

Crystallizing Your Company

Workshop How to Create a Photonics SME

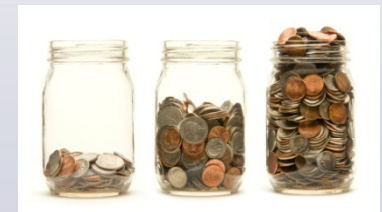
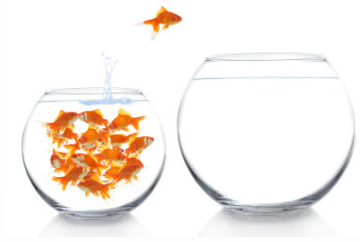
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4 focus points for crystallizing your company

- Why do it? Personal considerations
- How to develop a great product
- How to sell and market your product
- How to financially manage your startup



Why start a company?

- Startups are exciting and inspire



- Startups are essential for economic growth
 - Why are Google/E-Bay/Amazon/Intel/MS/Facebook all new?
 - What's true for economy, may also apply at a personal level
- Key questions
 - What's in it?
 - What are the risks?

What about risks and certainty?



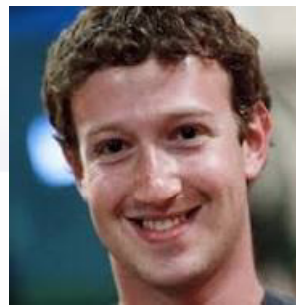
- Pensions are an important consideration
 - When joining a startup, you may lose what you've built up
 - But how certain is a pension at GM or Alcatel-Lucent?
 - You may be lucky, but it is better to control your own pension
 - US 401k plans are great and have been crucial for innovation
- Job “security” is considered important as well
 - But big companies can come and go (e.g. Kodak)
 - Japanese style job guarantee can turn a job into “a prison”
 - In the US, you often can get fired at notice (i.e. right away)
 - But this may not correlate with the overall level of happiness
 - In the end, two things count: your skill set and the economy

What are the benefits of starting?

- You build a broader experience and wider skill set
 - There is the starting, financing, and managing a company
 - In startups, people typically have to “do everything”
 - In big companies, there is competition for key responsibilities
 - Startups are typically at the forefront of innovation
- The financial reward can be better, though more risky
 - For example, startups often have option plans
 - And Bill Gates and Warren Buffet did not take a regular job
 - By the way, money should never be the prime motivator
- You can chart your own course
 - Live in the place where you prefer to live
 - Work on the products and technology that are at your heart



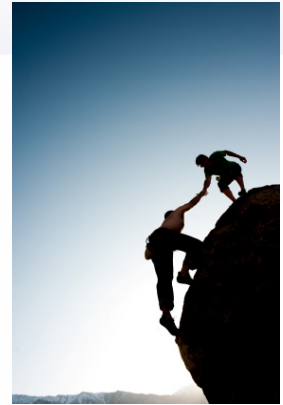
Start young or old?



- Start earlier
 - Pensions are less of a concern, you may not yet have a family
 - There is less risk avoidance / more adventure seeking
 - Building a company takes time and you may start several...
- Start later
 - Some experience really helps:
 - Product development, sales and marketing, HR, finance, production
 - Most of the needed skills are not taught at school / university
- Best may be right in the middle
 - Have a good bit of experience, but still be young enough
 - Remember that people always adapt and manage

Make certain your family is on board

- Starting a company is not a small undertaking
 - You will be working long hours
- There will be financial implications
 - You may have to invest your own money, there are risks
 - There are health insurance / benefits to consider
- It helps if your partner has a job
 - Two income streams help to diversify some of the risk
 - Better if not both work in a startup or in the same company
- It helps if your partner can think along
 - In the beginning you will not have any colleagues



