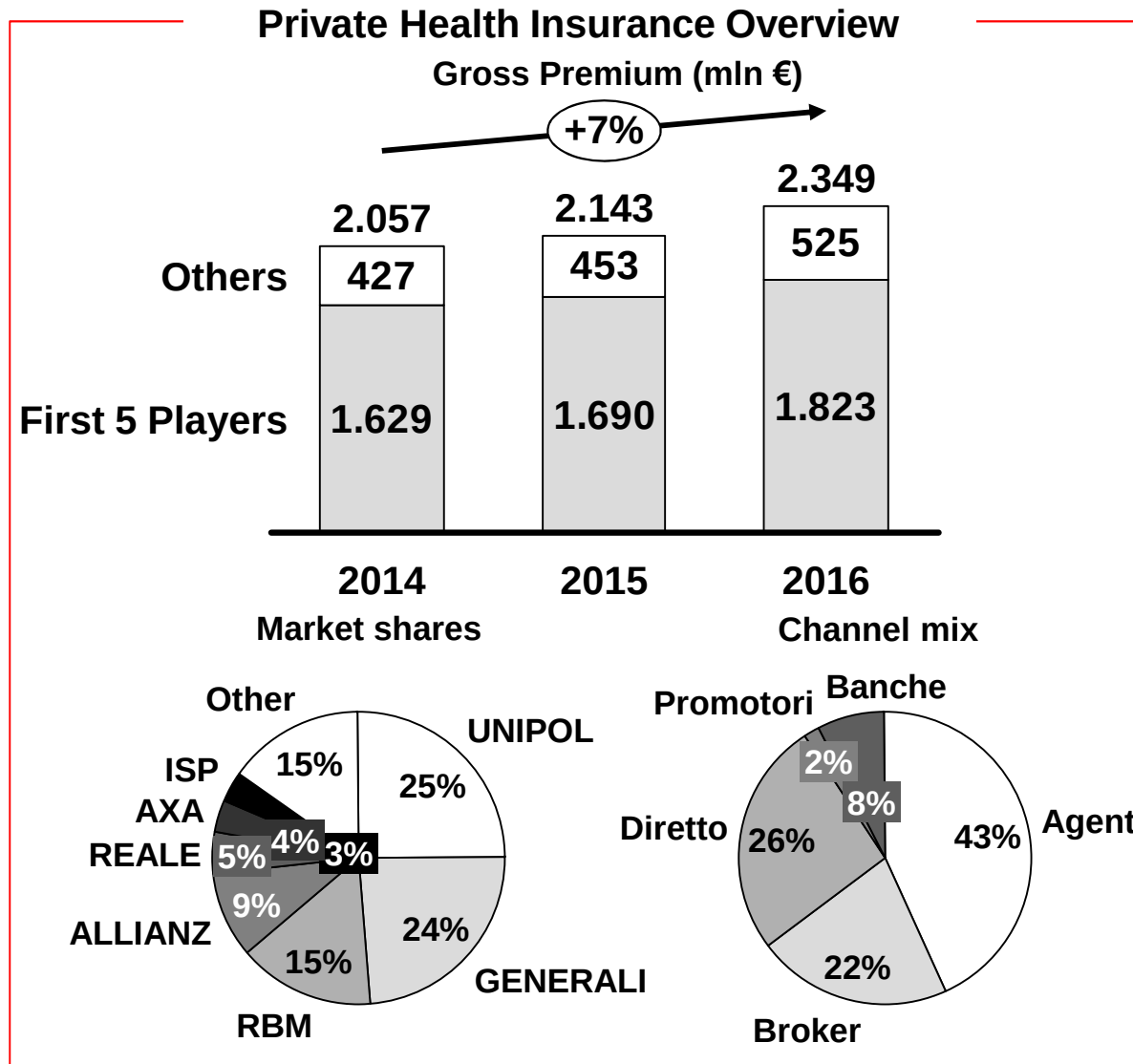
1. KEY TRENDS FROM A GLOBAL PERSPECTIVE
2. SELECTED DYNAMICS IN ITALY
3. CONCLUSIONS

