

# 15 Years of Tech-Transfer Experience

## - Lessons Learned and Trends Observed -

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BONITA Final Conference

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## Anniversary of Latvia Independence

**18 Nov 1918**  
**Latvian People's Council**  
**declared Latvia's independence**



## About CDT



[www.cdt.ltu.se](http://www.cdt.ltu.se)

## High Performance Internet Routing Algoritm

### ■ TRANSFER

- Technology: Routing Algoritm
- Vehicle/Path: Offspring Company

### ■ STORY HIGHLIGHTS

- Offspring Company formed (in secrecy) by subgroup of researchers and external "business angels"
- CDT partners not included got furious
- How to package offer? – Blue box (router)
- Difficult to estab. position on mature market
- Weak business (founders became rich on VC though)

### ■ LESSON LEARNED

- Include all (source) partners in dialogue prior to commercialisation
- Reassure to have 100% control of IPR
- A easy-to-understand value offer is a huge advantage
- A mature market is a nut with hard shell



## Internet Conferencing System



### ■ TRANSFER

- Technology: P2P/Multicast based system for "rich" multimedia meeting/conferencing over the Internet
- Vehicle/Path: Offspring company

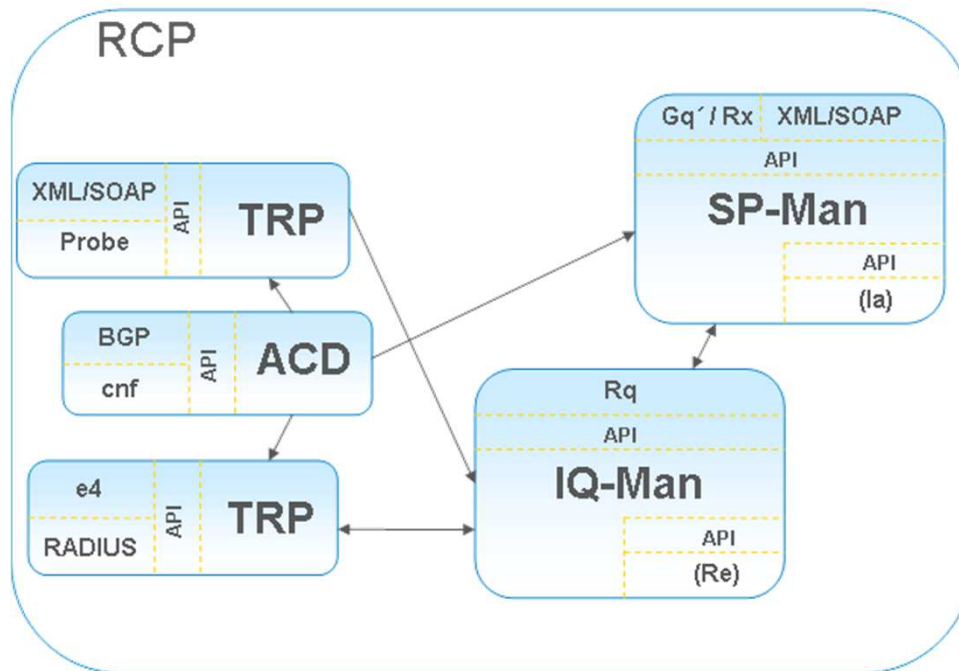
### ■ STORY HIGHLIGHTS

- Inclusive dialogue → Smooth IPR control
- IP Multicast not adopted, PC/OS bad at media handling (spec. audio)
- Tried to sell "big bag of new things" was beaten by competitor selling one thing!
- Expected implication is a change of customer behaviour

### ■ LESSON LEARNED

- A bag of new (unfamiliar) things is not attractive!
- If your offer requires that customer change habits, approach slowly with patience and sell step-wise
- Adjust to market maturity. Avoid "bleeding edge"
- User-driven professional design is instrumental

## Internet Quality of Service (QoS) Control Architecture



### ■ TRANSFER

- **Technology:** Principal and practical architecture for Internet QoS.
- **Vehicle/Path:** Offspring company