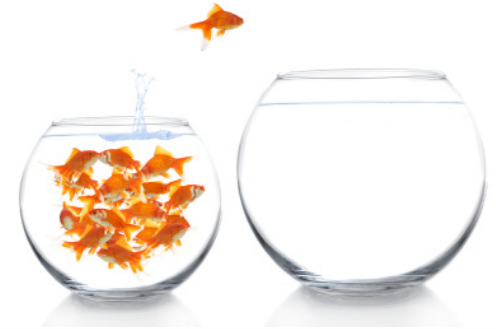
In the end, just do it



- **Definitely do your homework**
 - When starting yourself: make a business plan
 - When joining a startup: do your due diligence (like a VC)
 - And plan for your own pension
- **But it typically proves worth it**
 - You often learn more than what's possible otherwise
 - You can chart your own course
 - While more risky, it often financially rewards
 - You help innovation and the economy at large
 - And most “certainties” prove futile anyway

Product strategy: the issue

- You have great idea or technology
 - And based on that you create a product or service
- But by asking customers, you may not get the right info
 - Henry Ford is quoted as: “If I ask my customer what they want, they say a cart with a faster horse”
- And by looking at competition in detail, it puts you on the road to copy and make a “me-too product”
- And if there is a new trend, everyone will dive on the same topic (e.g. Si Photonics, SDN, 100G, etc)
- So how can you arrive at a differentiated strategy?



Differentiation



- With differentiation, you have to think different
- The product or service should be different from what's been done so far
- But you still need to address a current market need

Be ahead of the curve



- When developing a product, you need to be ahead of the competition when introducing your product
 - And developing a product may take 1 – 2 years
- Determine first where the market is heading and then develop a product that is differentiated when introducing it

Example in CPE for FTTH

- This the competition / current market demand for CPEs (Customer Premise Equipment or ONT or NID)



Home indoor CPE



Business CPE

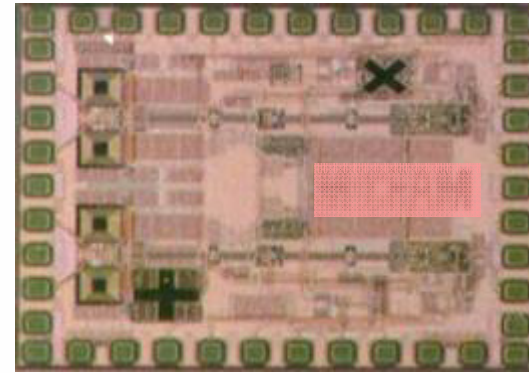
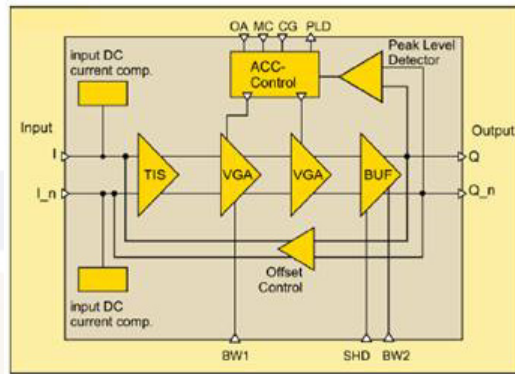


Home outdoor CPE

- Challenge was to come up with an offering to match current demand, while still being differentiated / ahead



Example in 100G Trans-Impedance Amp's



- Plan was to develop a TIA for 100G coherent (DP-QPSK)
 - But competition was already established
- Figured out that things would quickly move to 400G
 - 400G most likely would use QAM and/or super channels
- 400G can be done using the same receiver/TIA as 100G
 - BUT, you need to have very good linearity
- So the plan was to make a TIA differentiated on linearity

Engaging customers on new products is tricky

- Customer discussion is key when developing products
 - But customers do not like questionnaires
 - Best way to engage is in a “roadmap” discussion
- And is asked incorrectly, you get the wrong answers
 - Key questions have to be presented as trade-offs



Sales and marketing: getting customers



- Product idea only useful if customers flock to your door
- But incumbents have a brand and existing customers
- So how do you build this up as a startup
- Of course, you can do advertising and cold calling, but...

