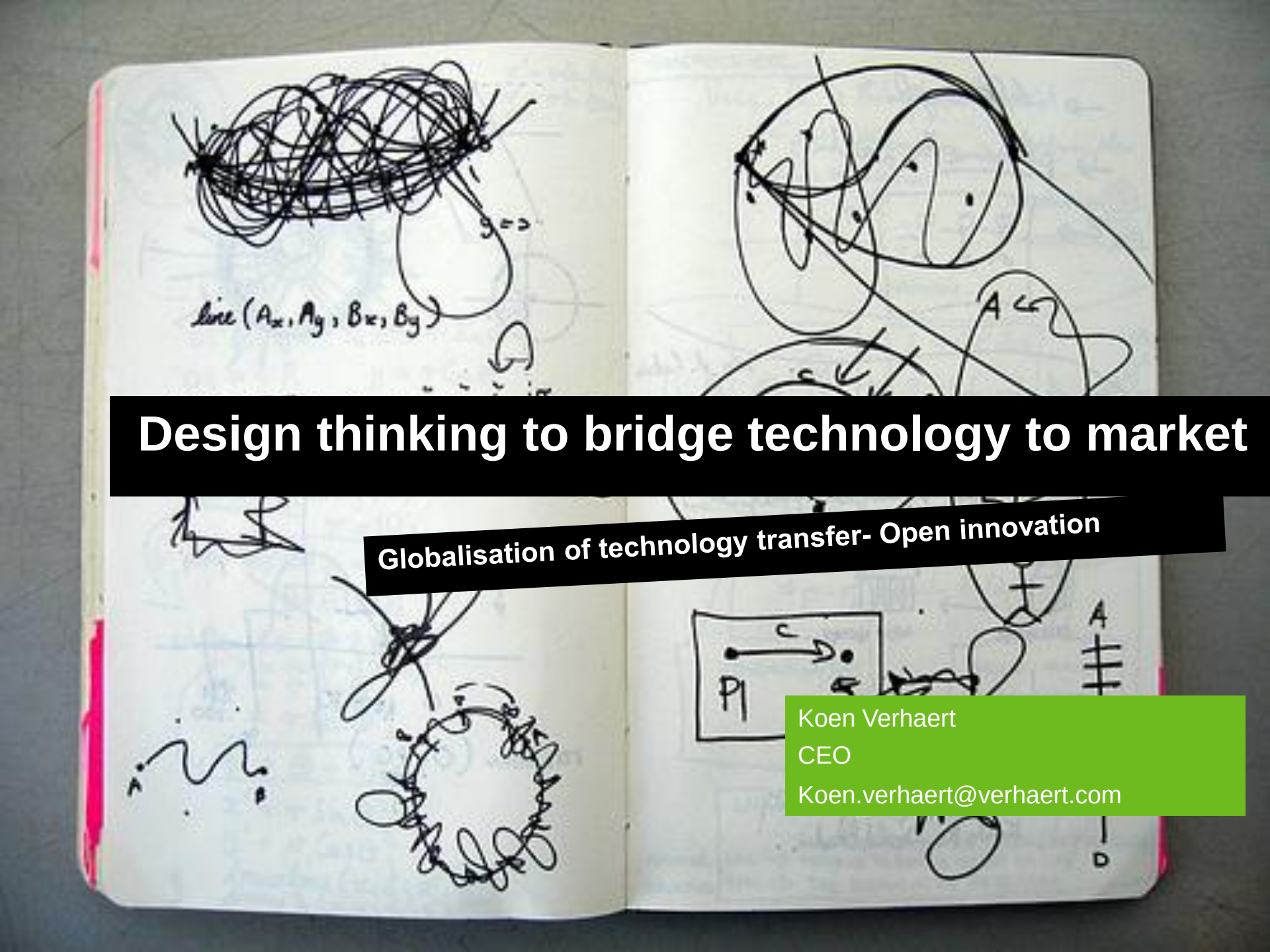

Design thinking to bridge technology to market

Globalisation of technology transfer- Open innovation

Koen Verhaert
CEO
Koen.verhaert@verhaert.com

Content-Design Thinking & Tech Transfer

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1. My background

2. Traditional versus new perspective on technology transfer.

3. What is needed for technology transfer 0.2

4. Conclusions

My background

- CEO **VERHAERT** MASTERS IN INNOVATION®

  A leading European contract R&D center & innovation consultant.

  +10 Years Technology transfer @ QinetiQ Space.(Previously Verhaert Space)

- TII -Technology Innovation International, Member of the Board
- Industrial Research Fund, University of Ghent, Member of the Board.

- **Primary education**: Industrial Design , Eindhoven, Netherlands

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We are an integrated product innovation center.

Our technology programmes transfer advanced technology towards valuable applications