MARKET IS STILL GROWING BUT EXPENDITURE IS GRADUALLY SHIFTING FROM PUBLIC TO PRIVATE



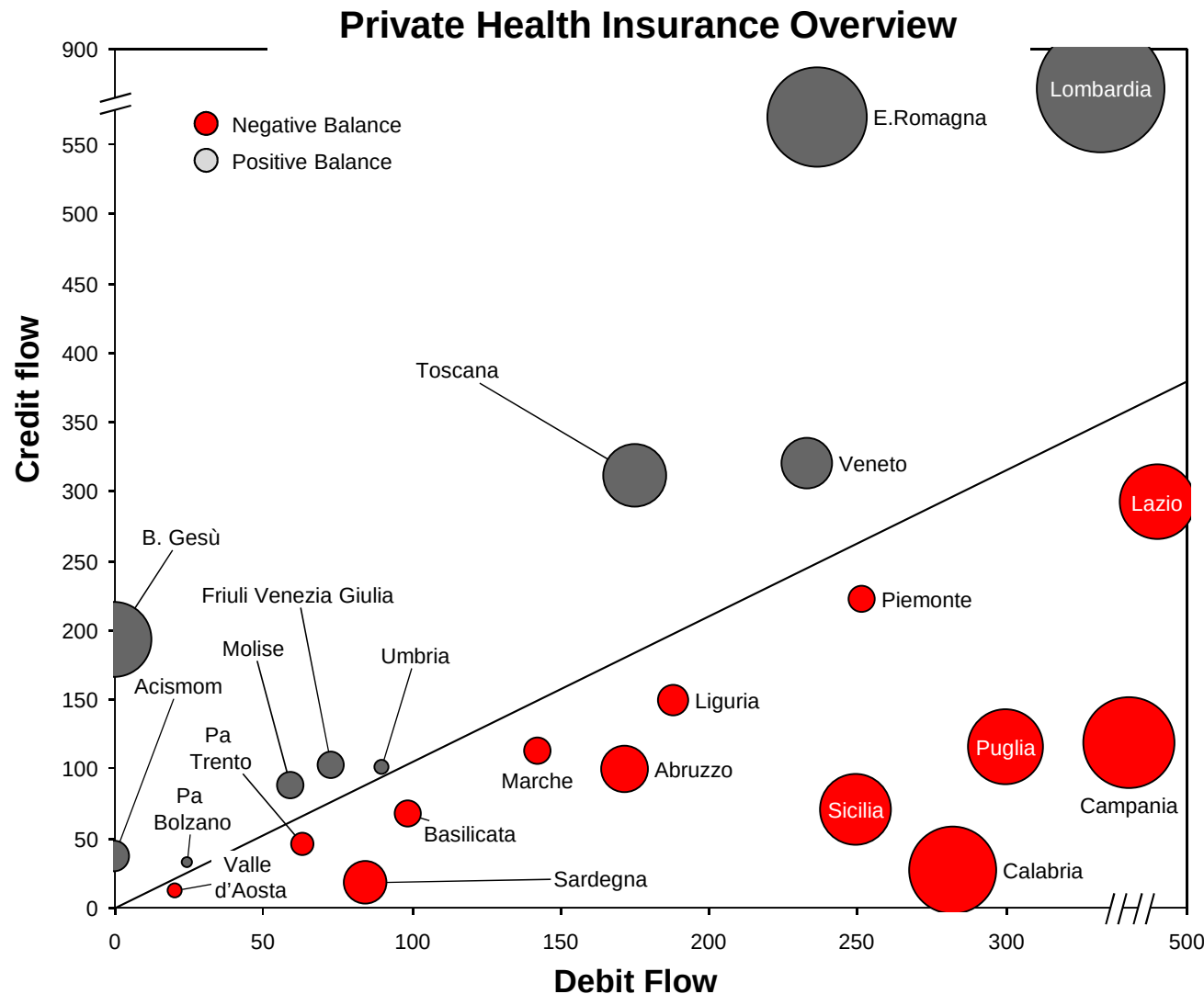
- The rising of new stakeholders and payers
- Patients are more informed and proactive in their health choices
- Direct to patient and Healthcare consumerization

THE RISING OF NEW STAKEHOLDERS AND PAYERS: INSURANCE EXAMPLE



- After a phase of consolidation, market is growing again due to insurance players seeking new sources of value
- Selected players such as RBM Salute, Axa and ISP are investing significantly, with important growth rates (up to >20% YoY growth)
- Strong pipelines around new connected health services, even if still focus on “well being”

PATIENTS ARE MORE INFORMED AND PROACTIVE IN THEIR HEALTH CHOICES, AS SHOWN BY HEALTH TOURISM FLOW



- The "health mobility" market value in 2016 is 4 bln €, despite 3,5% lower than 2015
- Every year about 800-900 k patients moves toward another region to receive medical care
- Lombardia region collected about 870 mln € credits in 2016
- Campania region has the black shirt record, with a negative balance of -281 mln€ in 2016

DIRECT TO PATIENT AND HEALTHCARE CONSUMERIZATION: AMPLIFON EXAMPLE

Amplifon aspiration and related business objectives ('15-18)

"Further strengthen our global leadership position and deliver sustainable sales growth and margin expansion, leveraging our unique business model"



