

Research and Innovation Public Private Partnerships for RIS3 Implementation  
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# Potential H2020 partners in Circular Manufacturing for Centro and Norte Regions, Portugal

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# Outline

- Identification of Circular Manufacturing in H2020: Reminder
- 5 selection criteria
- Possible analytical follow-up studies

# Identification of Circular Manufacturing in H2020: Reminder

- Explicit Circular Manufacturing: 29 projects
- Implicit Circular Manufacturing: 35 additional projects
- Total Circular Manufacturing: 64 projects

# Participants in the 64 H2020 CM projects

- 603 duplicated
- 510 unique

# 5 selection criteria

- 4 of Boschma's (2005) proximities
  - Organizational
  - Social
  - Institutional
  - Geographical
- Power
- 2 measures per criterion, i.e. 10 measures

# Social proximity

- Trust generated by friendship, kinship and experience
- In the context of H2020
  - Experience in Circular Manufacturing (CM) projects
  - Collaboration with many participants
- Measures
  - Number of CM projects in which the partner has participated
  - Number of participants per project

# Top 2% in social proximity

| Organization name                        | Country | Org. type  | Projects | Partners x project | Social proximity |
|--|---------|------------|----------|--------------------|------------------|
| Fraunhofer-Gesellschaft                  | Germany | Research   | 9        | 22                 | 1.0              |
| Stiftelsen Sintef                        | Norway  | Research   | 8        | 22                 | 0.9              |
| Sintef AS                                | Norway  | Research   | 6        | 21                 | 0.7              |
| National Technical Univ. of Athens       | Greece  | University | 5        | 21                 | 0.7              |
| Norges Teknisk-Naturvitenskapelige Univ. | Norway  | University | 6        | 16                 | 0.7              |
| Exergy Ltd                               | UK      | Business   | 4        | 23                 | 0.6              |
| Iris Technology Solutions                | Spain   | Business   | 3        | 27                 | 0.6              |
| Average Top SP                           |         |            | 6        | 22                 | 0.7              |
| Average Non-Top SP                       |         |            | 1        | 19                 | 0.3              |

# Institutional proximity

- Trust generated by the institutional framework at the macro-level
- In the context of H2020
  - Collaboration with Portugal Centro and Norte
  - Collaboration with similar regions in terms of R&D and H2020 participation
- Measures
  - % of Portugal Centro and Norte participants
  - % of participants from other intermediary R&I regions (Pontikakis et al., 2018)



# Top 2% in institutional proximity

| Organization name   | Country     | Organization type | % of Portugal Centro and Norte partners | % of other intermediary R&I region partners | Institutional proximity |
|---|-------------|-------------------|---|---|-------------------------|
| Avecom  | Belgium     | Business          | 21%                                     | 13%   | 1.0                     |
| Company for Software Production, Trade and Services   | FYROM       | Business          | 21%                                     | 13%   | 1.0                     |
| European Food Information Council   | Belgium     | Others            | 21%                                     | 13%   | 1.0                     |
| Intertek Belgium  | Belgium     | Business          | 21%                                     | 13%   | 1.0                     |
| Intertek Iberica Spain  | Spain       | Business          | 21%                                     | 13%   | 1.0                     |
| Intertek Italia   | Italy       | Business          | 21%                                     | 13%   | 1.0                     |
| Kpad Ltd  | Uk          | Business          | 21%                                     | 13%   | 1.0                     |
| Linpac Packaging Pravia   | Spain       | Business          | 21%                                     | 13%   | 1.0                     |
| Migros Ticaret Anonim Sirketi   | Turkey      | Business          | 21%                                     | 13%   | 1.0                     |
| Nova Id Fct - Associacao para a Inovacao e Desenvolvimento da Fct                                       | Portugal    | Research          | 21%                                     | 13%   | 1.0                     |
| Nuevas Tecnologias para el Desarrollo de Packaging y Productos Agroalimentarios con Componente Plastica | Spain       | Business          | 21%                                     | 13%   | 1.0                     |
| Tutti Pasta SA  | Spain       | Business          | 21%                                     | 13%   | 1.0                     |
| Unio Corporacio Alimentaria   | Spain       | Business          | 21%                                     | 13%   | 1.0                     |
| Wageningen University   | Netherlands | University        | 21%                                     | 13%   | 1.0                     |
| Average Top IP  |             |                   | 21%                                     | 13%   | 1.0                     |
| Average Non-Top IP  |             |                   | 1%                                      | 12%   | 0.3                     |

# Organisational proximity

- Extent to which relations are shared in an organisational arrangement
- In the context of H2020
  - ‘Appropriate’ collaboration w/business firms
  - ‘Appropriate’ collaboration w/research organisations
- Measures
  - Closeness to the average business participation (56%)
  - Closeness to the average research organisation participation (21%)