www.verhaert.com

Proba Satellite

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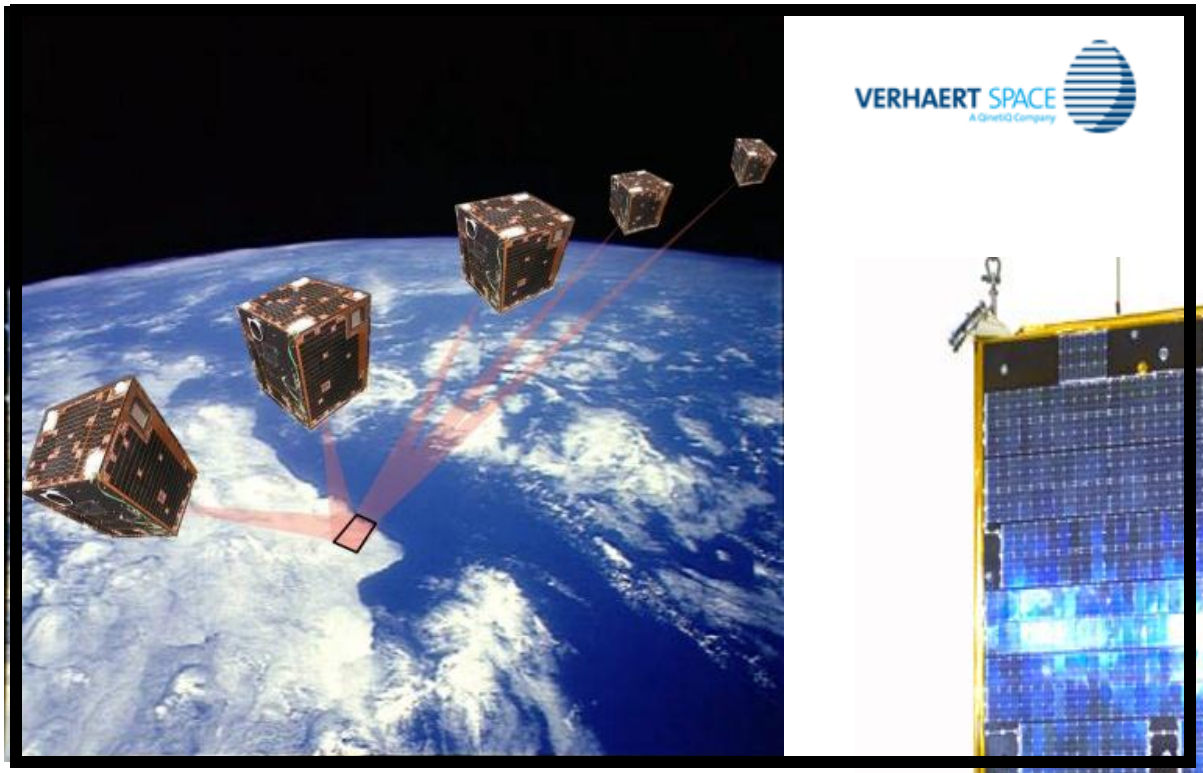

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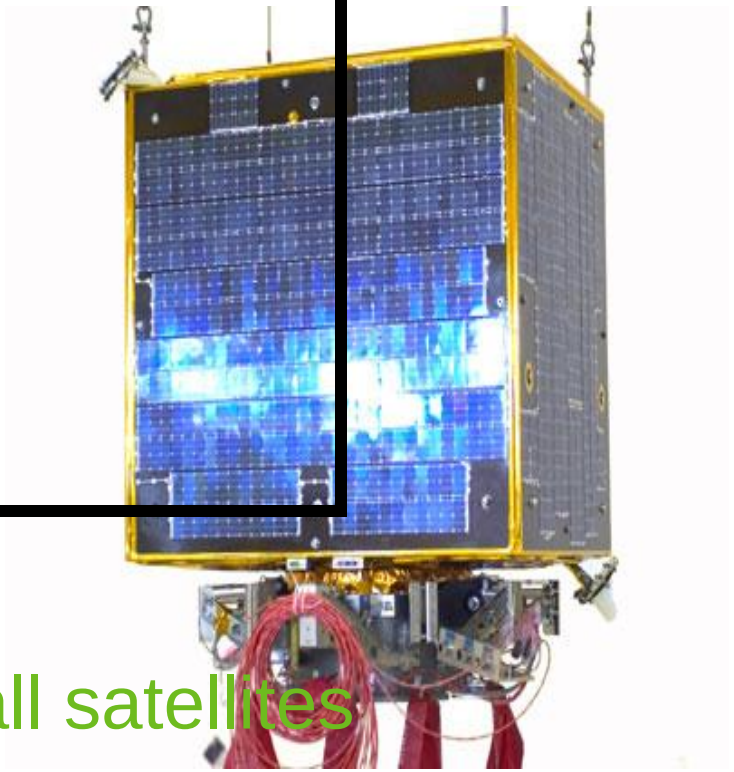
QinetiQ



Enabling technology:
Motion technology (AOCS) for small satellites

中国联通 3G 15:26 85%

www.81tech.com/news/hangtian-jishu- Reader Zoek

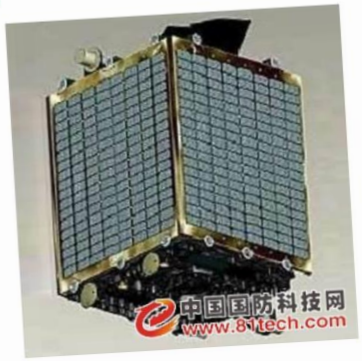
欧空局Proba-V微卫星接近完成_航天技术与产品_航... 印度成功试验本土研制的低温发动机_航天技术与产品_航...