### ■ STORY HIGHLIGHTS

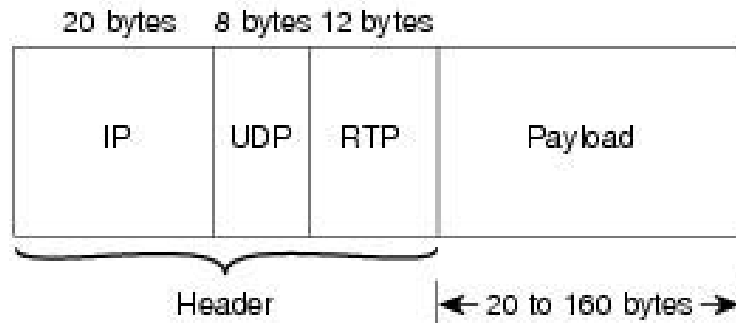
- Good mixed (tech/customer) focused team
- Threshold to accompl. first func. & benefit
- Customer business opp/value not clear
- Tech not ready → Need for capital
- “Bad” VC takes over and kills company

### ■ LESSON LEARNED

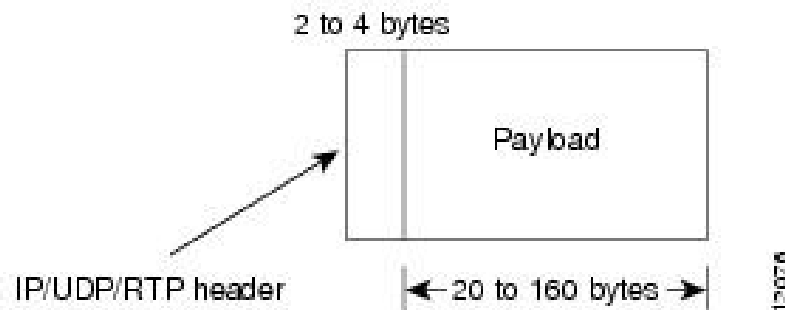
- Necessity to reduce/eliminate customer Rol thresholds
- Necessity of understanding value creation
- How to recognize and avoid “bad” VC

# Header Compression

Before RTP header compression:



After RTP header compression:



## ■ TRANSFER

- **Technology:** Principal solution for IP package header compression to increase payload%
- **Vehicle/Path:** Global Telco Sys Provider

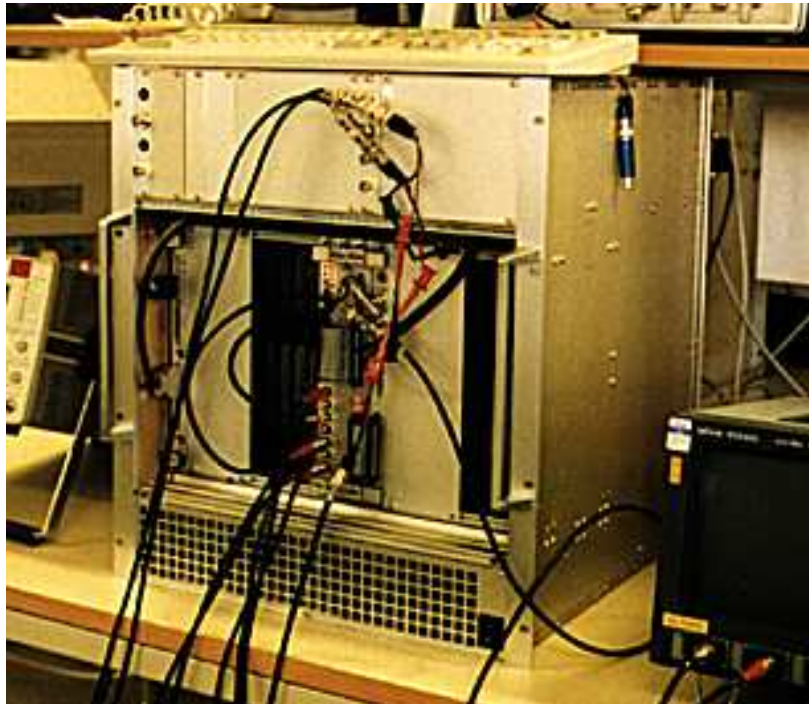
## ■ STORY HIGHLIGHTS

- Clear industrial desire/opportunity
- Tight R&D collab betw Academy and Industry
- Good results (main researcher awarded)
- Result standardized and adopted world-wide

