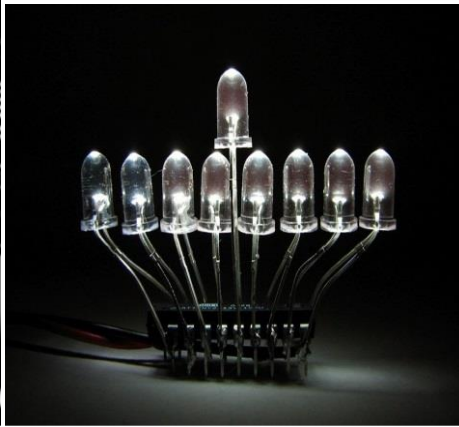
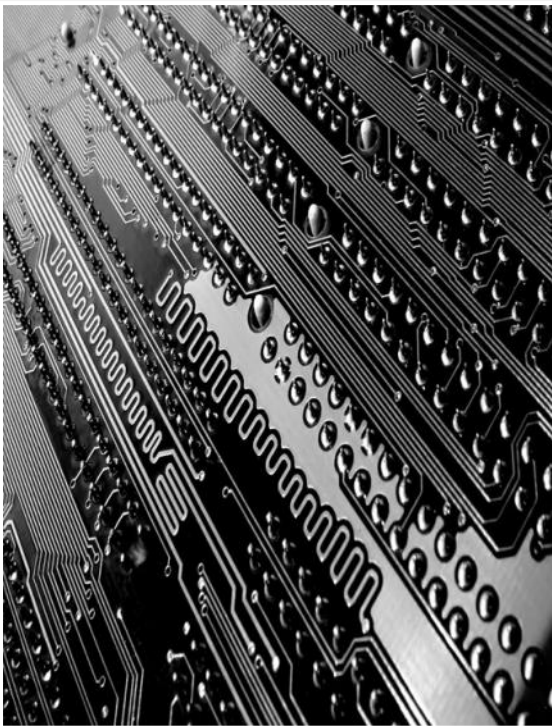
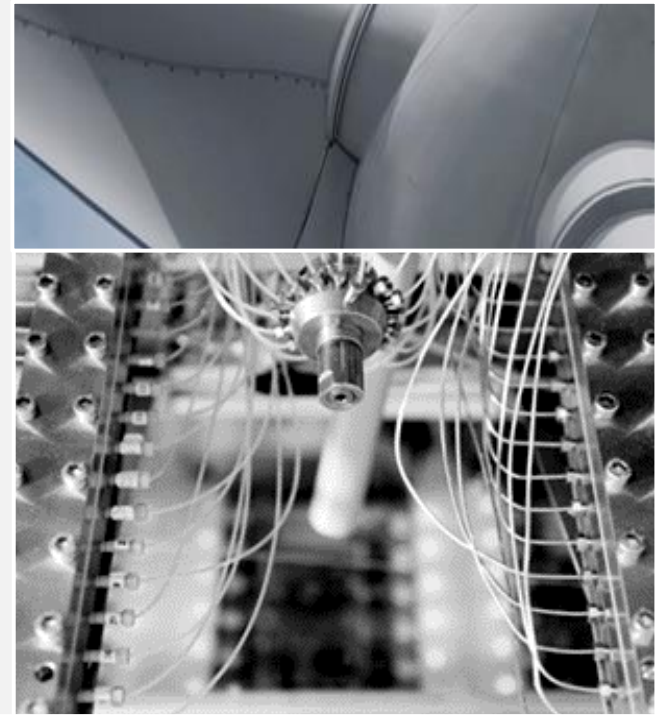


Lean start-ups and disruptive innovation

ECOSUMMIT Berlin

Alexander Schlaepfer, May 19th, 2015



A unique model to bring value to your business



ENERGY & RESOURCES INNOVATION



2 venture Funds (\$ 200m)

14 years of experience
(created in 2000)