欧空局Proba-V微卫星接近完成

发布日期：2013-01-18

核心提示：[据美国红轨道网站2013年1月14日报道]欧空局（ESA）正在对其Proba-V微卫星进行一系列试验，确保卫星完全就绪。卫星将每两天对全球植被情况进行观测。这颗微卫星将在4月发射，星上携带的植被传感器是法国斯波特-5卫星植被传感器的小型版。目前Proba-V卫星正在法国图卢兹

国防科技网（81tech）讯：



[据美国红轨道网站2013年1月14日报道] 欧空局（ESA）正在对其Proba-V微卫星进行一系列试验，确保卫星完全就绪。卫星将每两天对全球植被情况进行观测。

这颗微卫星将在4月发射，星上携带的植被**传感器**是法国"斯波特"-5卫星植被传感器的小型版。目前Proba-V卫星正在法国图卢兹专用设备间进行试验，对卫星的发射条件、高度真空及其在太空中即将经受的极限温度进行严密的模拟。欧空局称微卫星的集成工作由主承包商奎奈蒂克（QinetiQ）太空公司完成。

卫星的主要对地**监视设备**是一个广角**望远镜**，还有一对射线传感器、一个光纤连接器实验、一个半导体无线电转发器样机和一个跟踪**飞行器**飞行的试验接收器。Proba-V卫星将观测兼容的光谱，其空间分辨率更加精确。该卫星的有效载荷符合欧空局Proba卫星系列的标准，该标准旨在帮助一些小公司有前景的新技术进行太空实验。

Proba-V是一个准运行任务，为一批准用户提供服务。它将打破法国"斯波特"-5卫星服役15年的对地观测记录。目前，全世界有100多万个植被产品的注册用户，卫星数据已经为上百份出版的科学报告提供了帮助。Proba-V将是世界上首个从飞行器上探测自主依靠监视传播信号的太空任务。这也将能为空中交通情况提供概览帮助。（**中国航天**系统科学与工程研究院 陈菲 侯丹）

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Motion technology for Marine applications

Motion technology for Personal Navigation

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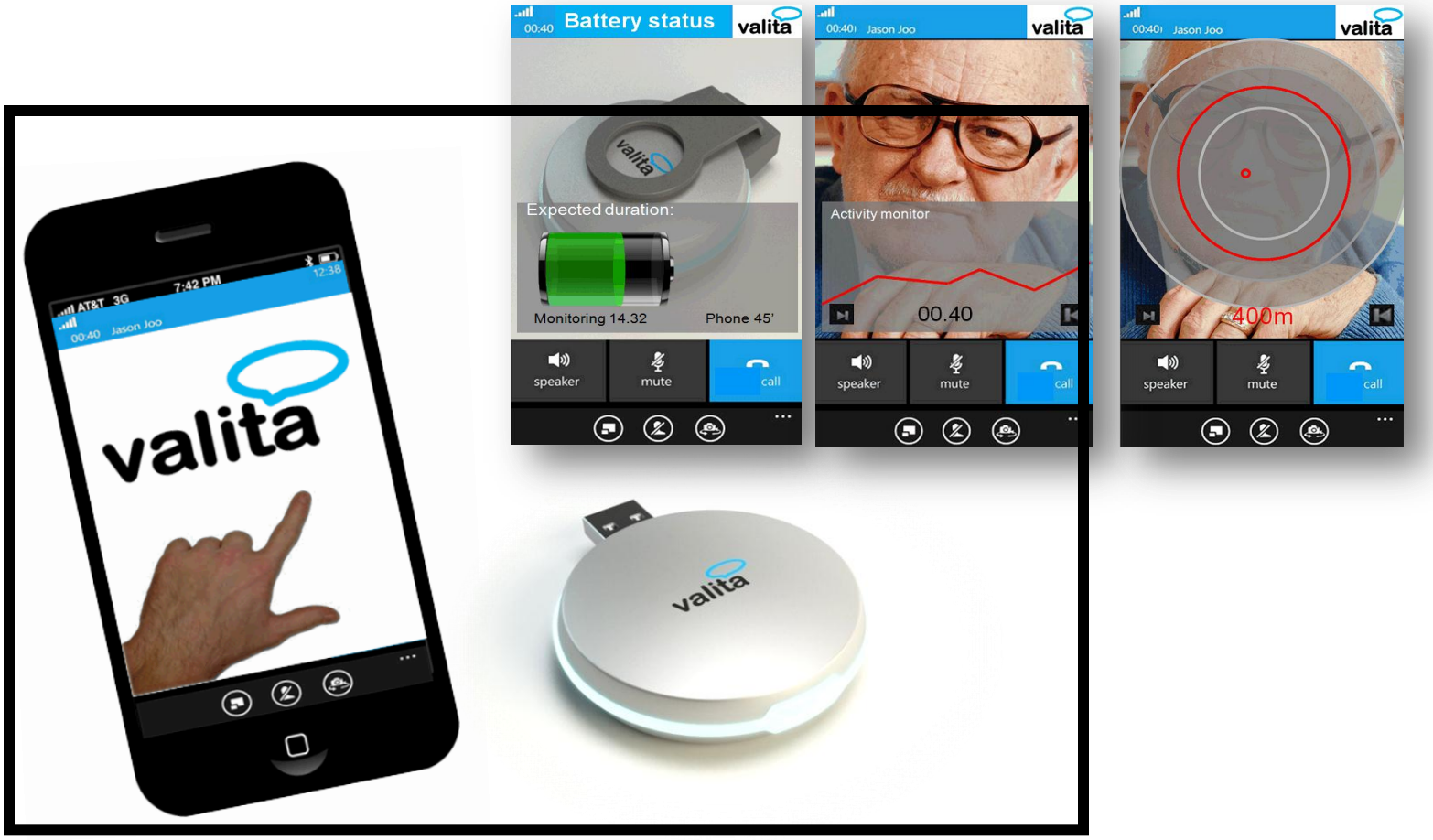


Motion technology for Elderly monitoring

Traditional perspective ?