## ■ LESSON LEARNED

- Most important actions took place before research results were achieved
- The power of true needs and basic principle how to estimate “need value” (desire value).
- The potential of strong “RDI integration”
- Big value/impact (but very hard to estimate exactly)

## Broadband Capacity over Copper Cables (OFDM)



### ■ TRANSFER

- **Technology:** Unique signal processing (OFDM) solution, to be implemented as chip-design to enable broadband capacity over copper cable
- **Vehicle/Path:** 1) Knowledge transfer to R&D partner company. 2) Offspring company

### ■ STORY HIGHLIGHTS

- Long/Close academy/industry collaboration
- Difficult to estab. position on mature market  
Sell design or chip? Targeted customer?

### ■ LESSON LEARNED

- Again! - A position/packaging/offer challenge
- How to get resources to go from prototype to product - without losing all IPR to VC or customer.
- Again! – Professional design under-estimated



## Speech NewsPaper Receiver



### ■ TRANSFER

- Technology: Speech paper receiver
- Vehicle/Path: Offspring Company

### ■ STORY HIGHLIGHTS

- Target known customer purchase process
- Specific well known market and well known competition (that could be beaten)
- From idea to company revenue in 12 months

### ■ LESSON LEARNED

- Importance of TRUST - use channel!
- Focus on Customer → VC not needed
- Benefit from open source community  
→ channel to reach customers  
→ elastic inexpensive development capacity
- Confidence in market trigger expansion

## "Greener IT" by extreme compress/search algorithms



- **IT consumes ~5% of world's electrical energy**
- **Web info doubles approx every 9-12 months**
- **Algorithm saves 60-95% processing/storage cap ("EU phone book" in mobile device with 30ms acc)**

### ■ TRANSFER

- **Technology:** Compression/search algorithms that enable significant energy savings
- **Vehicle/Path:** Offspring Company

### ■ STORY HIGHLIGHTS

- 8 key patents
- "Single brain" research
- Researcher takes role as CEO
- Technology is "unbelievable" (though proven)

### ■ LESSON LEARNED

- Researcher (CEO) looks for brain challenging needs/customers, while company needs to find repetitive business for big revenue
- Company's highly competitive technology is perceived as "hostile competitor" by customer R&D department
- Initial HW-Chip OEM → Customer hesitation and very long time to volume-based payment

## "Sensor System Solutions for Smarter Traffic Environments"



### ■ TRANSFER

- **Technology:** Sensor system solutions for smarter traffic environment
- **Vehicle/Path:** Offspring Company – New!

### ■ STORY HIGHLIGHTS

- Offspring just started (~ 1 month ago)
- First deals closed (FBC found)
- More info by Arne Gylling, CEO

### ■ LESSON LEARNED

- The power of having early FBC
- Importance of professional design

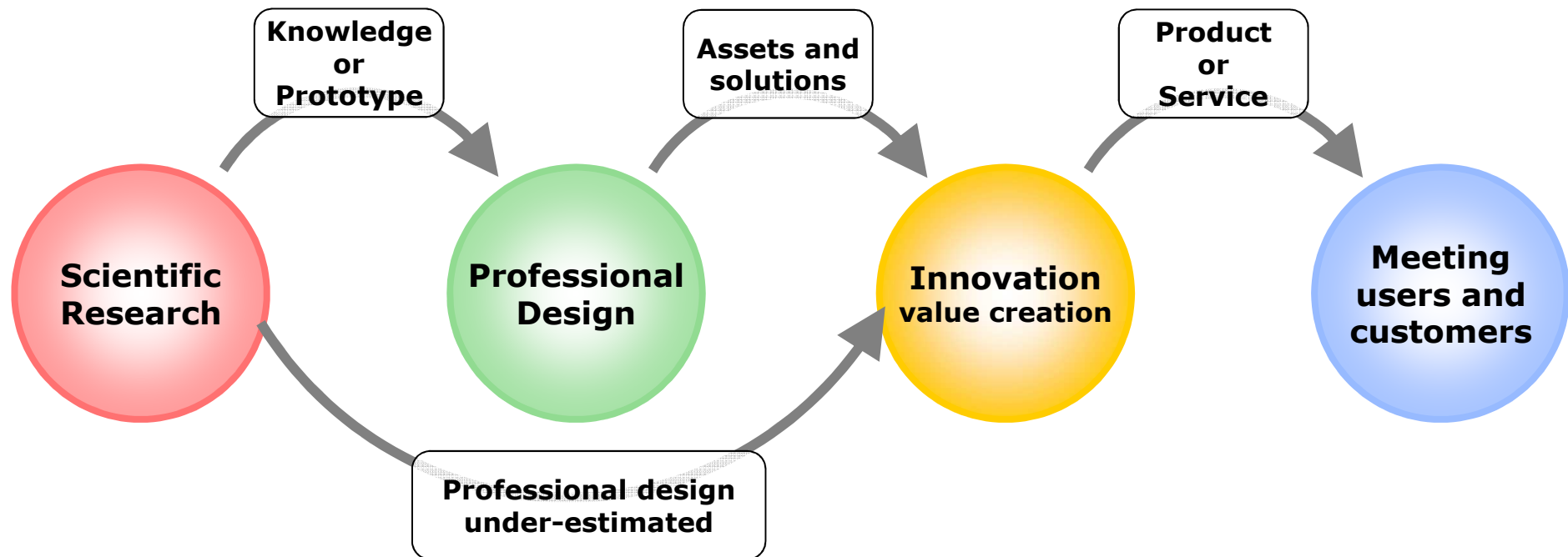
## Appreciate and learn how to leverage on differences



