EFFECTIVE

First Strategic Workshop – “Paving the way to effective clustering towards exploitation & dissemination of FoF project results”

SESSION-3: Framework and network of stakeholders for industrial exploitation of innovative technologies

CRIT: a model for Collaborative Open Innovation

PRESENTATION GOAL

Is it worth for industries to invest in **inter-company collaboration** on the path towards innovation?

THE SPEAKER

- Enrico Callegati
- Degree in International Studies, Master in IPR Management
- Over 10 years on Innovation & TT:
  - Public (2004-2009) → designed & implemented national funding schemes to support industrial R&I
  - Private (from 2010) → R&D grants manager at CRIT (dialogue with technical staff, networking, project management…)

« generating value added for CRIT and its shareholders by developing & managing successful R&I funded projects »

AGENDA

- **The CRIT approach → 5’**
- Collaborative innovation → 5’
- Case studies → 15’

WHO IS THIS GUY?

In a world of widely distributed knowledge, companies **cannot afford to rely entirely on their own research**

Most innovations **fail**. And companies that don’t innovate die.

CRIT RESEARCH™

- Created in 2000 by large manufacturing companies in Emilia-Romagna
- A **common action** to improve shareholders innovation processes
- A private limited company (10 people, 1M€ turnover) providing:
  - Technical and scientific documentary research → **Technology scouting**
  - A place where companies can dialogue → **Collaborative (open) innovation**
  - Expertise in R&I management → **Innovation development**