Sales growth

Mid-to-high single digit CAGR 2015-2018



Profitability increase

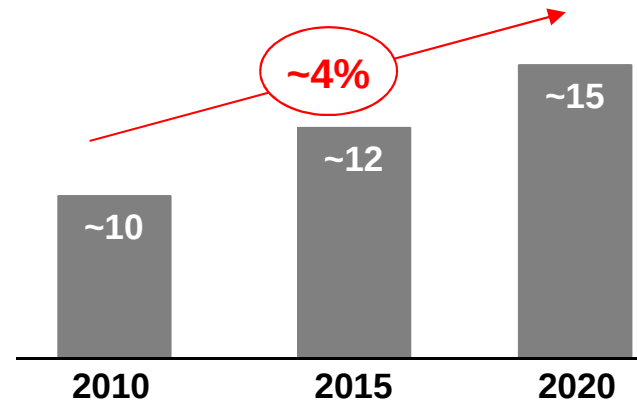
>150bps EBITDA margin



Network expansion

+600 Stores

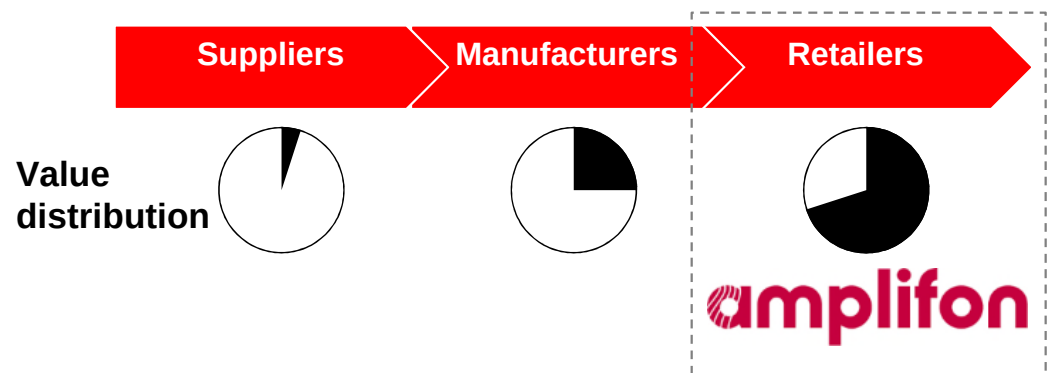
Hearing aids global retail market (€ bln)



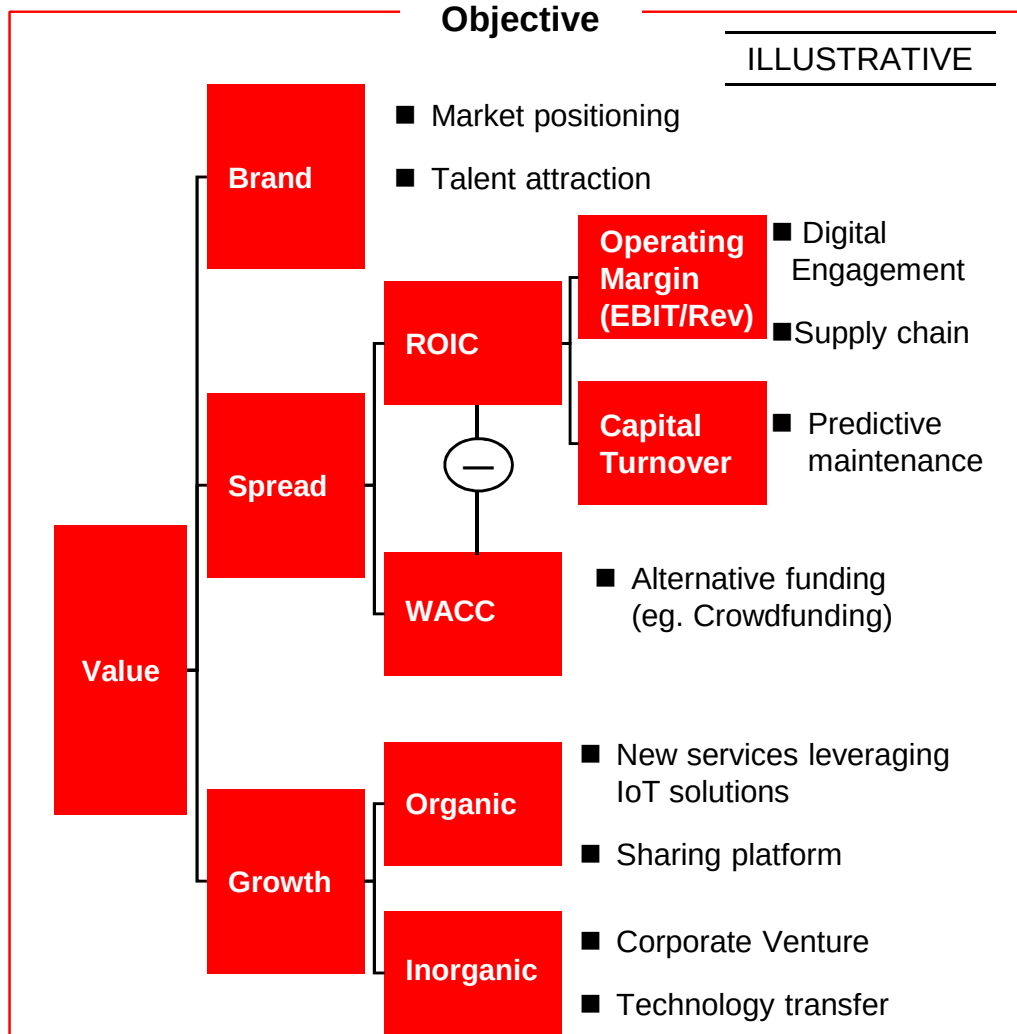
Key growth factors:

- Demographic factors sustaining the growth (aging population)
- Relevant market under-penetration

Hearing devices value chain



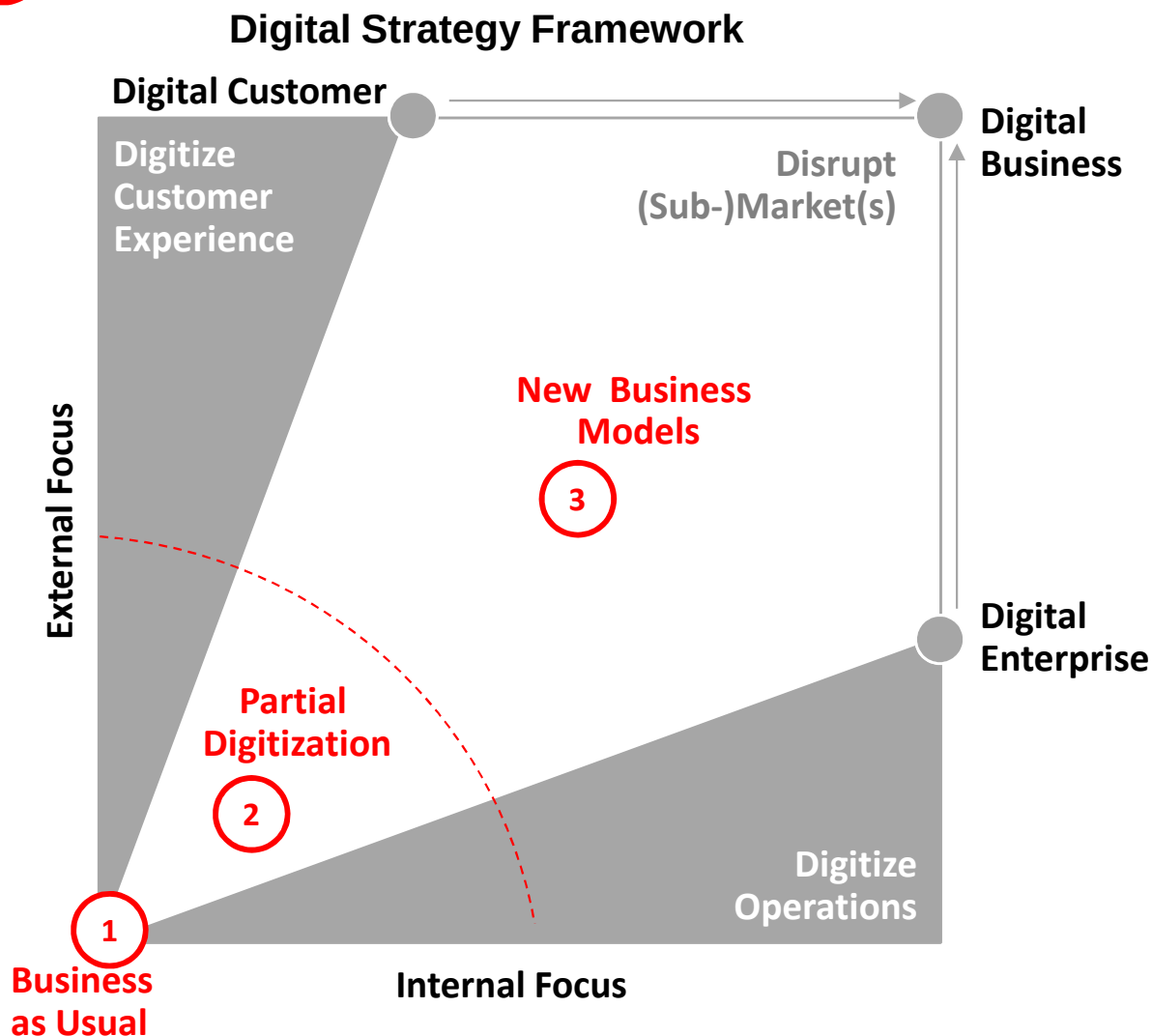
TRE STRATEGIC PRIORITIES FOR LIFE SCIENCES TO SUSTAIN LONG TERM VALUE CREATION



- 1 Accelerate digital transformation
- 2 Build and measure value across multiple stakeholders
- 3 Leverage the rising of open innovation