## How to involve users and run live experiments

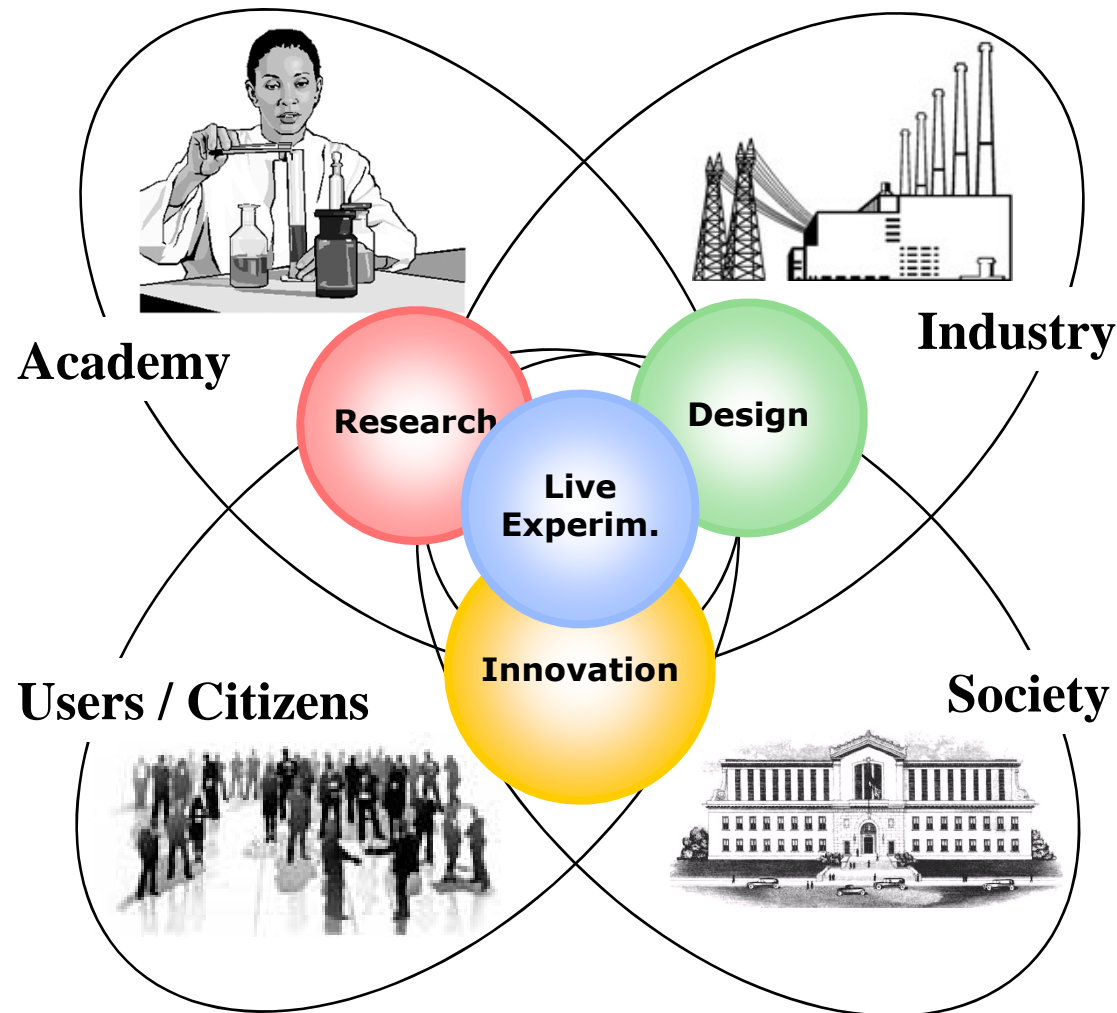


## Conventional Paradigm (inefficient)

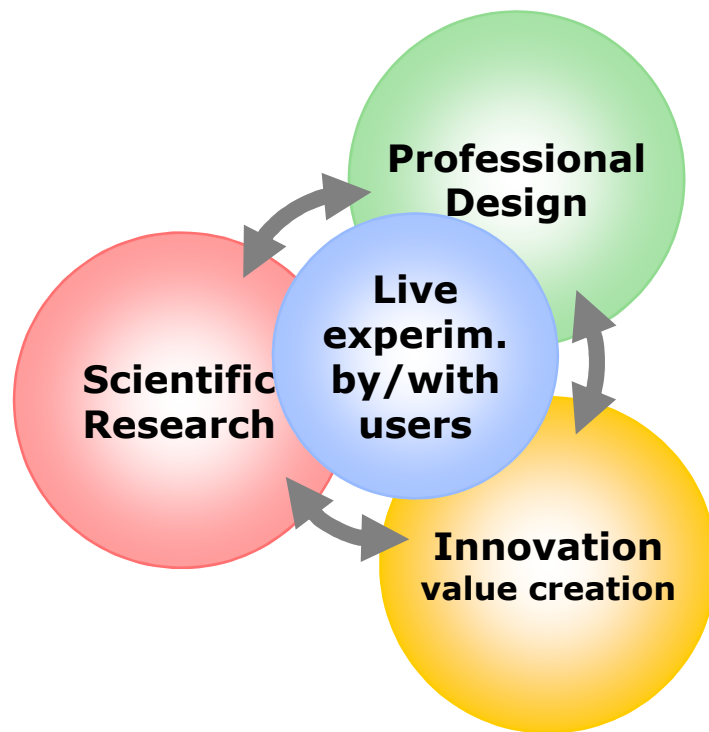


- **Transfer loss of knowledge → Weak basis for value creation**
- **Transfer time-delays → Slow time-to-market**
- **Weak feed-back → Weak bias for improvement**
- **No direct research-business contact → Loss of opportunities**

## Integration of Actors and Actions for improved total (RDI) efficiency



## Offer



**CDT offers cross-border integration of research, design and innovation for concurrent and efficient generation of new knowledge artefacts and business in ICT**

- **No transfer loss of knowledge**
- **Faster time-to-market**
- **Stronger basis for improvement**
- **More opportunities taken care of**



## Trends Observed (in IT)

- VCs take less risk nowadays
- Academy/Industry collaboration has improved
- Telco operators cut hard on R&D (internal and collaborative)
- A need to principally understand new and quite different business models
  - often based on user generated assets (some still to be proven valid)
- Tech-transfer opportunities in context of;
  - open source
  - cloud computing
  - crowd sourcing
- Need for speed!
  - Best available "driver"
  - Most significant asset/attribute
  - Simplest offer
  - Nearest customer
  - Fastest income
  - Repeat



## Bonita Project



- Enabled us to improve our TT capability in terms of show-room and TT-collaborative spaces
- TT capability assessments have triggered discoveries, discussions and improvement actions.
- Looking forward to perform real TT activities jointly with Bonita partners (likely a subset of most interested/relevant partners for each case)
- Looking forward to try/use Bonita TT model (TT maturity assesment model)
- Valuable sustainable assets have been created
- A great and well managed project approaches its conclusion

# End of Presentation

## Tech Transfer Experience at CDT Lessons Learned and Trends Observed

**Mikael Börjeson, CEO**



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