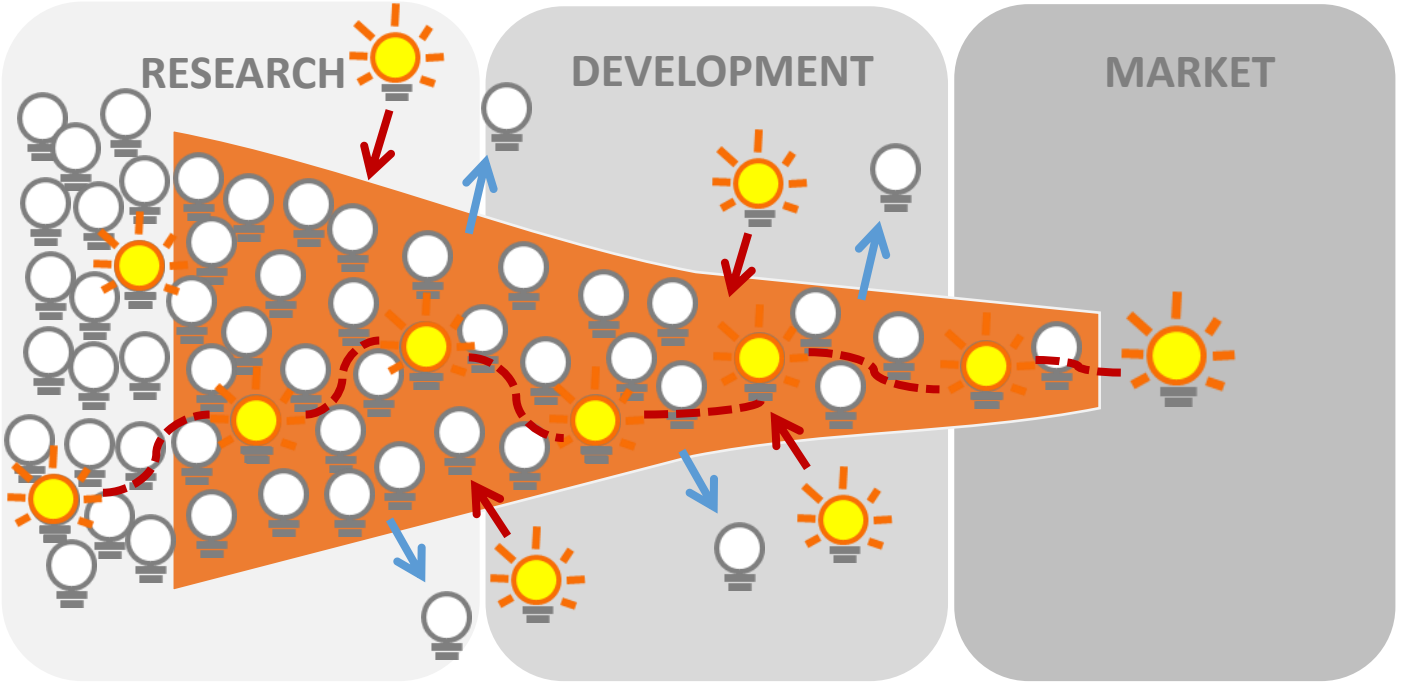
THE CRIT APPROACH

TECHNOLOGY SCOUTING
helps the selection of both technologies and technology partners most suitable for develop innovation

COLLABORATIVE INNOVATION
supports the transfer of knowledge between enterprises and external systems

INNOVATION DEVELOPMENT
facilitates the transformation process which brings the idea to a final product

CRIT SERVICES



PRIORITY TECHNOLOGIES 2015

- **Main sectors:** Automation, automotive, packaging, materials, mechanics, mechatronics, sensors, energy and environment, intellectual property…
- **Shareholders are directly involved** in planning CRIT activities
- Companies **decide every year the selection of technology themes to deal with**
- Each subject is treated with a **collaborative and supply chain based approach**

TECHNOLOGY THEMES 2014
METHODOLOGIES AND TECHNIQUES FOR PROCESS AUTOMATION AND CONTROL
HMI - HUMAN MACHINE INTERFACE
ARTIFICIAL VISION/RECOGNITION TECHNOLOGIES
RADIO/GPS/GPRS/UMTS/NLOS COMUNICATIONS
SAFETY AND HEALTH AT WORK AND NOISE REDUCTION
E-MAINTENANCE AND REMOTE DIAGNOSTICS
RFID/INTERNET OF THINGS/BIG DATA
ROBOTICS FOR AUTOMATION AND FOR PACKAGING
INNOVATIVE PRODUCTION PROCESSES AND MATERIALS
ADDITIVE MANUFACTURING AND 3D PRINTING
PRACELERATED TEST FOR RELIABILITY EVALUATION
CARBON FIBERS
POLIOLEFINIC FILMS/MULTILAYER FILMS
TOOLS AND METHODOLOGIES FOR DESIGN/SIMULATION AND TESTING
DIGITAL MOCK UP, HW AND SW IN THE LOOP, AUGMENTED REALITY
METHODOLOGIES AND TOOLS FOR ERGONOMICS (VIRTUAL ROOM, SW, ETC)
FAILURE ANALISYS (FMEA/FMECA)
SYSTEMS FOR THE GENERATION/STORAGE/ DISTRIBUTION AND REDUCTION OF ENERGY
ENERGY EFFICIENCY SYSTEMS FOR MACHINES
ENERGY EFFICIENCY FOR COMPANIES
ELECTRIC ENGINES WITH HIGH EFFICIENCY
ENERGY STORAGE SYSTEMS
ORGANIZATIONAL BENCHMARKING/LOGISTICS/HR AND OTHER COMPANY FUNCTIONS
PERFORMANCE INDICATORS FOR R&D DEPARTMENTS
INNOVATION MANAGEMENT
LEAN PRODUCTION
SOFTWARE AND TOOLS FOR INFORMATION SECURITY
INDICATORS FOR SUSTAINABILITY REPORTING (CSR)

COLLABORATIVE INNOVATION SHAREHOLDERS 2015

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- **Collaborative innovation → 5’**
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COLLABORATIVE INNOVATION

