TOWARDS A SUSTAINABLE FUTURE: ECSEL JU & MONDRAGON CORPORATION

Industry 4.0 challenges & results for SMEs

Naiara Goia
Senior Manager – Innovation & Technology
MONDRAGON Corporation
01. MONDRAGON Corporation
02. Reference ECSEL projects at MONDRAGON
03. Results and Impact
Our triangular knowledge system connects EDUCATION, BUSINESS AND TECHNOLOGY INVESTIGATION.

WE ARE COMMITTED TO INNOVATION

- 15 OWN RESEARCH AND DEVELOPMENT CENTRES
- 461 FAMILIES OF RESEARCH PATENTS

WE PROVIDE 73,635 jobs

22,6 million IN SOCIALALLY-ORIENTED ACTIVITIES

AS WELL AS A COMMITMENT TO SOLIDARITY WITH THE ENVIRONMENT
60,748 EMPLOYEES

67,030 EMPLOYEES

12,887 EMPLOYEES
WE ARE
BRAND
LEADERS
INNOVATION PRIORITIES

ADVANCED MANUFACTURING
- Flexible Automation
- Virtual Factory
- Eco-sustainable Factory
- Zero Defects
- Servitisation

BIG DATA
- Internet of Things
- Cybersecurity
- Advanced analytics

SMART CITIES
- Inter-connected City
- Connected citizen
- Urban mobility
- Integral renewal

MATERIAS PRIMAS
- Light-weighting
- 3D Printing
- Recovery
- Advanced functionality
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Cyber Physical System based Proactive Collaborative Maintenance

“Maintenance is no longer a necessary evil that costs what it costs, but an important function that creates additional value in the business process”
“New business models with a stronger service orientation are seen as an instrument to react to the upcoming competition and future challenges”

Developed solutions:

- Smart Sensing and data acquisition technologies
- Analysis and decision making (Local/ Distributed & Cloud)
- Communications in challenging environments
- Human Machine Interaction
- Service platform architecture

- 47 partners
- Total cost: ~ €30M
- EU Contribution: ~ €17M
- Coordinator: MGEP (MONDRAGON)
Improving the digital industry
A user platform optimizing industrial processes
Developed solutions (MONDRAGON):
IIoT Platform-Based MACHINE TOOL BUSINESS MODEL Transformation

- Machine as product service system
- Advanced services design
- Innovative business models

MONDRAGON PARTNERS:

- 109 partners (ECSEL: 45% AENEAS, 30% ARTEMIS-IA and 25% EPOSS partners)
- 19 countries
- Project Budget: 106 Mio. €
- Coordinator: Infineon Tech.
Secure Connected Trustable Things

"Building Trust in the Internet of Things"
Consortium: 57 partners from 12 countries

Coordinator: Virtual Vehicle

Developed solutions: comprehensive cost-efficient solutions of wireless, end-to-end secure trustworthy connectivity and interoperability to bridge the last mile to market implementation.

Societal benefit: end-users privacy rules
Intelligent Motion Control Platform for Smart Mechatronic Systems
Developed solutions (MONDRAGON):
Smart wireless sensor node for intelligent motion control of a CNC milling head for some industrial partners

Societal benefit: Strengthen European industrial competitiveness:
- Improved machine performance and reliability;
- Expected 50% reduction in development time for control (sub-)systems for mechatronic applications.
- Impact on the entire value chain of the production automation market

- Duration: 3 years (Start 1-6-2017)
- Total Cost: ~ € 19M
- EC- Contribution: ~ € 11M
- Consortium: 31 partners from 10 countries
- Coordinator: SIOUX CCM
“Our vision is to enable collaborative automation by networked embedded devices. The grand challenges are enabling the interoperability and integrability of services provided by almost any device”
**Developed solutions:** A technology framework enabling collaborative automation and closing innovation critical technology gaps

**Societal benefit:** Help society tackle both energy and competitiveness challenges

- Total Cost: ~ €68M
- EC- Contribution: ~ €11M
- Consortium: 80 partners
- Coordinator: Lulea Technical University
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FOR MONDRAGON ORGANIZATIONS

DEVELOPED SOLUTIONS

FOR SME-s

CHALLENGES & SUCCESSES

BENEFITS

RESULTS

BENEFITS

ECSEL JU
RESULTS AND IMPACT FOR MONDRAGON ORGANISATIONS

• Participation in collaborative projects with global leaders

• Anticipate needs and direct the research

• Rapid technological transfer to industry

• Alignment with MONDRAGON strategic areas and Industry 4.0 challenges
SOCIAL BENEFITS

• Improve competitiveness of our companies: productivity, quality and predictability of large and complex industrial systems

• Tackle both energy and sustainability challenges: more efficient and more compact applications for energy generation, transformation and usage

• Strengthen Europe’s position in diverse emerging technology fields
SUCCESSES OBTAINED BY SME-S (MONDRAGON CORPORATION)

• New products with greater added value
• Increased productivity
• Impact with differentiating projects
• Step forward in their Industry 4.0 strategies
WE MAINTAIN OUR DIFFERENTIAL VALUES AS THE MAJOR GUARANTEE OF OUR PROGRESS
Thank you!

Naiara Goia
ngoia@mondragoncorporation.com