

Growth of New Technology Ventures: Insights from a Comparison of German and Canadian Spin-offs

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Definition Academic Spin-Off

Academic spin-offs are

- business ventures that were
- founded by (former) scientists of a research institution
- to commercialize technology from that institution.

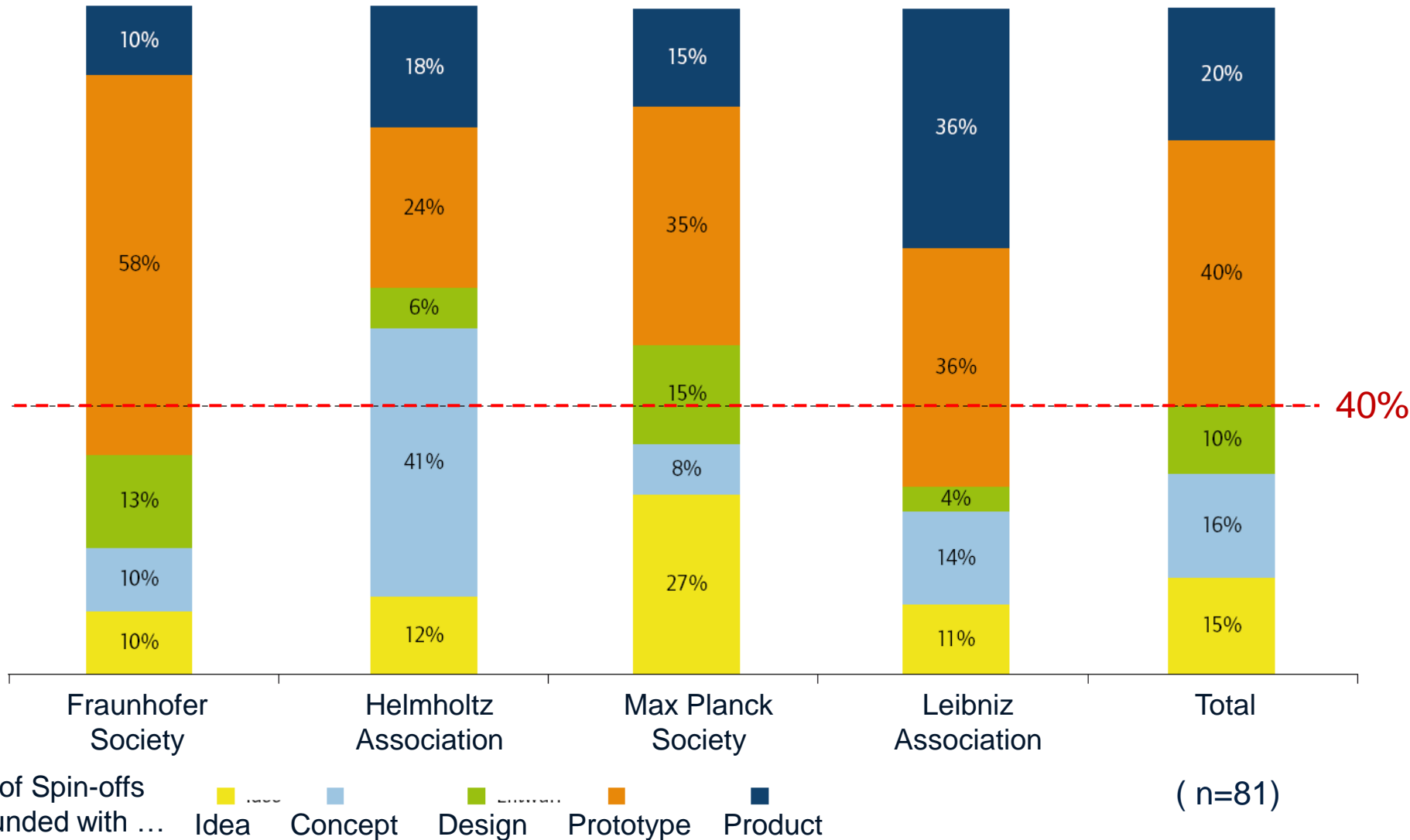
German inventions ... ***... but commercialized abroad***

**MP3-Standard (invented by the Fraunhofer
 Institute for Integrated Circuits, 1998)**



France / Japan

Research Spin-offs are Often NOT Ready for Market!



Major Challenge for Academic Spin-Off

- ❑ Developing a business opportunity based on a raw technology:
 - High market uncertainty
 - Lack of size and complementary assets
 - Limited business experience of founders

- ❑ Problem:

Many spin-offs fail in developing marketable products despite promising technology

**„When the winds of change are blowing, some people ...
... ; others build windmills!“**

Basic assumption:

In stormy times it is better
to be

- proactive,
- innovative, and
- risk taking

„... build shelters“ →



Source: Siemens Corporate Technology

Technological Competition & Entrepreneurial Orientation – Precursors to Spin-Off Growth ?