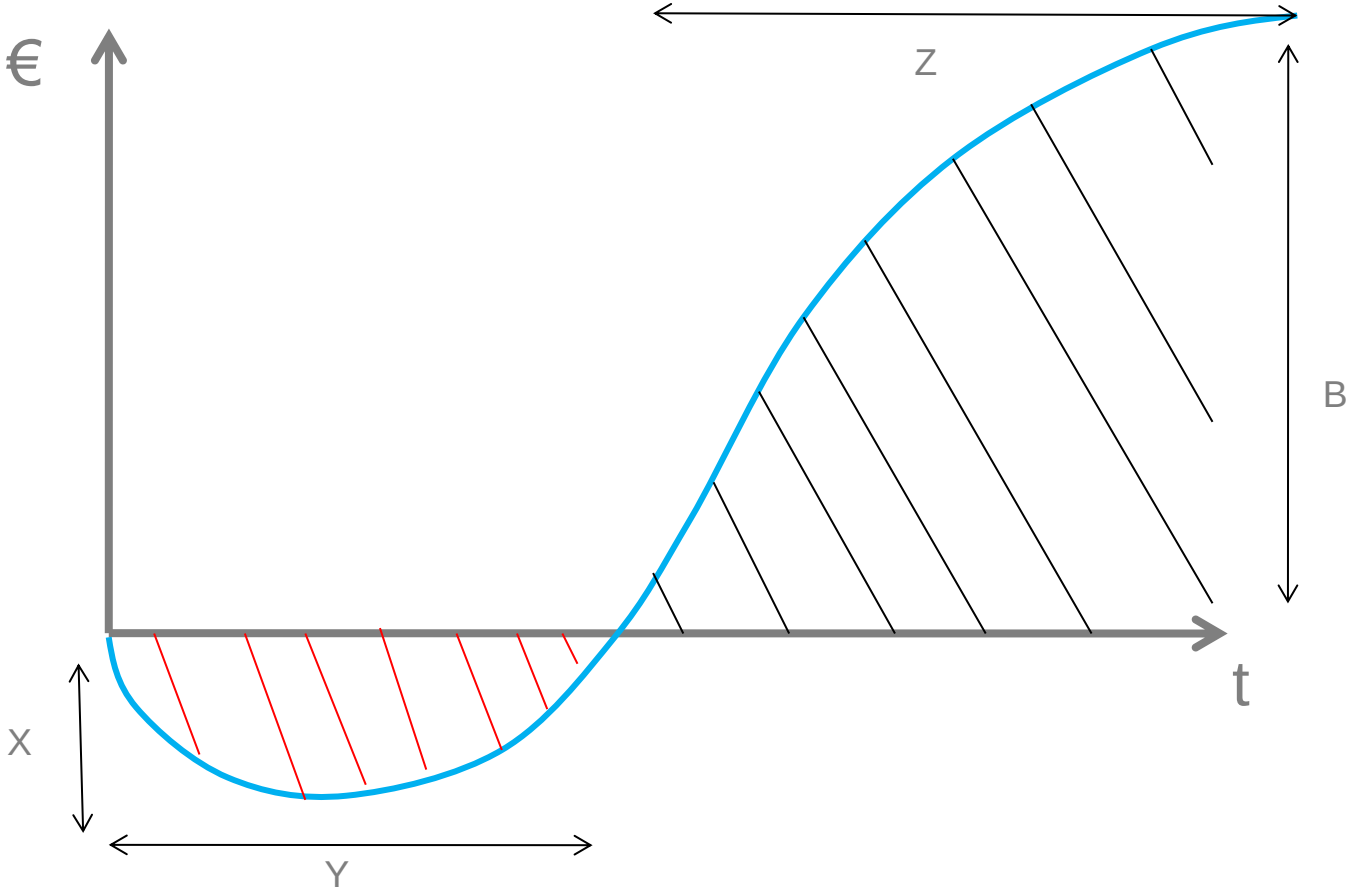
Network & IP based


Towards a new perspective ?
Creative & value generating

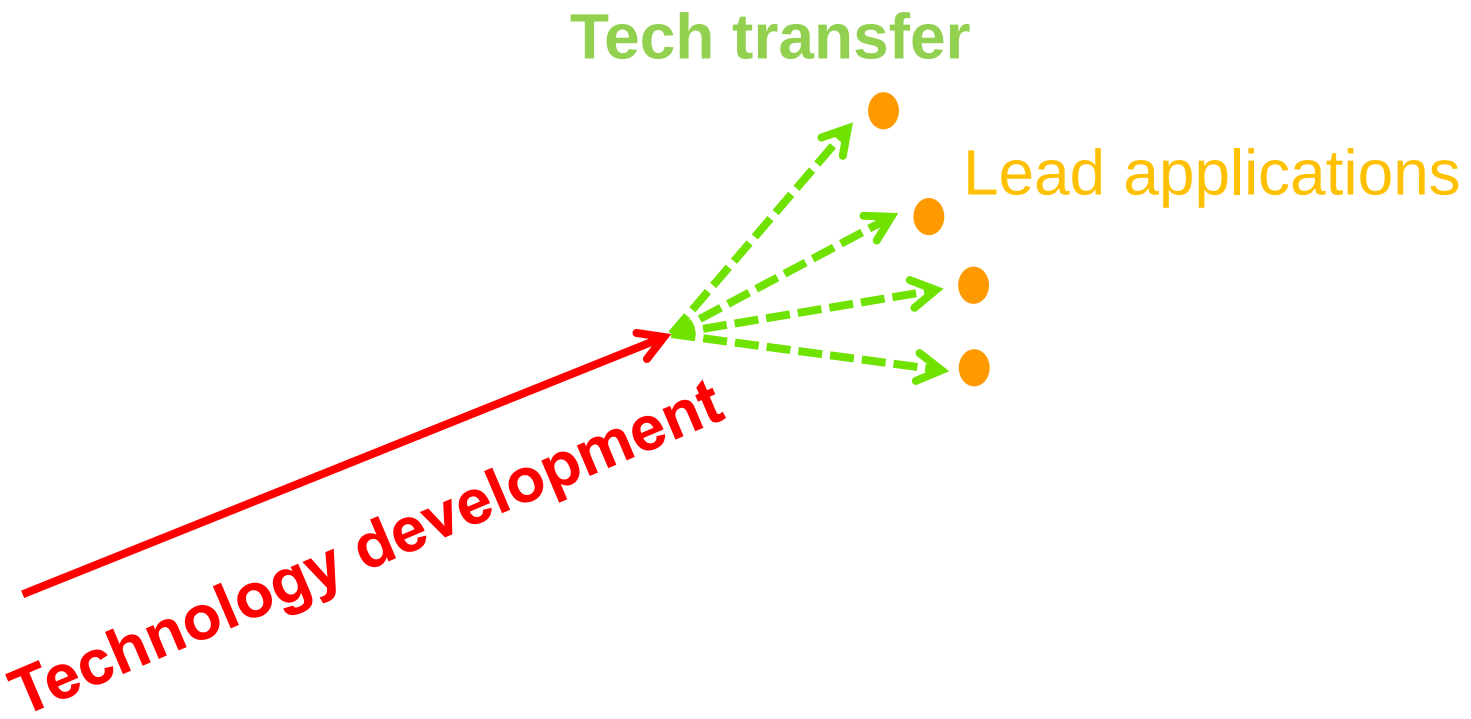
Impact: It's not a free ride

It 's not about plug-and play solutions ….

Upfront investments to be made & managed



