COLLABORATION NETWORKS AND INNOVATION IN QUEBEC’S ICT HARDWARE CLUSTER: A DEEPER UNDERSTANDING OF THE ECOSYSTEM

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AGENDA

• Research context
• Research questions
• Methodology
  • Data
  • Interviews
• Results
  • Firms
  • Intermediaries
• Conclusion and discussion
  • Next steps
ICT INDUSTRY IN CANADA

Geographical distribution of ICT firms in Canada

Source: Industry Canada, Canadian Company Capabilities

Geographical distribution of ICT firms in Quebec

Source: Industry Canada, Canadian Company Capabilities
RESEARCH CONTEXT

• 86% of the ICT industry is composed of small firms (less than 10 employees)

• Lee and al. propose an intermediary model that supports SMEs to create their collaboration network

• Bromont is home of the only semi-conductor manufacturing firm outside south east Asia
RESEARCH QUESTIONS

• Which practices of open innovation (OI) are adopted by the Canadian ICT industry?
• And how are they characterized?
METHODOLOGY
APPROACH

• Based on the study of Bouhadra and Beaudry (2016), we identified key players to conduct semi-structured interviews in order to characterize their collaboration practices

• The multiple case study employed, as described by Yin (2009), is a good method to get a deeper knowledge of an actual phenomenon

• 2 firms and 3 intermediaries in different fields of application
THEMES

• Open innovation and collaboration practices
• GPN
• Innovation context in Quebec
• Public support
• Hardware vs Software
DEFINITIONS

• **Collaboration:** To work together towards common goals and share methods of work or assume responsibilities collectively towards a project or a production (Laurel, 2002)

• **Subcontracting:** Transactional relation only, without any particular proximity between the two parties

• **Open innovation:** The use of inbound and outbound flows of knowledge in order to accelerate the innovation process (Chesbrough, Vanhaverbeke and West, 2006)
RESULTS
# FIRMS RESULTS

<table>
<thead>
<tr>
<th>Type</th>
<th>Alpha</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of application</td>
<td>Telecommunications, infrastructures</td>
<td>Aerospace and instrumentation</td>
</tr>
<tr>
<td>Open innovation and</td>
<td>Collaborates with customers and universities</td>
<td>Collaborates with customers and universities</td>
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<tr>
<td>collaboration practices</td>
<td></td>
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<tr>
<td>Global production network</td>
<td>Located in Asia mainly</td>
<td>Located in Asia but prefer a Canadian supplier due to tax credit</td>
</tr>
<tr>
<td>Innovation context in Quebec</td>
<td>Rich ecosystem</td>
<td>Rich ecosystem</td>
</tr>
<tr>
<td>Public Support</td>
<td>Public support is sufficient but no incentive for collaboration</td>
<td>Public support is sufficient e.g. R&amp;D tax credits, but lack of support for commercialisation</td>
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<tr>
<td>Hardware vs Software</td>
<td>Hardware and software are now integrated together to provide solutions</td>
<td>There is still a future for the hardware field but it's also becoming more part of software application. Hardware companies are moving to Asia.</td>
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<td>Type</td>
<td>Gamma</td>
<td>Delta</td>
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<tr>
<td>Field of application</td>
<td>Tech firms (focused on commercialisation)</td>
<td>Technology transfer office</td>
</tr>
<tr>
<td>Open innovation and collaboration practices</td>
<td>Knowledge sharing with firms</td>
<td>Licensing</td>
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<tr>
<td>Innovation context in Quebec</td>
<td>Highly skilled labour force</td>
<td>Increasing presence of serial inventors</td>
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<tr>
<td>Public Support</td>
<td>Weak in terms of commercialisation</td>
<td>Weak in terms of commercialisation</td>
</tr>
<tr>
<td>Hardware vs Software</td>
<td>Hardware is necessary to support software applications</td>
<td>No comment</td>
</tr>
</tbody>
</table>
“Public support in Quebec is good but it’s still not enough because it doesn’t promote collaboration between firms.”
“The closer, the better when it comes to selecting partners or suppliers, but sometimes we have to go Asia. It’s less costly and you will find everything you need.”
“Nowadays, it’s impossible to separate hardware from software as they are integrated into solutions”

“In the US, 1$ for R&D equals to 2$ invested in the commercialisation of a product. We can’t say the same for Canada since it’s only focussed on R&D.”
“The government suggests that we use Canadian partners but they are currently hard to find. For example, Blackberry were involved in many projects before its financial situation declined”
“There is a good branding about Montreal and public support from the government through tax credits. But we should continue to promote the brand.”

“We have some of the best researchers in Optics/Photonics but nobody knows about it...”
CONCLUSION AND DISCUSSION
CONCLUSION

• Firms and intermediaries have adopted some open innovation practices
  • Licensing
  • Collaboration with universities and clients
• Current innovation support seems to be weak especially for the commercialization of products
• Should intermediaries play a role in developing public policies?
NEXT STEPS

• Interviews more firms/intermediaries
• Compare firms/intermediaries in similar fields of application
• Analyse the performance of a firm/intermediary based on the adoption of open innovation
THANK YOU