Original Paper:
Schillo and Walter, “Importance of Technological Evolution
and Entrepreneurial Orientation for Academic Spin-Offs in
Canada and Germany” R&D Management Conference,
Manchester, UK, 2010

Slides adapted for this presentation

Research Question

Can the company's research environment provide useful guidance for a spin-off's strategic orientation?

Data Set
72 Canadian spin-offs
94 German spin-offs

Technological Competition

Technological competition is an important aspect that most new ventures need to understand in order to take advantage of market opportunities to grow (little empirical evidence)

Different levels of competition necessitate different strategies for success

Literature does not provide clear guidance on the direction of fit:

Should companies be more entrepreneurial in highly competitive research environments ?

Entrepreneurial Orientation (EO)

Previous work identifies five dimensions of EO

- *Innovativeness*
- *Pro-activeness*
- *Competitive Aggressiveness*
- Autonomy
- Risk-Taking

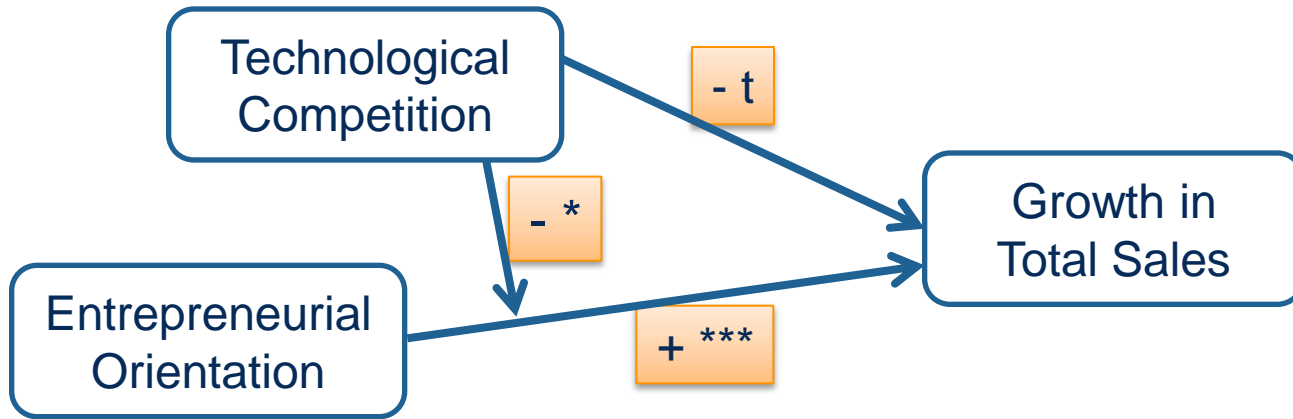
EO relates positively to company success in many contexts, but not all (moderators)

Some evidence of differences in EO across countries

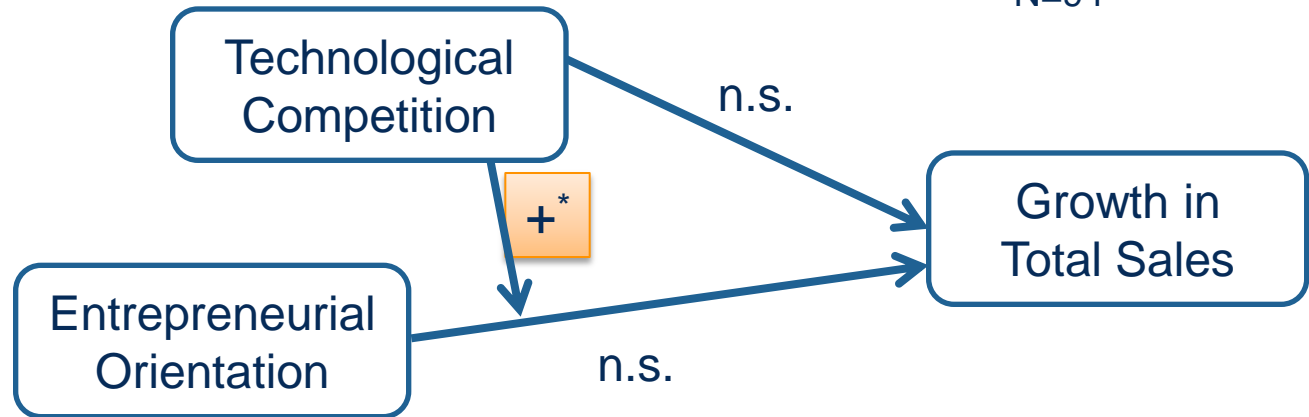
Firm behavior that is more entrepreneurial should make a difference between those firms that grow and others that do not grow, especially when they operate in a dynamic or hostile environment.