Traditional perspective: linear model

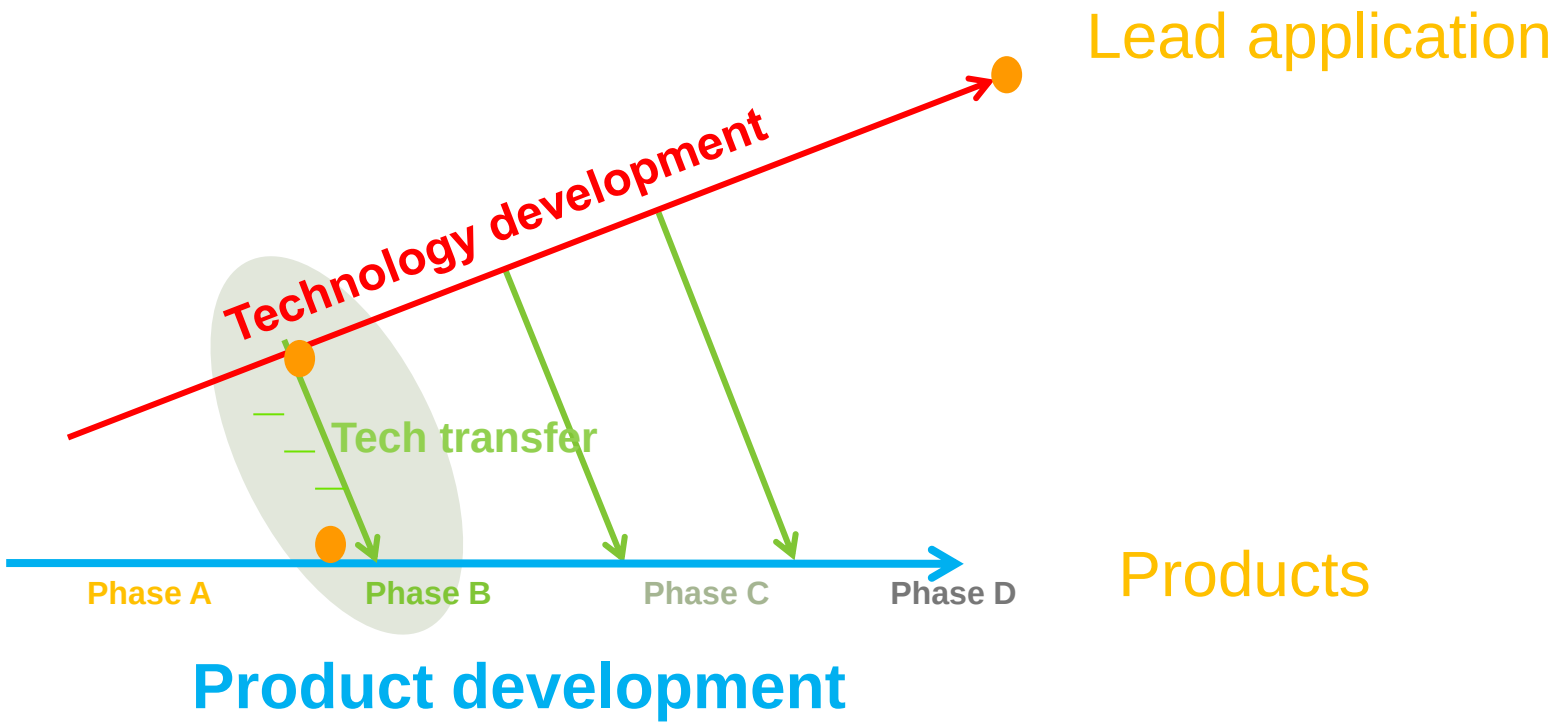


Lead application must be challenging for technology development

≠no guarantee for succesfull commercialisation

SIDS monitoring as lead application for streatchable sensors & electronics in wearables.