Chasing customers is not particularly effective



- Before the internet, mass marketing was common
- But with the internet, customers want to find you
- So your marketing efforts need to be more sophisticated

Sales (i.e. efforts to actively engage on leads)

- Repeat buys
- Referrals from customers
- Follow-up on inbound leads
- Introductions from friends
- Partnering
- Precision cold calling
- Random cold calling

“Warm”



“Cold”

Best, but only possible
for incumbents

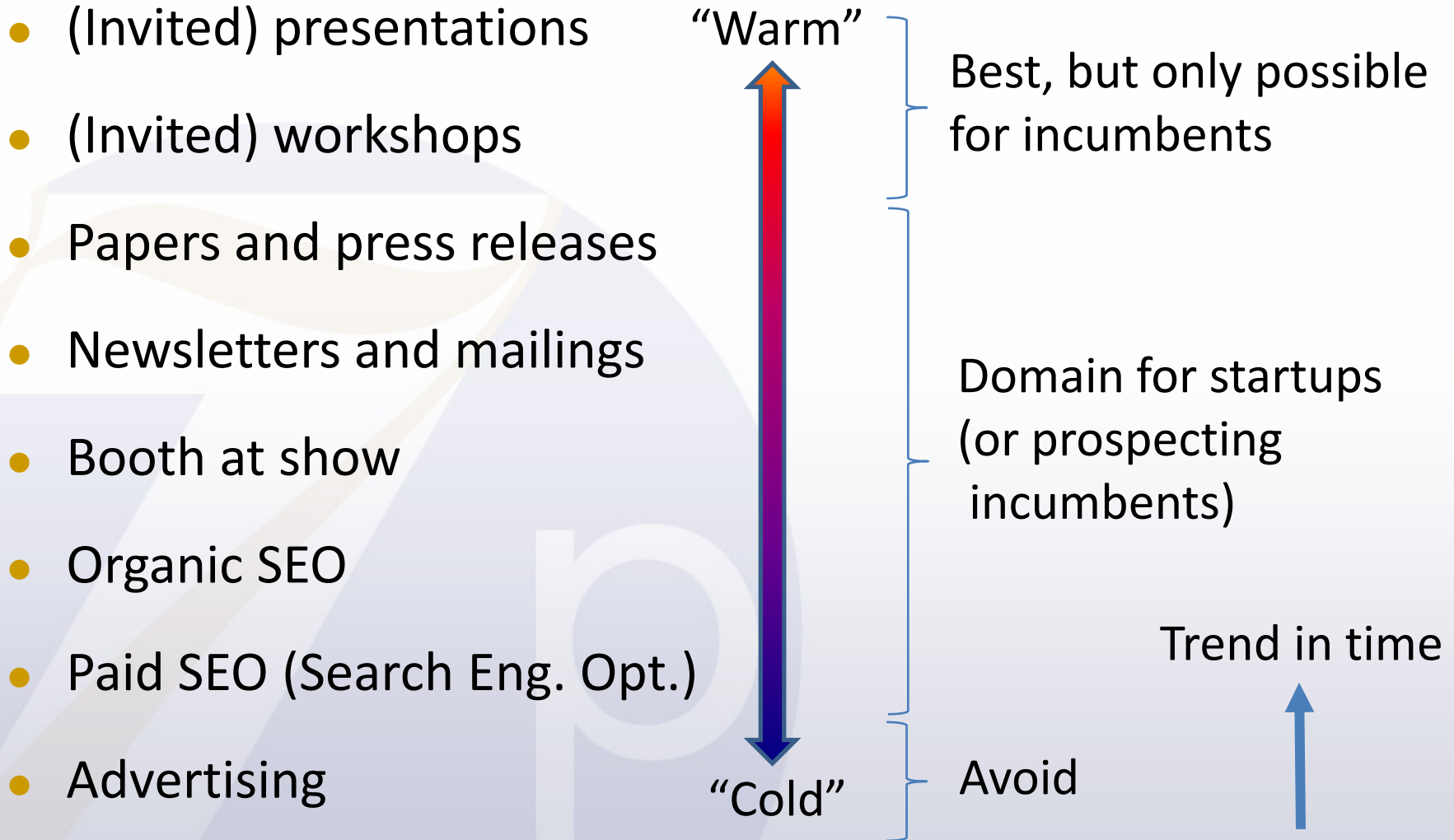
Domain for startups
(or prospecting
incumbents)

Avoid

Trend in time



Marketing (efforts to create inbound leads)



