

Commercialization of Photonics Technology , the Canadian way

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Objectives of my talk

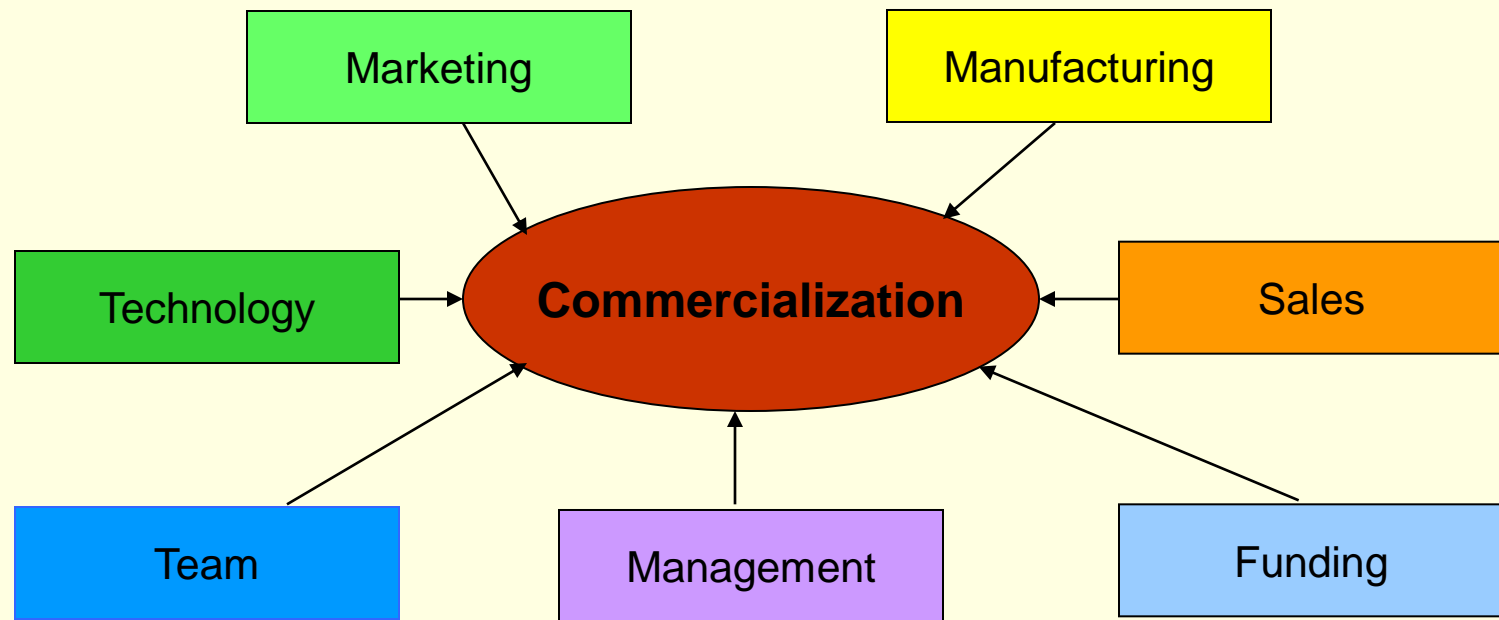
- Help you make a lot of money
- Help you shorten the time needed to commercialize your R&D results from 3-5 years to 1 or 2 years
- Use QPS as a case history and walk you through the process , Learn the ABC
- How BDC can help you !
- Yes! You can do it!

QPS history of commercialization

A long time ago, far, far away.....

- Layout software for advanced Diffractive Optics Elements-- Never commercialized but adapted into Phase mask design layout to a batch process
- Phase masks Technology, it happened because of Peter's 20 years of experience in Semiconductor, use of Electron Beam Mask making , readily available know how , equipment and process. I was lucky to come up with a good business model. Phase masks became batch produced , generating good profit. I was able to do it alone

I was able to do it as a one man show Commercializing the phase masks!



FBG technology, learn my lesson

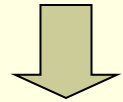
- Both development and commercialization were challenging
- I started by reinvesting profit from the Phase Masks , lots of capital equipment
- Hard lesson learned: each product required a different process , it was like a black hole
- Again I got lucky: 13 millions US\$ investment from Strategic partner to commercialize the simplest Product: the Pump locker
- Then the Telecom industry imploded

We thought we had a match!

- Power utility – hostile environment , a good technological fit!
- BUT--Customers do not want to be a Guinea pig , always ask for references
- Had to spend a lot of time to explain the technology and your solution
- We are too small to deal with these Fortune 500 customers
- They are only motivated by crisis

What is the issue here?

- Canada has excellent R&D support from the government : R&D Tax credit, IRAP, NSERC
Focus on developing break through technologies far into the future
- Lacking resources and limited home market
- Lacking mechanism that motivates collaboration



Lets learn the ABC

- A for Attitude
- B for Behavior
- C for Collaboration

Attitude: Be open & Share

You need help!

- Find a strategic partner
- Cultivate deep relationship with partners and customers
- Keep only what are critical
- Outsource wherever you can
- Your partner network will become your strength



B for Behavior

- Build a culture
- Hire people with Passion
- Hire people that fit the culture, not just for their skills
- Cultivate leaders, empower the team
- Trust builds Unity



C for Collaboration

- We simply cannot do it alone
- Respect each worker like an entrepreneur
- Allow diversity of ideas , Different can be better
 - Freedom to debate
- Make it safe to fail
- No #1 in the team!



Learn to Delegate

- Limited Sales and marketing organization Why not **Use Channels of the OEM partners**
- Weak in Manufacturing Why not **Out source**
- Lack Funding and no outside investment Why not **seek help from OEM partners**

Build volume no matter what!

- Crossing the Chasm is not for you!
- Better define some common elements in your technology
- Adapt your solution into more than one industry
- Build a team that is curious and nimble

Becoming Visible

- Be active and contribute to your target industries
- First file provisional patents to protect your interests, then open up
- Present your technology in conferences, it will attract potential partners like OEMs
- Be cognizant of new technologies and products you can integrate. Be innovative!
- Be grateful & open, you get what you give!

Get the team engaged with partners



Team needs Good communication skills

- Make it easy to collaborate , Bring Engage partners and OEM to interact with everybody
- Everybody needs digital skills
- Hire agile, curious, self confident people, who like challenges, committed to personal growth , work to help other succeed, work well with teams
- In search of Hybrid that looks like a T, T shape talent and T shape team

Bridge the Intellectual properties (IP) gap with the Engage program

- Bridge your IP gap by identifying university partner with more than 10 years experience in you target industries
- Simple procedure to apply (done by your partner ,a letter of support. No cash required)
- 25K to your partner for 6 months
- Can be extended by Engage Plus , need 12.5K from you for another 6 months.

Engage leading to other supports

- Technology transfer from University called the I2I program , maximum 120K\$
- Further refinement in research: CRD program
- There are also programs covering prototyping by engaging colleges with expertise ARD



Commercialization needs money

- BDC has helped QPS in its journey to commercialization in the form of debt financing
- They understand the need of small companies
- They are not scared by high tech
- EDC helps you export with Trade Commissioner services and export insurance
- If you are that good. Your OEM partner will help you, if you make it a WIN-WIN relationship



Yes, You can do it!

- Canadian Photonics companies had some unique problems, but you can solve them!
- Simplify the problems? Learn to collaborate
- Use the Engage program to secure University partners, find OEM strategic partners
- **Warning! You might need a different team to achieve commercialization (not your R&D group)**
- Debt financing is available thru BDC

Thank you for your attention

Please contact Peter Kung for more discussion

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