Regression Models & Results

Canada
N=72



Germany
N=94

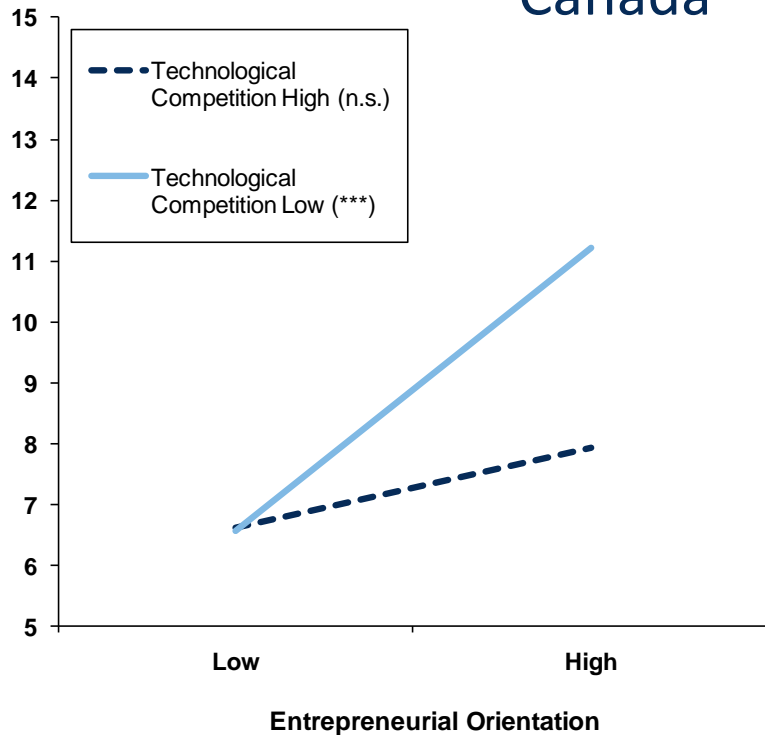


t : p<.10
* : p<.05
** : p<.01
*** : p<.001

Interaction Effects

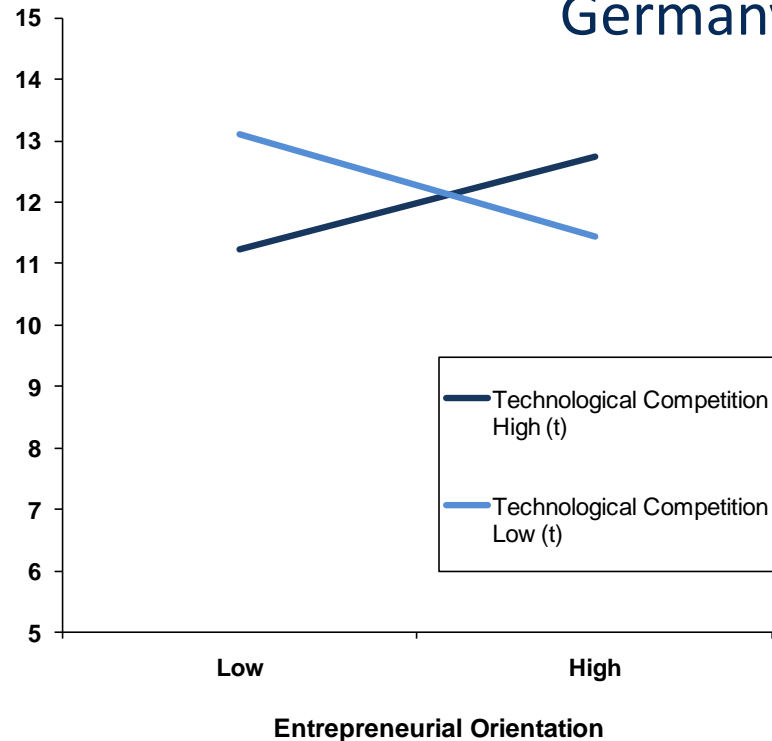
Growth in Total Sales (log)

Canada



Growth in Total Sales (log)

Germany



In Canada: EO is helpful independently of technological developments

In Germany: Companies fare better if adapted to competitive environment

Best option for Canadian companies: highly entrepreneurial in field with little competition

Summary & Conclusion

Neither the German nor the Canadian data that we collected fully confirmed the main hypothesis that it is EO per se that is responsible for Spin-Off success!

Our data very much suggest that factors in the environment of the spin-offs moderate the impact of EO and performance much more than has been acknowledged so far.

EO is a resource consuming process!

⇒ We think academic spin-offs are hampered due to limited pools of resources. These limitations include limited national technology infrastructures and limited market capacities for the development of new technologies.

Implications for Canada

Canadian spin-offs should be highly entrepreneurial.

- Design policies and programs to support entrepreneurial orientation

Entrepreneurial spin-offs may choose to look for niches in fields with less technological competition.

Should national priorities focus on high-tech entrepreneurship in less competitive fields ?

Discussion

Thank You!

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