# Top 2% in organisational proximity

| Organization   | Country  | Organization type | Average % business | Average % research | Organizational proximity |
|--|----------|-------------------|--------------------|--------------------|--------------------------|
| Urbaser S.A.   | Spain    | Business          | 55%                | 21%                | 1.00                     |
| Campden BRI Magyarorszag Nonprofit Korlatolt Feelossegu Tarsasag | Hungary  | Research          | 58%                | 21%                | 0.97                     |
| Coopbox Group Spa  | Italy    | Business          | 58%                | 21%                | 0.97                     |
| Creme Software Ltd   | Ireland  | Business          | 58%                | 21%                | 0.97                     |
| Ecozept France   | France   | Business          | 58%                | 21%                | 0.97                     |
| Ecozept GbR  | Germany  | Business          | 58%                | 21%                | 0.97                     |
| Furst-Plast  | France   | Business          | 58%                | 21%                | 0.97                     |
| Innoven Srl.   | Italy    | Business          | 58%                | 21%                | 0.97                     |
| Institut National de la Recherche Agronomique                    | France   | Research          | 58%                | 21%                | 0.97                     |
| Instituto de Biologia Experimental e Tecnologica                 | Portugal | Research          | 58%                | 21%                | 0.97                     |
| La Vie Est Belle BVBA  | Belgium  | Business          | 58%                | 21%                | 0.97                     |
| Pack4food  | Belgium  | Others            | 58%                | 21%                | 0.97                     |
| Soredab SAS  | France   | Business          | 58%                | 21%                | 0.97                     |
| Symetris   | France   | Business          | 58%                | 21%                | 0.97                     |
| Tageos   | France   | Business          | 58%                | 21%                | 0.97                     |
| Universita degli Studi di Modena e Reggio Emilia                 | Italy    | University        | 58%                | 21%                | 0.97                     |
| Universite de Montpellier  | France   | University        | 58%                | 21%                | 0.97                     |
| Vlevico  | Belgium  | Business          | 58%                | 21%                | 0.97                     |
| Average Top OP   |          |                   | 58%                | 21%                | 0.97                     |
| Average Non-Top OP   |          |                   | 56%                | 21%                | 0.71                     |

# Geographical proximity

- Spatial or physical distance between economic actors
- In the context of H2020
  - Close to Portugal Centro and Norte
  - Experience in participating with distant partners
- Measures
  - Average distance to Portugal Centro and Norte
  - Average distance between partners in the projects in which a given partner has participated

# Top 2% in geographical proximity

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| Organization name                                | Country  | Organization type | Average distance to C&N (km) | Average distance btn. partners (km) | Geographical proximity |
|--|----------|-------------------|------------------------------|-------------------------------------|------------------------|
| Fundacao para a Ciencia e a Tecnologia           | Portugal | Public body       | 252                          | 1,428                               | 1.00                   |
| Centro para el Desarrollo Tecnologico Industrial | Spain    | Public body       | 345                          | 1,428                               | 0.98                   |
| Mº de Economia, Industria y Competitividad       | Spain    | Public body       | 345                          | 1,428                               | 0.98                   |
| Instituto Compdad. Empresarial Castilla y Leon   | Spain    | Public body       | 331                          | 1,413                               | 0.98                   |
| Fundacion Cartif                                 | Spain    | Research          | 331                          | 1,398                               | 0.97                   |
| Universidad de Burgos                            | Spain    | University        | 331                          | 1,398                               | 0.97                   |
| Optimizacion Orientada a la Sostenibilidad       | Spain    | Business          | 467                          | 1,389                               | 0.95                   |
| Tecnalia Ventures SL                             | Spain    | Business          | 500                          | 1,379                               | 0.94                   |
| Devan-Micropolis S.A.                            | Portugal | Business          | 83                           | 1,185                               | 0.93                   |
| Ferroatlantica I & D SL                          | Spain    | Business          | 233                          | 1,220                               | 0.92                   |
| Silicio Ferrosolar SL                            | Spain    | Business          | 233                          | 1,220                               | 0.92                   |
| Average Top GP                                   |          |                   | 314                          | 1,353                               | 0.96                   |
| Average Non-Top GP                               |          |                   | 1,586                        | 947                                 | 0.59                   |

# Power

- Combination of leadership and fundraising capacity
- In the context of H2020
  - Leadership capacity
  - Fundraising capacity
- Measures
  - Number of projects coordinated
  - Average amount of individual funds allocated per project participated