LIFE SCIENCES PLAYERS HAVE THREE 3 STRATEGIC OPTIONS THAT UNLOCK VALUE BY APPLYING DIGITAL TECHNOLOGIES TO DIFFERENT AREAS

1 Accelerate Digital transformation



Strategic Options



1) Business as Usual: Manage risks arising to existing business model(s) from digital activities of competitors



2) Partial Digitization: Realize EBITDA opportunities through digitization of existing value chain



3) New Business Models: Realize EBITDA opportunities through development of new revenue streams enabled by a new value chain

Value Areas



Digital Customer: Apply digital technology to address customers in a more sophisticated way to increase revenues and profitability



Digital Enterprise: Decrease costs of the existing value chain's primary functions (e.g. R&D) as well as support functions (e.g. HR)

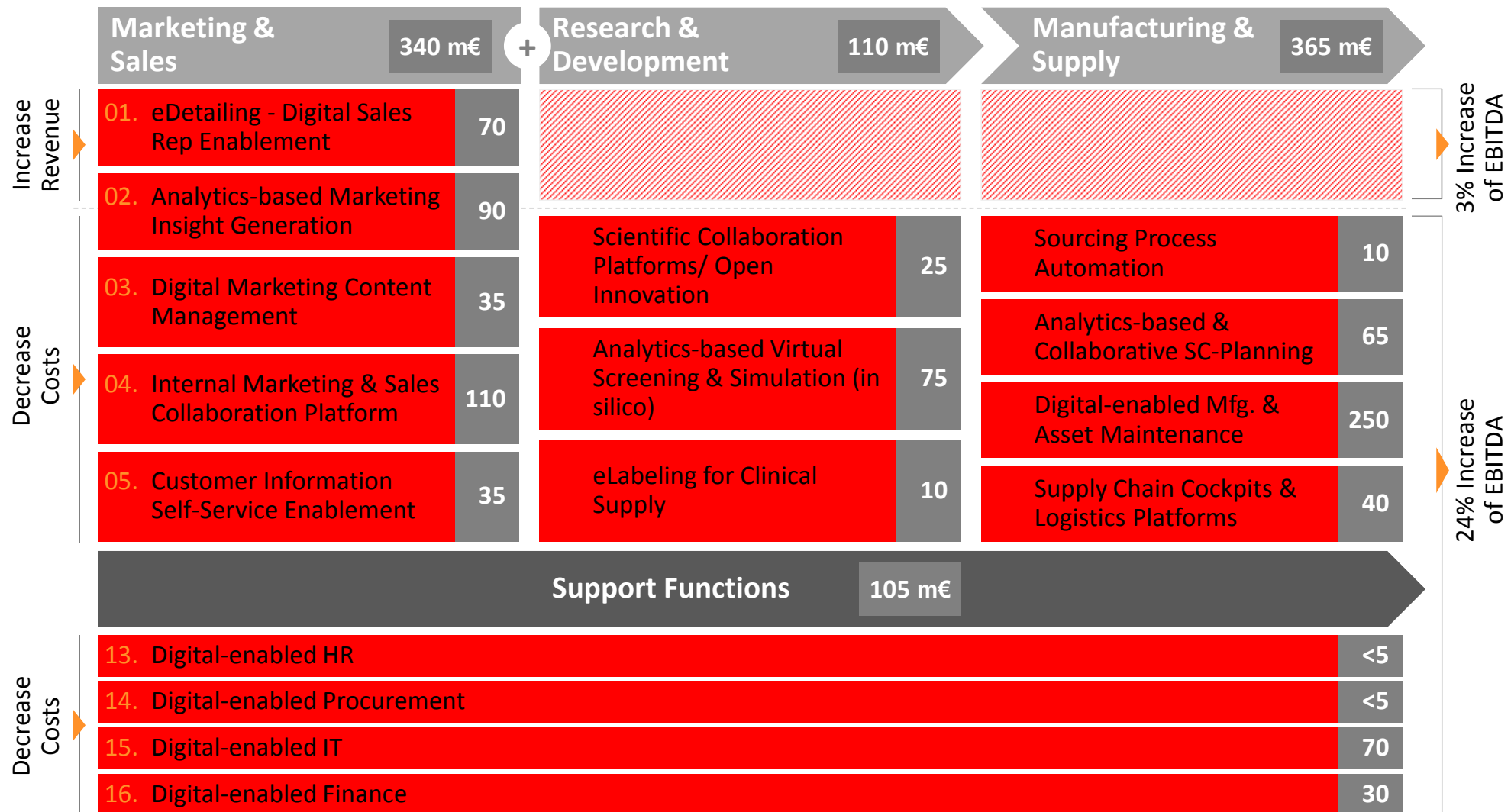


Digital Business: Digitize your current business model or develop new business models generating profits based on digital technology