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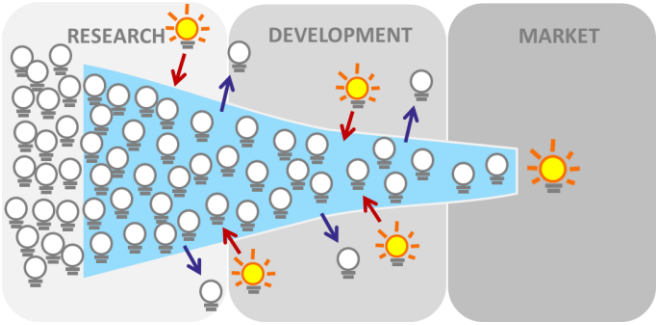
supports the transfer of knowledge between enterprises and external systems



CRIT provides enterprises a **collaborative environment** in which enterprises can:

Dialogue, sharing respective needs and experiences on specific technology themes, organization problems, logistic issues → **WORKSHOPS**

Deepen their knowledge about innovative technologies and the best management practices with **experts** or specialized and **endorsed suppliers** → **SEMINARS AND CONFERENCES**

Visit **sites of technology interest** and meet innovative **start-up** → **TECHNO TOURS**

Follow **training programmes** specifically tailored on their needs → **TRAININGS**

Create **industrial cross-linked laboratories** to develop project on common interests and identify and co-share solutions to common problems → **COLLABORATIVE LABS**

COLLABORATIVE INNOVATION

- A **platform for knowledge sharing** among companies:
  - **1 closed-doors technical meeting** per week among companies researchers
  - **One-to-one meetings** on specific request
- **Different levels of interaction**, according to:
  - Respective degree of **confidentiality**
  - **Similarity** of technologies/products
- Innovation support provided **through the shareholders competences**
- Only **for shareholders** (may block others from joining)

ENDORSED SUPPLIERS NETWORK

AEPI
akhela
B&R
Centro Affilatura
Centro Alesatura
CHIMAR Industrie Imballaggi
CMP
Colombo Filippetti Collaborative Engineering
CRP
CURTI Curti Costruzioni Meccaniche S.p.A.
DELTATECH Italy Sensori Estensimetrici Esecuzioni Custom
ECOR Research
EGICON Strategic Innovation
emerasoft solutions to collaborate
RuleDesigner
energynet s.r.l.
ESA
FD Fast Design
FESTO
FNC
GHEPI Plastic Products Innovation & Engineering
HYPERTEC SOLUTION innovation & passion
KUKA
LUNGO
Link engineering
Lucchi R. Elettromeccanica
MaGyc Innovation & Engineering
meccanica sbarzaglia
MECCANO STAMPI Costruzione Stampi Stampaggio Tecnopolimeri
MOTOR POWER COMPANY
NEW
OMRON Making innovation happen
DÜRR OLPIDÜRR S.p.A.
REDTURTLE agile.open.connected
Rockwell Automation
S.E.F.A. HOLDING S.p.A. GROUP
Serigrafia 76
TEC eurolab
VICEC
vimi fasteners
VISION TECH
Zanardi Fonderie

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CASE STUDY 1 – LIAM

BEFORE

2006-2009

- **Regular meetings** among packaging-automation CRIT R&D directors
- Common **technical challenges** identified
- Information on **excellent university research groups** shared

DURING

2010-2013

- Collaborative R&D **regional call for proposal**
- **LIAM project funded** with 1M€
- **R&D activities** implemented in 3 yrs
- Partners : 5 **companies**, 2 **universities** and **CRIT**

AFTER

From 2014

- LIAM Consortium kept in place as a **collaborative industrial applied research centre**
- LIAM technologies **exploited in the form of consulting** to shareholders and external customers

LIAM PROJECT

LIAM
WWW.LIAMLAB.IT

Virtual prototyping
Solutions for predictive diagnostics
Software architecture machine independent & platform independent
Benchmarking of industrial commercial platform

- **4 machinery OEMs,** sharing technologies **but not markets**
- 1 automation **electronics supplier** (SELCOM)
- 2 **universities** (UNIBO, UNIMORE) + 1 TT **centre** (CRIT, coord)
- A **separated shared legal entity** implemented research
- Research on **3 distinct but sinergic topics**