Guerrilla marketing for startups



- “Warm” marketing/sales to be preferred over “cold”
 - Not only nicer on both ends, but just more effective
- Creating inbound leads better than chasing prospects
 - Focus on getting the word out, so that people can find you
- Encourage referrals
 - E.g. give a discount if customers mention you in a paper
- Nobody is fond of (paid) advertising
 - Writing a paper for a magazine costs less and is more effective

Financially managing your startup



- No matter how good your idea, if you continue spending more than you earn, your company can not survive
- As long as you earn more than then costs, you continue to be in business
- When generating substantial cash, you have the resources to invest in new products, hiring people, new sales channels, acquisitions, etc
- In order to be attractive to investors, a company needs to create \$\$

Revenues: focus on customers



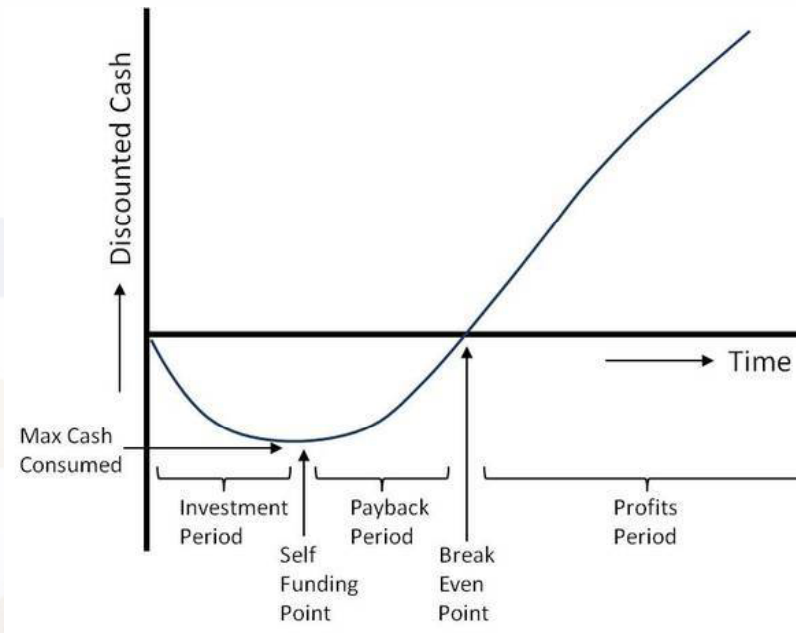
- Tendency can be to first focus on developing a product or first setting up shop, but focus should be on customers first
 - Serving customers is what generates revenues
 - Customers drive product development
- Let revenues drive expenses
 - E.g. spend on a lawyer for a contract after you get your 1st customer

Costs: be frugal



- It is hard enough to earn revenues, so be careful with any \$ spent
- In addition, spending money takes valuable time/mindshare
- Think big, but find good scalable solutions that are cost effective
- However, be good to your suppliers and build strong relationships

Minimize “the hockey stick”



- The hockey stick automatically assumes we invest first
- But there are ways to minimize/eliminate the initial investment
 - E.g. you can find a lead customer who wants to cofund the development
 - Or divide a larger project into smaller ones that can be cascaded
- Focus needs to be on generating revenues a.s.a.p. and minimizing costs leading up to that point

Reduce / manage risk



- A big company can afford a mistake (though never nice)
 - But for a startup, a mistake can be fatal
 - If you develop a product and you get it wrong, you may not have a 2nd chance
- So be keen to reduce risks where possible
 - Have samples tested to ensure customer buy-in or do a pilot run first
 - Diversity income streams and do due diligence on customers and vendors

Funding your company



- There are a number of ways to fund your company
 - Self-funded, friends, subsidies, banks, angels, VC
 - In principle all forms can work / be successful
 - Be aware that all funding other than self-funded has strings attached
- Building a truly large company will often take deep pockets
 - Be very selective and find really good VCs
- Taking an approach of being self-funded will put you in the best position to negotiate for funding

4 main conclusions

- Just do it!



- Be differentiated/ahead of the curve



- Focus on guerilla marketing



- Focus on customers, conserve cash, and grow



Thanks!

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