A PORTFOLIO OF 16 PARTIAL DIGITIZATION LEVERS CAN BE USED TO UNLOCK EBITDA POTENTIALS ACROSS THE ENTIRE VALUE CHAIN



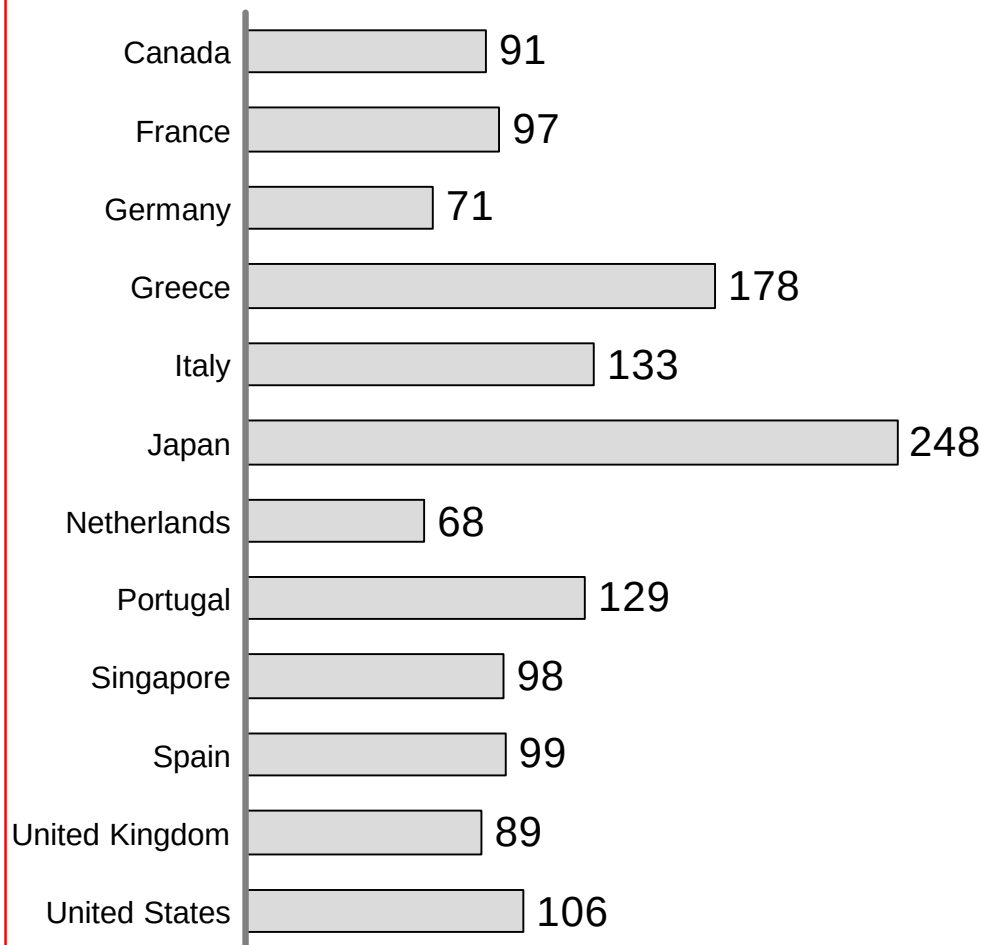
1 Accelerate Digital transformation (EBITDA upside x digitalization, 10 b€ Company)



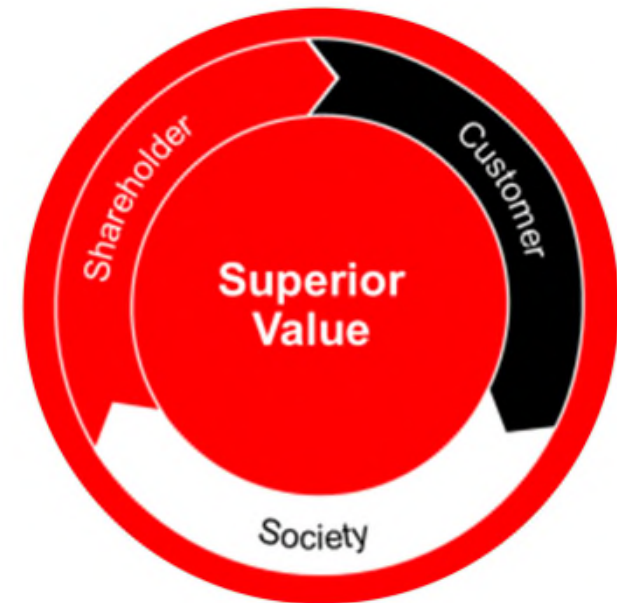
THE NEW VALUE EQUATION IS REQUIRING COMPANIES TO CROSS MULTIPLE VALUE DRIVERS SIMULTANEOUSLY

2 Build and measure value across multiple stakeholders

General government gross debt on GDP
(selected advanced economy 2015)