UNIQUE SPONSORSHIP

ALSTOM

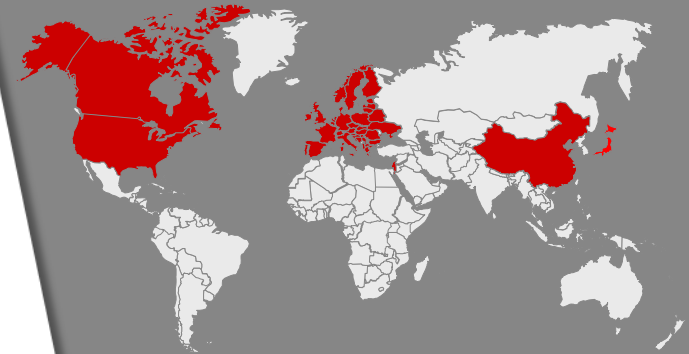
Schneider
Electric

SOLVAY
asking more from chemistry®

EUROPEAN INVESTMENT FUND

Unique access to sponsors' markets and technology experts

GLOBAL COVERAGE



4 offices locations

12 international team members

Tough fund-raising environment for Cleantech

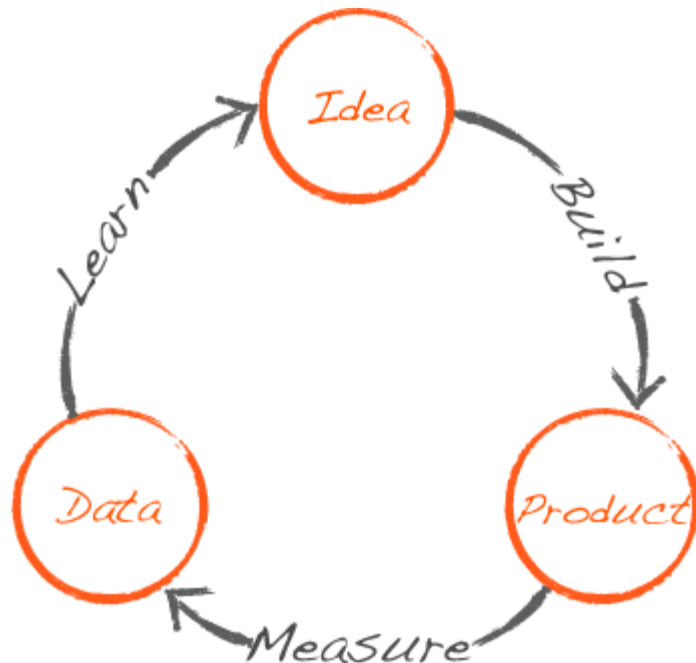


What gets funded by VCs today

- Capital efficient -> **lean start-ups**
- Fast track development, short time-to-market
- **Disrupting** stagnant traditional industries
- End-to-end products / services
- Highly scalable, recurring revenues
- Team: charismatic, industry experts

The lean start-up model - theory

Fast customer feedback, maximum capital efficiency



Pivot: fundamental shift in strategy (different customer group, alternative product benefit, ...)

Pursue: continue with strategy as long as growth and value hypothesis work
-> accelerate

How to go about it ?

1. Outline the 'vision' for your offer (product/service) and identify all **underlying assumptions**
2. Back assumptions with a set of testable hypotheses covering the **core value** of the offering
3. Define a **measurement framework** to test all your value and growth hypothesis against customer feedback
4. Build a **MVP*** and hand it to a group of launch customers. Based on measured feedback:
 - *Open source/make or buy:* use available platforms to the maximum
 - *Ferocious customer-centric,* with rapid iteration
 - *Business model* is a core element of product/service

* Minimum viable product

Lean start-ups in practice - Silicon valley leads the trend, again



pebble



eugust



MISFIT



canary



A wave of successful B2C startup companies

What do they have in common?

“Find 100 customers/users, before you build your product/service. Build it for them, and make them love it!”



\$10.3m
Dec. 2012
Kickstarter

pebble

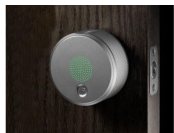
\$15m
May 2013
Charles River Ventures



\$850k
Jan. 2013
Indiegogo

MISFIT

\$15.2m
Dec. 2013
Charles River Ventures



\$2m
May 2013
Company website

August

\$8m
Nov. 2013
5+ VC investors



\$2m
Aug. 2013
Indiegogo

canary

\$10m
Mar. 2014
Khosla Ventures

Can we do 'lean' in capital goods ?



