Institute of Information Management

University of St.Gallen

ROBO Business Europe

Challenges and Enablers of Logistic Robots in Hospitals

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Agenda

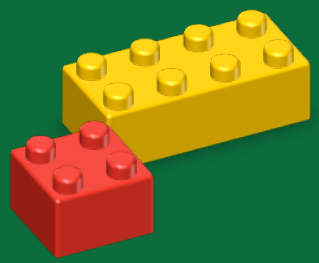
1. Are hospitals ready for logistic robots?
2. If so, how can we make them attractive to hospitals?

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1 Are hospitals ready for logistic robots?

2 If so, how can we make them attractive to hospitals?

Are hospitals ready for logistic robots?



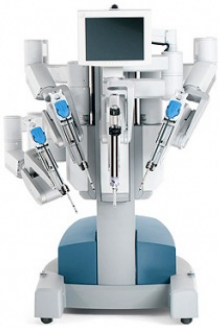
A brief retrospect and outlook on medical technology



1957 Introduction of polio vaccine

1972 Demonstration of first CAT Scan

1987 Minimal-invasive, robotic surgery



1994 Development of coronary stents



2010 Mobile patient records



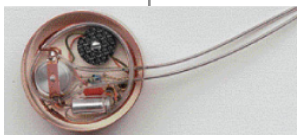
Wearable devices



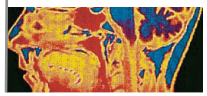
Lifelogging / Self-surveillance

1955 TODAY 2055 ?

1964 First implanted artificial pacemaker



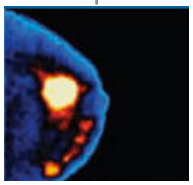
1977 High-speed MRI



1982 Transplantation of first artificial heart



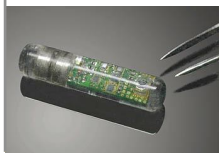
2002 Molecular breast imaging



Neuro-bionic prothesis



Bio chips



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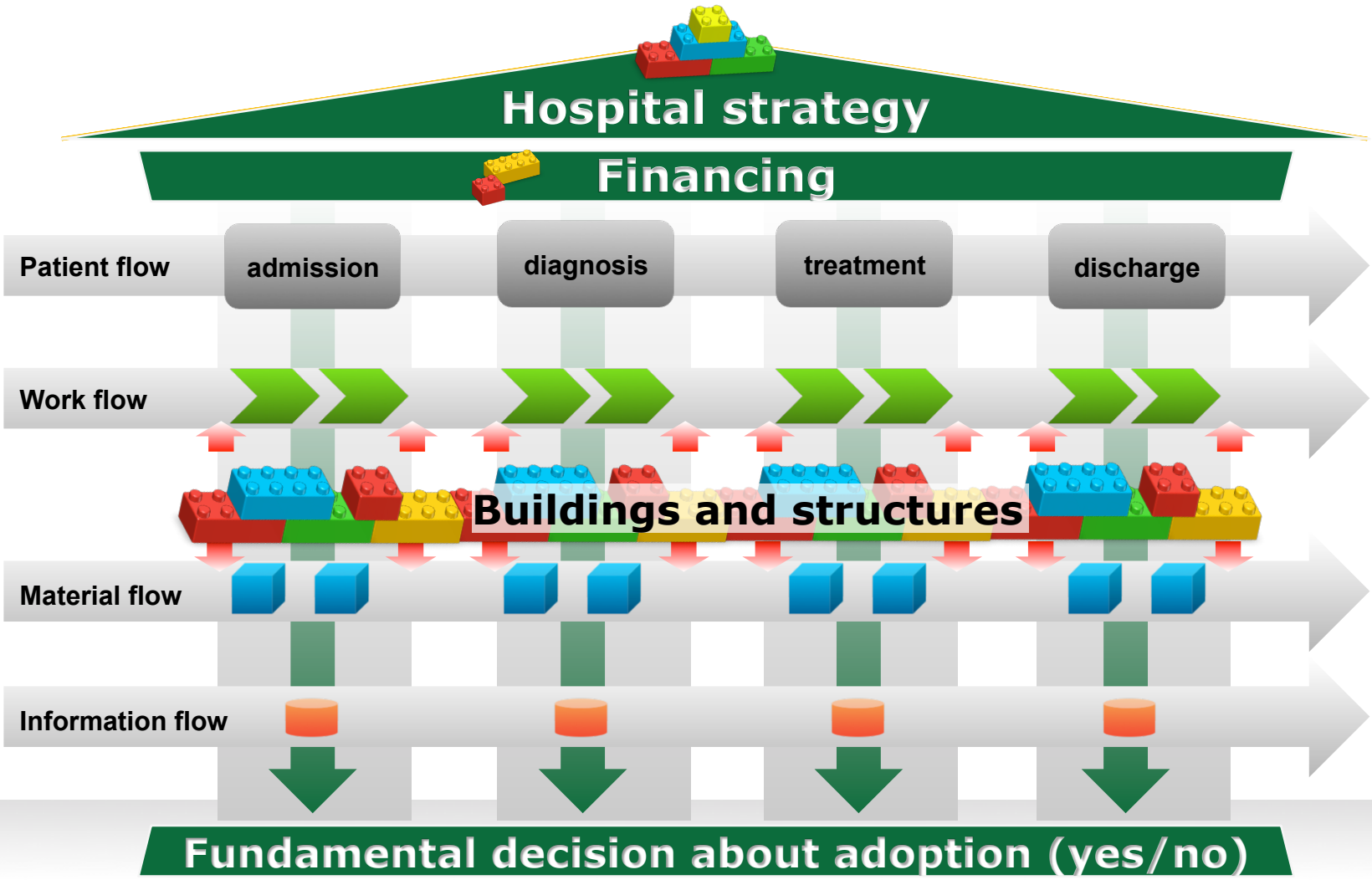


READY OR NOT

How to determine readiness?
What are possible obstacles?