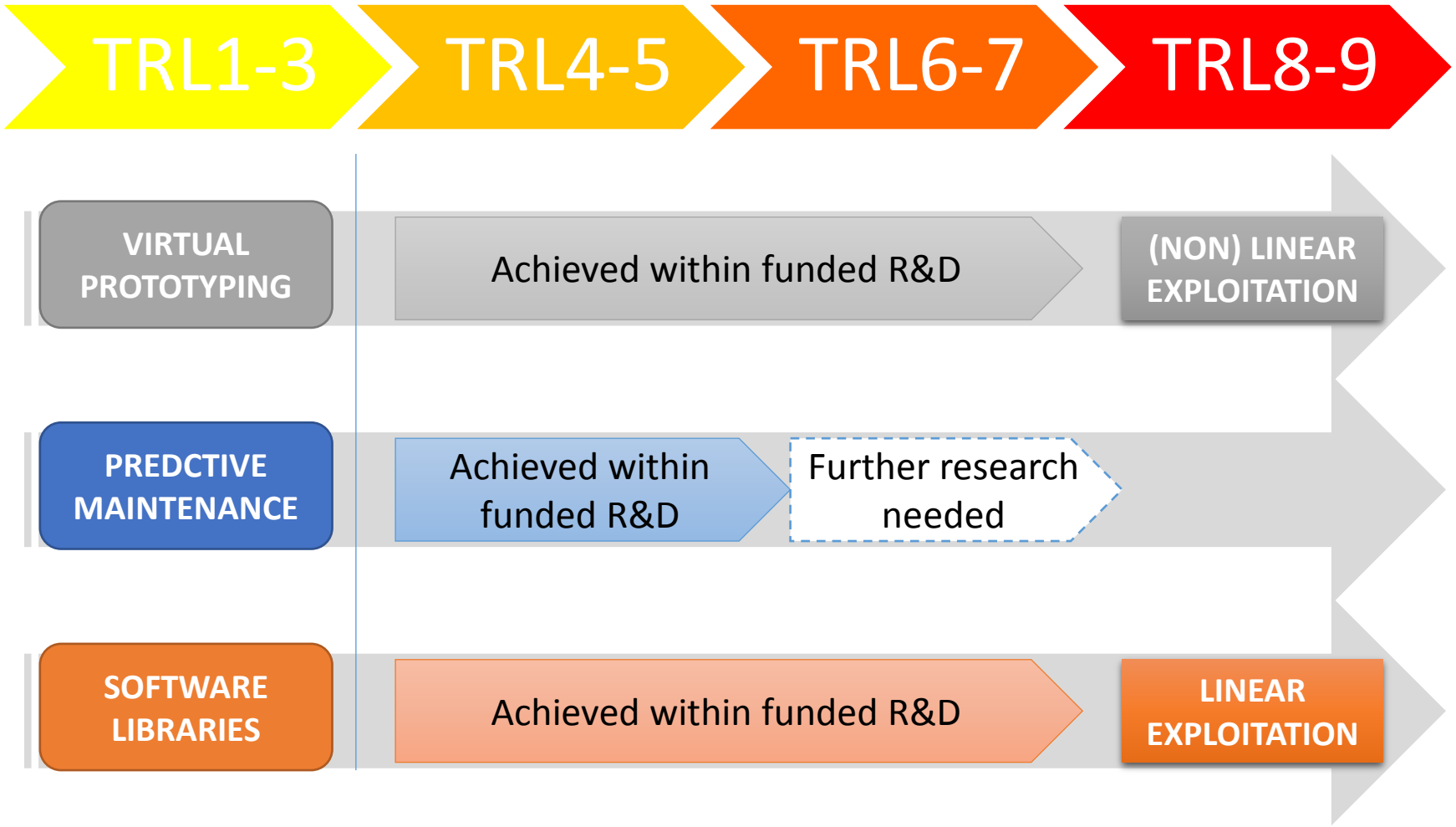
LE AZIENDE SOCIE

IMA Sharing Passions · SACMI · SELCOM GROUP · sitma

I CLIENTI

Tetra Pak

LIAM TRL ADVANCEMENT



CASE STUDY 2 – SELECT FP7

Smart and Efficient Location, idEntification, and Cooperation Techniques

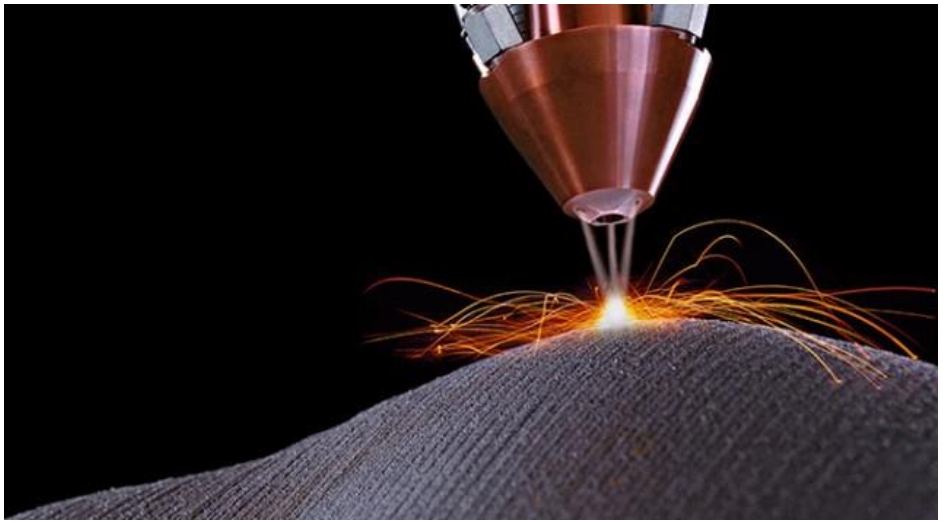
- FP7 project (2010-2014) on cheap smart wireless microsystems network for object **detection, identification, tracking**
- Need to **thoroughly study** use case scenarios
- Need to **go beyond** a mere **customer-supplier** interaction
- CRIT organized & supported **dedicated interview** with 10 perspective users (shareholders)
- **Effective exploitation** through use case feedback & contacts kept

CASE STUDY 3 – KNOWLEDGE SHARE

- CRIT Shareholder 1 producing **machinery**
- Wanted to introduce **plastics extrusion** in operations performed by machines
- **Didn't know** plastics extrusion technology
- Asked for **CRIT support**
- CRIT contacted Stakeholder 2, **expert in plastics extrusion** for different machines
- Set up a **bilateral meeting** (experience share, materials testing)
- Shareholder 1 **saved researchers' 2-4 months FTE**

CASE STUDY 4
COLLABORATIVE SCOUTING

- Several shareholders interested in **additive manufacturing** (direct part production in machinery)
- Genelar **lack of a clear picture** (technologies, suppliers, skills)



- CRIT performed **collaboraive technology scouting** (state of the art + key players)
- **Modular** approach (common report + personalisations)

PRESENTATION GOAL

To what extent can industrial companies find it profitable to **invest time & money** to **share innovation ideas and experiences** …

…rather than **concentrating on their own products/processes/services**?

ANSWER - CONCLUSIONS

- Similar technical problems - **no competition**!
- Need for **critical mass** in R&D investment (5% - 100MEur turnover)
- Corporate **culture** (what you give is what you get)
- Different **sharing levels** (R&D-technologies-themes)
- CRIT **lowers the cost of sharing** (you'll get something back sooner or later)
- TT & exploitation is a lot about **meeting**
- **Sharing is key** to exploitation of research results

THANK YOU FOR YOUR ATTENTION

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SCOUTING
YOUR NEXT
TECHNOLOGY