New perspective: concurrent & integrated model



-How to define the “just good enough” output of technology development? (Criteria)
-How to define value creating applications? (Drivers)

Criteria for added value

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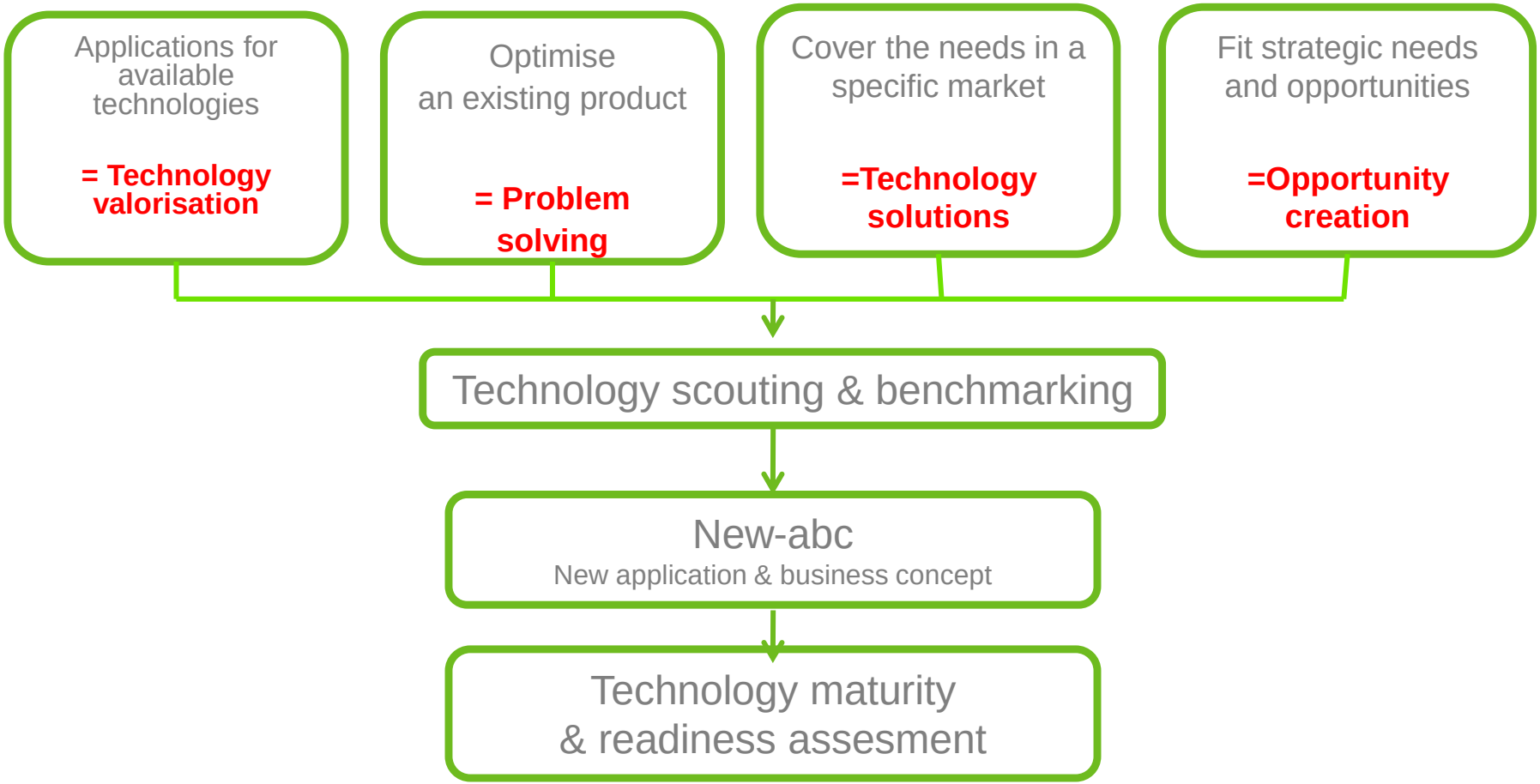
Differentiating capacity

Need for a multi-disciplinary & human centered approach !

Drivers towards technology transfer (from company perspective)



Need for creative and explorative thinking !

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Critria to be choosen as technology provider

Traditional perspective:

-To be succesfull in technology valorisation you must be leading in your technology domain.

New perspective:

-To be succesfull you have to understand explicit and latent needs.
-Have the best fit with non-technology requirements.