We can certainly pull some of the key levers

- **Make sure you build your business on sound assumptions**

- Don't fool yourself:
 - *Green / low carbon footprint*: What value do your customers really assign to a ton of CO2 ?
 - *Energy efficiency pays for itself*: Are energy prices really increasing ? now, in the future ?
 - 3-year payback: for what ? The product, the installed product, the integrated operating installed product ?

- **Use available platforms**

- Proven existing technologies, 3D printing, open source electronic hardware etc.

- **Win paid pre-orders**

- Get customers to pay for PoC an PoV

- **Recurring revenue Business Model**

- H-a-a-s – but is financiable only with short-payback time, mobile assets or <\$1000 product

- **Pivot**

- Don't wait 3 years to change your strategy

An Example from Aster's portfolio



Etogas, Stuttgart/Germany, leader in Power-to-Gas technology

- **Make sure you build your business on sound assumptions**
 - Core element of the business model is to work jointly with customer on feasibility study for his project
- **Use available platforms**
 - Pilot plant built with proven technology (electrolyser from Enertrag, Methanation from MAN)
- **Win paid pre-orders**
 - Werlte 6.2MW pilot plant, fully paid by AUDI AG
- **Pivot**
 - Put stronger focus on Power-to-Hydrogen, electrolyzer development

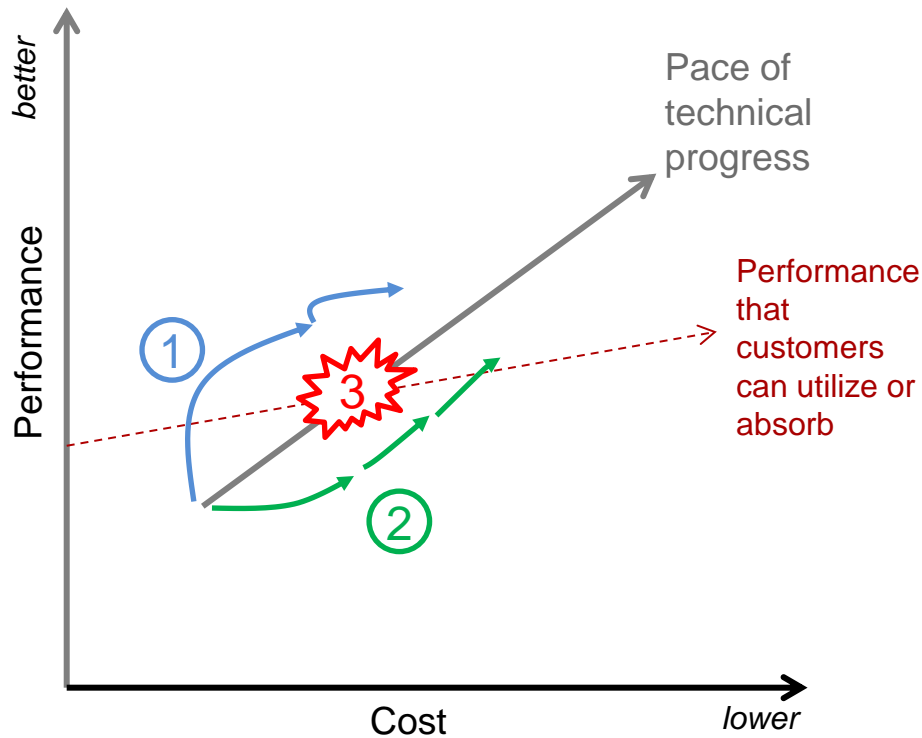


Minimum Viable Product: 6.2MW Werlte Pilot Plant, commissioned June 2013

Two thoughts on Disruptive innovations



Clayton Christensen adapted – there is a 3rd strategy



Strategy 1 – better product in established market

- Leapfrogging performance is possible, but pushes into a high-end niche
- Poor economies of scale
- Incumbents almost always win

Strategy 2 – low-end disruption

- take root in simple applications at the bottom of a market and then move up
- New entrants almost always win

Strategy 3 – ‘Delight your customer’ (Kano Model)

- Deliver higher user value or value chain experience
 - Better UI
 - End-to-end service
 - Unique features that ‘stick’



Thank you!

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Aster's last investments



Breakthrough liquid cooling technology for data centers.



Leading modeling platform for complex systems.