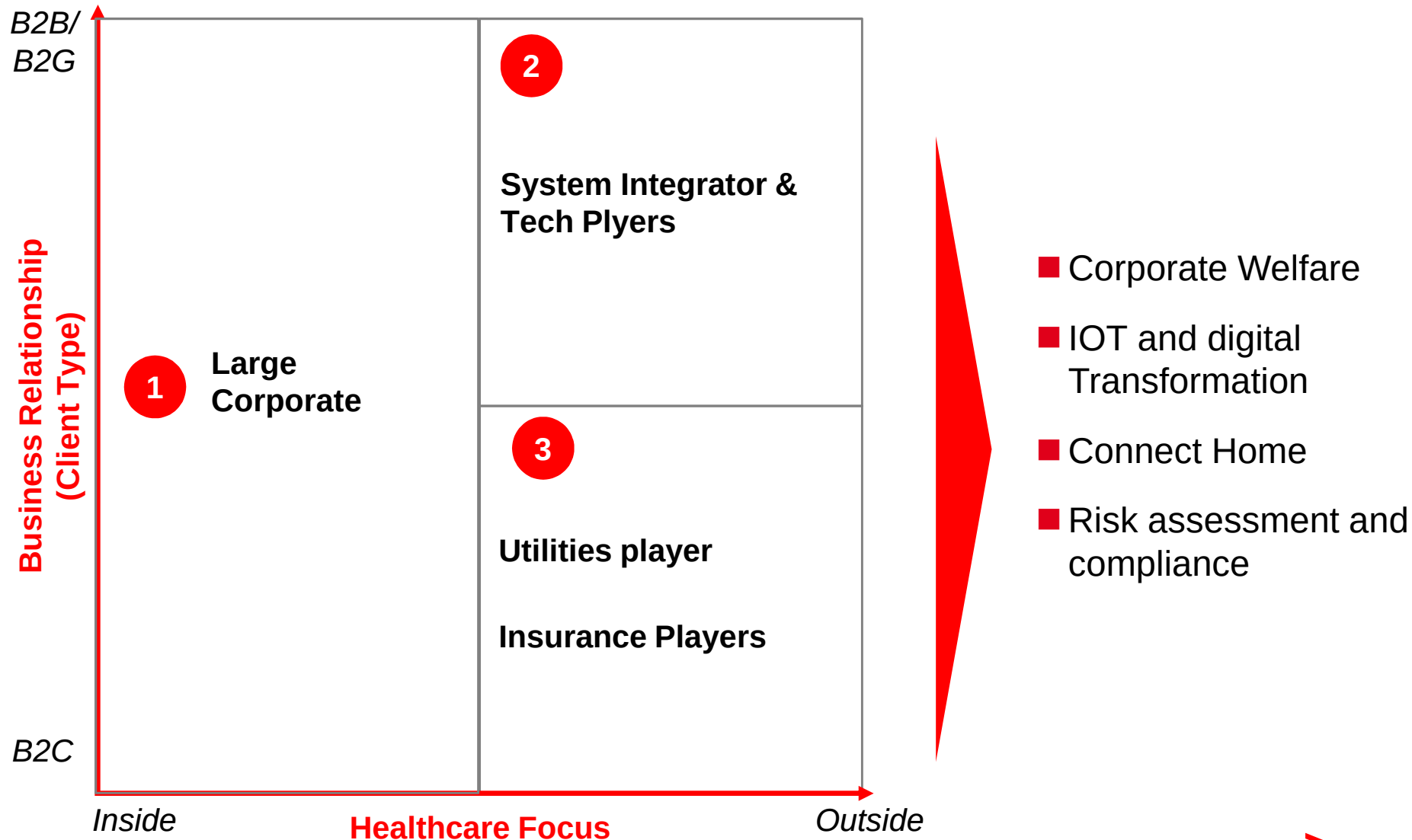
New Value Equation



**Digital creates transparency,
requiring businesses to solve for all
Stakeholders**

NEW KEY STAKEHOLDERS CAN BE ENGAGED TO BUILD NEW “WIN WIN” SOLUTIONS

2 Build and measure value across multiple stakeholders



INNOVATION ECOSYSTEM IN ITALY IS GROWING THANKS TO REGULATORY IMPROVEMENTS. LIFE SCIENCES IS GETTING A LOT OF ATTENTION

3 Leverage the rising of open innovation

Objectives for Corporate

Brand & Position	■ Sustain Corporate image leveraging an “hot topic” trend
Stakeholders engagement	■ Build/reinforce relations with key targets (eg. advocacy, physicians)
Skill reinforce	■ Inspire workforce and stimulate an entrepreneurial mindset
New services	■ Select and fast piloting new digital solutions (patient and hospital)
Market Access	■ Give Back program to sustain innovation premium at local level

Selected Initiatives in Italy

Venture Capital for LS (200 mln €)



Incubators/ Acceleration programs



Start up (>200 start-up)