TECHNOLOGY TRANSFER
What is needed for technology transfer 0.2

V02 / What is needed

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-Multi-disciplinary & Human centered approach

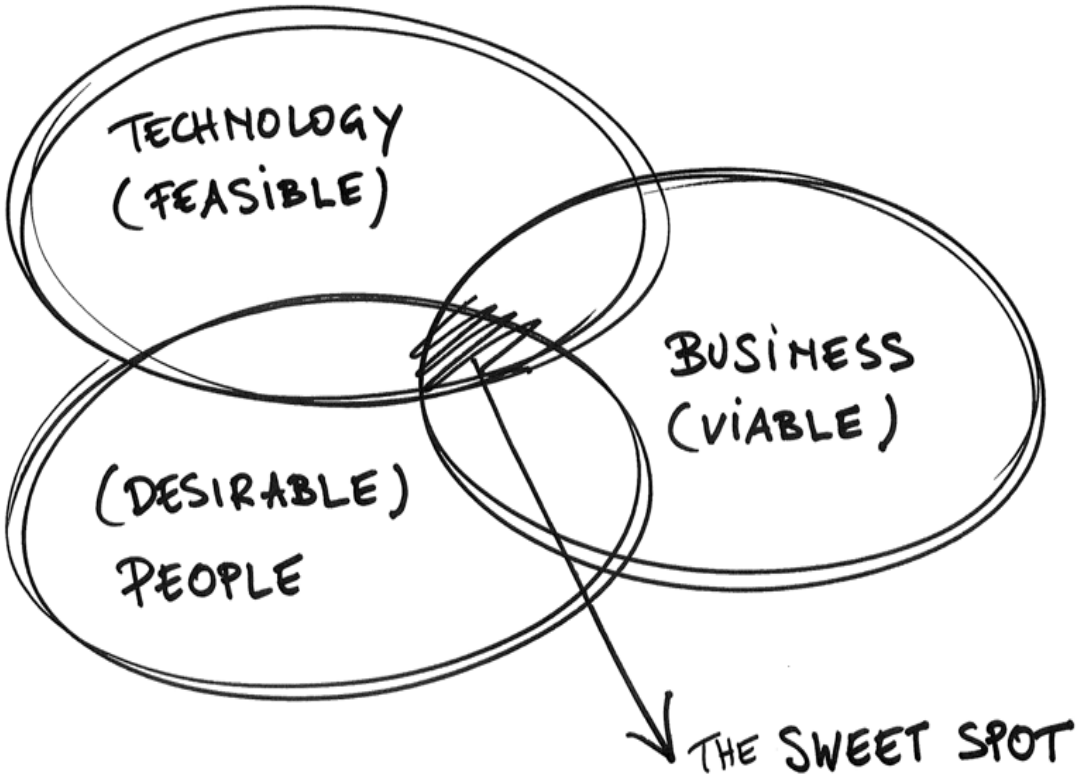
-Creative & explorative thinking

-A new communication language/ Visual thinking

Design Thinking:

A protocol for solving problems and discovering new opportunities.

Design thinking: Multi disciplinary & human centered



Integrating human aspects & tools:

- Observation
- (Social)trend watching
- Co-development
- Crowd sourcing
- …

Design thinking:Traditional perspective
Analytical research process

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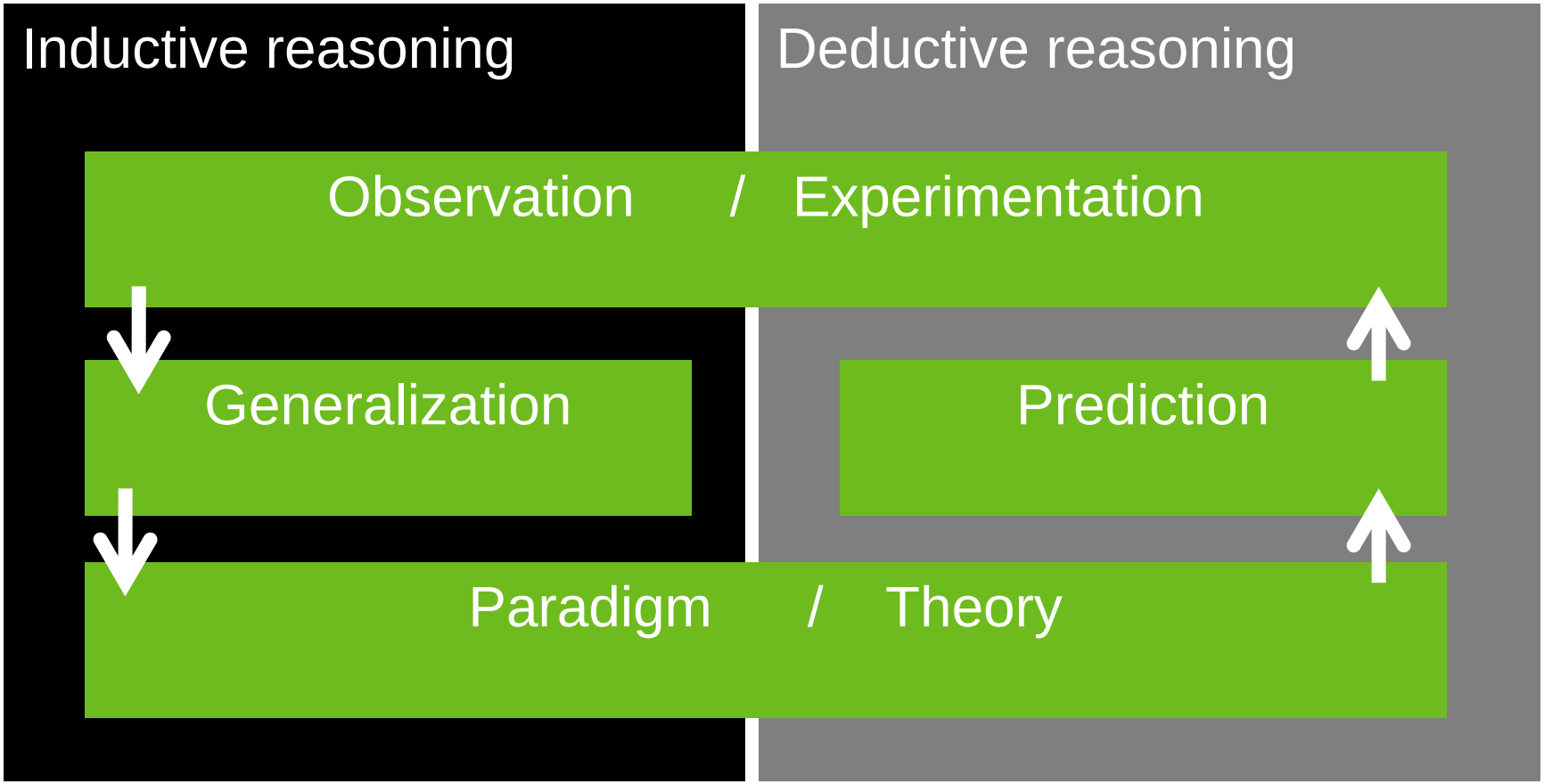
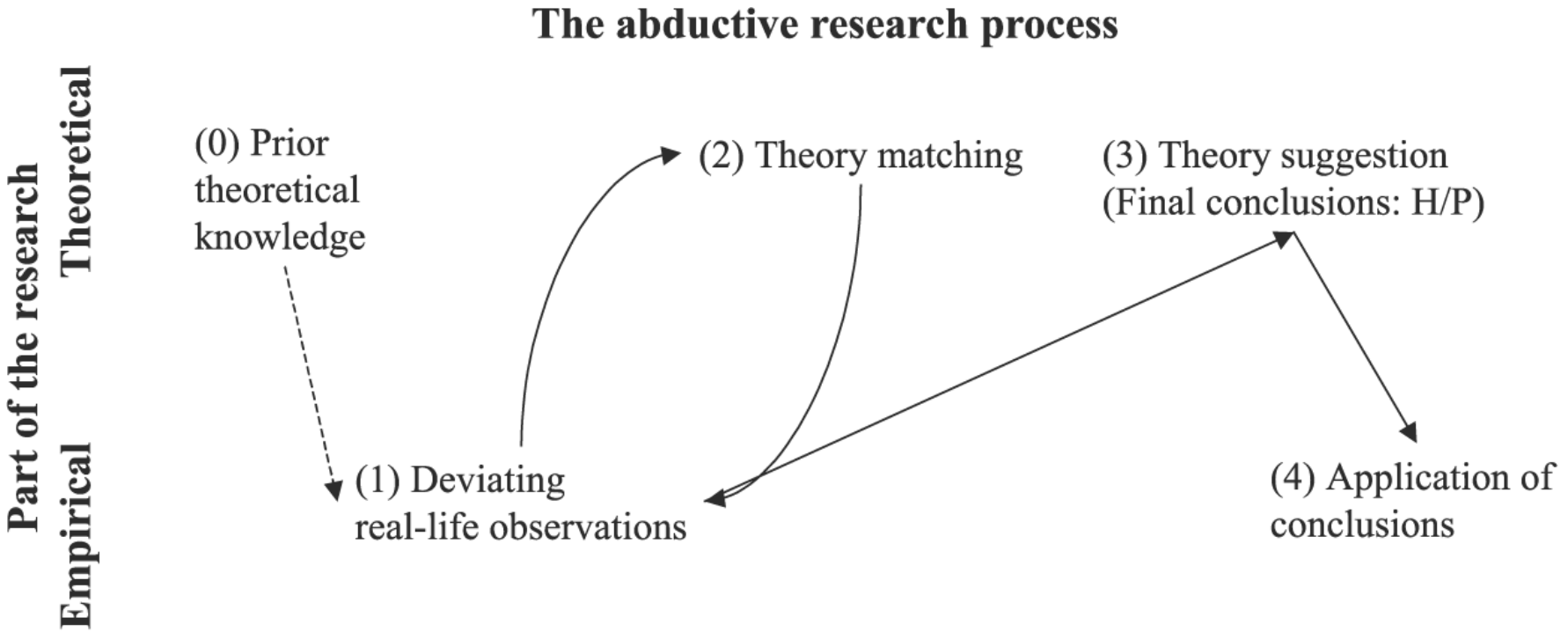


Design thinking - New perspective:
Abductive research process;
oscilating between theoretical & emperial research.



Add creativity and you have Design thinking

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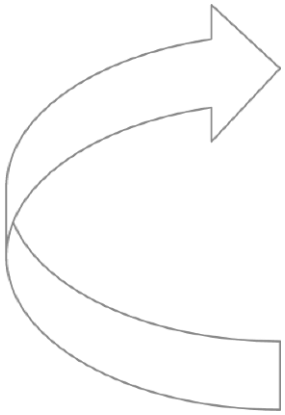
A protocol for solving problems and discovering new opportunities.



- Define the right problem to solve (Drivers)
- Create and consider many options
- Refine & combine selected directions (in stead of selecting)
- Repeat

Design thinking : Culture

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Ingredients:

- Visual thinking
- Story telling
- Imagineering: attract creative tallent
- Rapid prototyping
- Design friendly environment (respect full, open & direct communication)

Conclusions

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Technology transfer 0.2 should be:

•Pro- active and value generating : “from brooker towards project development”

•Therefore the process must become human centered , creative, explorative,and visual.

•Design thinking provides a interesting frame-work for that.

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Questions?

For more info & training programs

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www.verhaert.com

VERHAERT
Headquarters
Hogenakkerhoekstraat 21
9150 Kruibeke (B)
tel +32 (0)3 250 19 00
fax +32 (0)3 254 10 08
ezine@verhaert.com

More at www.verhaert.com