Waterloo and Finland: Similarities

- Late entrants to high-technology markets (mobile communications)

- Success based on large, flagship firms representing at least 20% of ICT employment

- Both firms “declined” after 2008, shedding roughly 75% of their local workers

- In both cases, flagships have been replaced by a vibrant startup scene
Waterloo and Finland: Differences

- Finland: ~10% drop in ICT employment between 2008 and 2012, even steeper decline in output, productivity

- Waterloo: Haven’t found comparable figures, but other indicators suggest that the ICT industry is larger than ever

- Why has the transition been so much more difficult in Finland than Waterloo?
Post–Flagship Waterloo v. Finland: Possible Explanations

- Firm size? But Blackberry had a larger impact on the local labor market.

- Comparative advantage? Not so different, and doesn’t explain outcomes in ICT.

- Macroeconomic conditions? Significant, but limited relevance to ICT industry.

- Institutions? Yes, but institutions that inhibited adjustment in Finland were not exogenous, actively shaped by Nokia.
Embedding Firms in Local Communities

- Public policy: Most effective when it connects firms to high-quality public goods, like human capital

- Networks: For example, long-term relationships with local suppliers

- Ideas: Firms might identify with and contribute to the local community
Embedding Can Be Good for Firms

- Provides access to high-quality collective goods (skilled labor, knowledge, etc)

- Supplier networks can facilitate adaptation to changing circumstances

- Relationships with government, other firms, knowledge-bearing institutions, etc. can foster innovation
Embedding Can Be Good for Communities

- Firms are less likely to leave if they depend on local resources (e.g. Blackberry – University of Waterloo)

- Firms are more likely to compete on the basis of quality or novelty, less vulnerable to cost competition

- Local communities may benefit from technological diffusion and learning
Flagship Firms

- Large enterprises can be particularly beneficial
  - More productive
  - Have the scale to invest in collective goods
  - Can deliver reputational benefits (put Finland, Waterloo “on the map”)

- But they can also create problems, exacerbate lock-in (Grabher 1993)
  - Political capture
  - Functional lock-in (e.g. supplier networks)
  - Cognitive lock-in: Groupthink
Blackberry in Waterloo

- No political capture, because there were few policies to capture
  - Close ties to local universities, but didn’t control education policy
  - ~$50 million in subsidies, but little after 2004
  - Limited influence over innovation policy

- Limited ties to other, local technology firms. Most important local suppliers were restaurants

- A dominant force in the local media, but within other outlets
Nokia in Finland

- Controlled multiple policy levers via formal representation and informal ties
"When I was working at Nokia, [the] industry associations, the Federation of Technology Industries and even the Finnish government would approach us and ask ‘What is the next thing we need to do?’ And I thought, ‘Why are you asking me? Shouldn’t you have a plan of your own?’"

–Former employee, 14 June 2016, Finland
Nokia in Finland

- Controlled multiple policy levers via formal representation and informal ties
  - Controlled education policy via the Science and Technology Policy Council
  - 175 million Euro in R&D grants between 1995 and 2008
  - More importantly, contributed to emphasis on R&D

- Supplier network (14,000) almost as large as Nokia itself (21,000). At the center of Finnish R&D networks

- Hegemonic force in Finnish media, the definitive model of corporate success
When Nokia got into trouble, extended to its massive supplier network. Not just manufacturing, but software and IT consultancy.

Not a large universe of ICT firms to absorb talent that left Nokia.

Technology policies designed to promote R&D, not entrepreneurship. Poorly adapted to needs of startups until Nokia decline.

Institutions have changed (Slush, Vigo, etc.), but this is a very recent development.
When Blackberry got into trouble, it was just Blackberry, no supplier network

Other firms in unrelated areas (e.g. OpenText) could hire Blackberry talent

Smaller but broader range of initiatives to promote innovation that predated Blackberry’s collapse

Startup scene is relatively new, but building on a more mature foundation than Finland (could access resources other than R&D subsidies)
Conclusions

- In both cases, the decline of a flagship firm wasn’t fatal. Both ICT industries survived, and may become stronger than ever.

- But the transition was more difficult in Finland, because the entire ICT industry and public policy more generally was built around Nokia.

- Paradoxically, Waterloo may have benefited from the limited scope of its innovation policies and low levels of coordination.