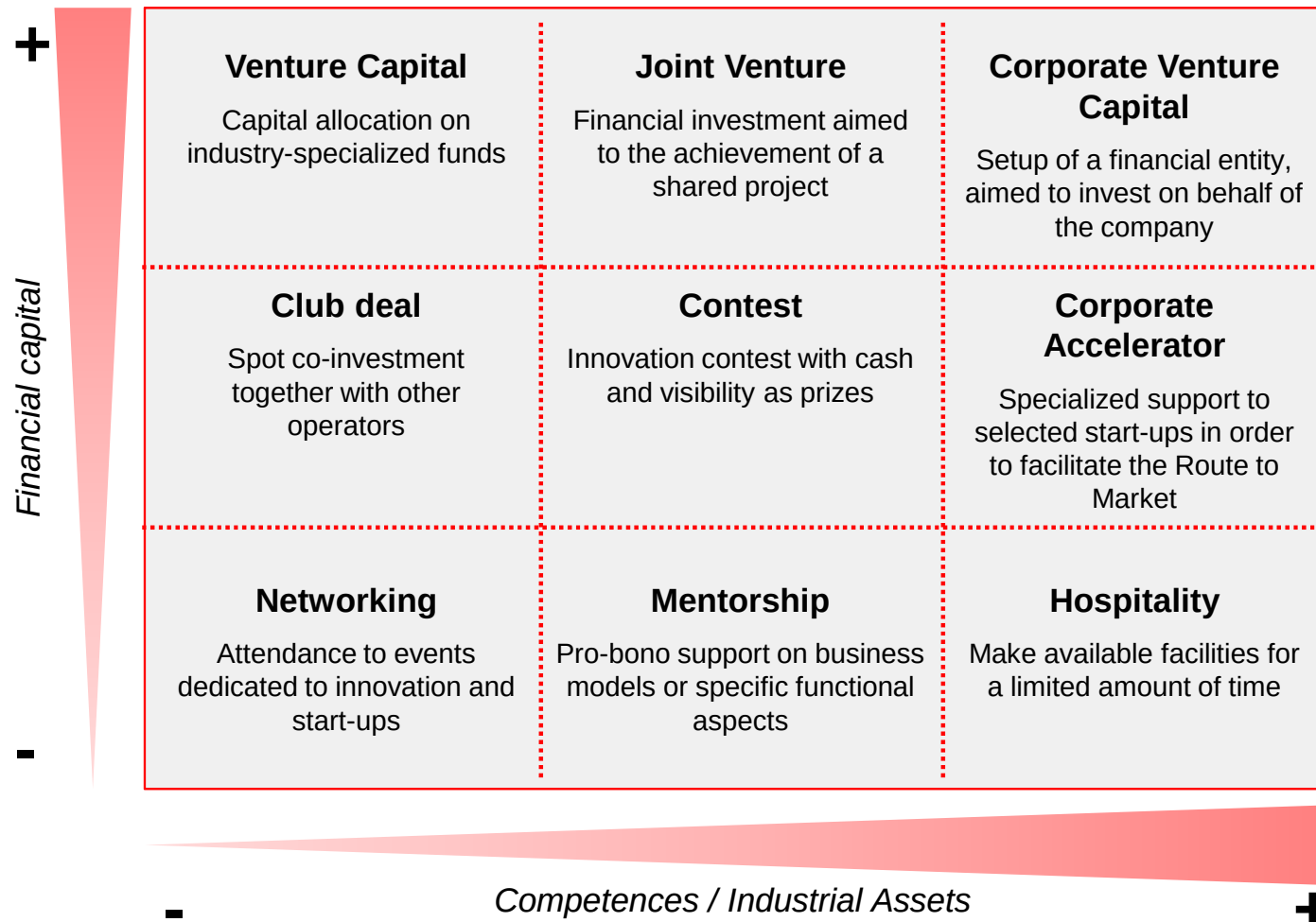


SEVERAL OPTIONS EXIST TO ENGAGE THE ECOSYSTEM ACCORDING TO WHAT COMPANIES CAN BRING TO THE TABLE

3

Leverage the rising of open innovation

Innovation ecosystem matrix



- Define **key objectives** and specific **focus area**
- Combine the “**in**” and “**out**” capabilities appropriately
- Define **key metrics** measure and track innovation results (efficiency and efficacy)
- Look **beyond the startup** and look the enable technology

TODAY'S AGENDA

1. KEY TRENDS FROM A GLOBAL PERSPECTIVE
2. SELECTED DYNAMICS IN ITALY
3. CONCLUSIONS

CONCLUSIONS

- The **Healthcare** is one of industries most impacted by **technology breakthrough**
- Need to **accelerate digital transformation** to ensure sustainability and long term **value creations for whole stakeholders**
- **Open Innovation** the opportunity can be leveraged **to accelerate** transformation and reduce time to market



 Danilo Mazzara  @DaniloMazzara