# Top 2% in power

| Organization name  | Country  | Org. type | Projects coord. | Average fndrsng (k€) | Power |
|--|----------|-----------|-----------------|----------------------|-------|
| Industrias Mecanicas Alcudia SA                                | Spain    | Business  | 1               | 3,262                | 1.0   |
| Sintef AS  | Norway   | Research  | 3               | 969                  | 1.0   |
| Fraunhofer-Gesellschaft  | Germany  | Research  | 3               | 804                  | 0.9   |
| Advanced Substrate Technologies                                | Denmark  | Business  | 1               | 2,590                | 0.8   |
| Algaenergy SA  | Spain    | Business  | 1               | 2,426                | 0.8   |
| Acies Bio Biotehnoloske Raziskave in Razvoj Doo                | Slovenia | Business  | 2               | 1,309                | 0.8   |
| Mogu SRL   | Italy    | Business  | 1               | 2,148                | 0.7   |
| Nextchem SRL   | Italy    | Business  | 1               | 2,108                | 0.7   |
| Commissariat à l'Energie Atomique et aux Energies Alternatives | France   | Research  | 2               | 795                  | 0.7   |
| Agroindustrial Kimitec SL                                      | Spain    | Business  | 1               | 1,851                | 0.7   |
| Agencia Estatal CSIC   | Spain    | Research  | 2               | 742                  | 0.7   |
| Average Top PC   |          |           | 2               | 1,727                | 0.8   |
| Average Non-Top PC   |          |           | 0               | 379                  | 0.1   |

# Proximity & Power (P&P)

- Combination of the 4 proximities
  - Organizational
  - Social
  - Institutional
  - Geographical
- And power



# Top 2% in Proximity & Power

| Organization name            | Country  | Org. type | SP  | IP  | OP  | GP  | Power | P&P |
|------------------------------|----------|-----------|-----|-----|-----|-----|-------|-----|
| Fraunhofer-Gesellschaft      | Germany  | Research  | 1.0 | 0.2 | 0.9 | 0.6 | 0.9   | 1.0 |
| Agencia Estatal CSIC         | Spain    | Research  | 0.4 | 0.7 | 0.9 | 0.8 | 0.7   | 0.9 |
| Industrias Mecanicas Alcodia | Spain    | Business  | 0.3 | 0.5 | 0.9 | 0.7 | 1.0   | 0.9 |
| Ecofrag-Mentation Europe     | Spain    | Business  | 0.5 | 0.8 | 0.9 | 0.8 | 0.3   | 0.9 |
| Sintef                       | Norway   | Research  | 0.7 | 0.2 | 0.9 | 0.5 | 1.0   | 0.9 |
| Blueplasma Power             | Spain    | Business  | 0.5 | 0.8 | 0.9 | 0.8 | 0.2   | 0.9 |
| Aimplas                      | Spain    | Research  | 0.6 | 0.4 | 1.0 | 0.8 | 0.3   | 0.8 |
| Urbaser                      | Spain    | Business  | 0.3 | 0.6 | 1.0 | 0.8 | 0.5   | 0.8 |
| Nova Id                      | Portugal | Research  | 0.4 | 1.0 | 0.8 | 0.9 | 0.1   | 0.8 |
| Eurospuma                    | Portugal | Business  | 0.5 | 0.8 | 0.9 | 0.9 | 0.1   | 0.8 |
|                              |          |           |     |     |     |     |       |     |
| Average Top PP               |          |           | 0.5 | 0.6 | 0.9 | 0.8 | 0.5   | 0.9 |
| Average Non-Top PP           |          |           | 0.3 | 0.3 | 0.7 | 0.6 | 0.1   | 0.5 |

# Customisation: is this what we want?

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| Criterion                       | Measure   | Weight |
|---------------------------------|---|--------|
| <b>Social proximity</b>         | Number of CM projects in which the partner has participated                                 | 10%    |
|                                 | Number of participants per project  | 10%    |
| <b>Institutional proximity</b>  | % of Portugal Centro and Norte participants   | 10%    |
|                                 | % of participants from other intermediary R&I regions                                       | 10%    |
| <b>Organizational proximity</b> | Closeness to the average business participation (56%)                                       | 10%    |
|                                 | Closeness to the average research organisation participation (21%)                          | 10%    |
| <b>Geographical proximity</b>   | Average distance to Portugal Centro and Norte   | 10%    |
|                                 | Average distance between partners in the projects in which a given partner has participated | 10%    |
| <b>Power</b>                    | Number of projects coordinated  | 10%    |
|                                 | Average amount of individual funds allocated per proj                                       | 10%    |

# Possible analytical follow-up studies

- Comparison with non-Circular Manufacturing
- What makes a proposal on CM get granted?
- Do H2020 CM networks correlate with S&T networks?
- Which are the regional characteristics conducive to participation in H2020 CM?
- What are the individual characteristics of H2020 CM project members?
- What previous and current interaction channels are put in place among members of the consortium?