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An approach to determine organizational readiness



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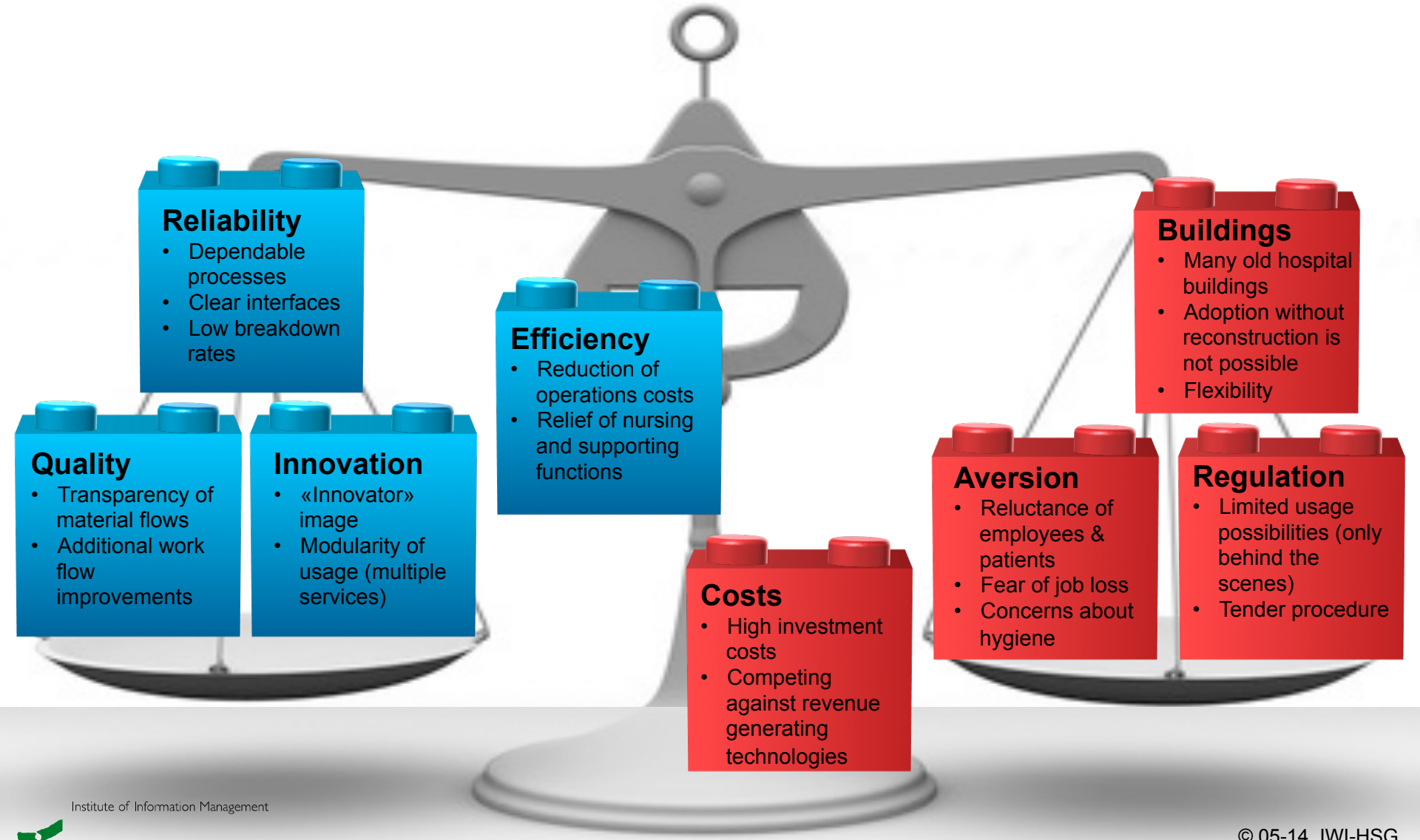
Data collection for this study



- 18 interviews in 4 countries (Switzerland, Germany, Norway, Luxemburg)
- Different organizational size and ownership (private and public)
- Different hospital professionals (directors, medical doctors, business developers, administrators)
- Different experience levels (with / without previous experience with robots)
- More than 50 hours of in-depth interviews

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Expert opinions on logistic robots in hospitals



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Biggest challenges







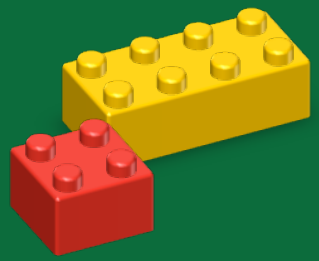


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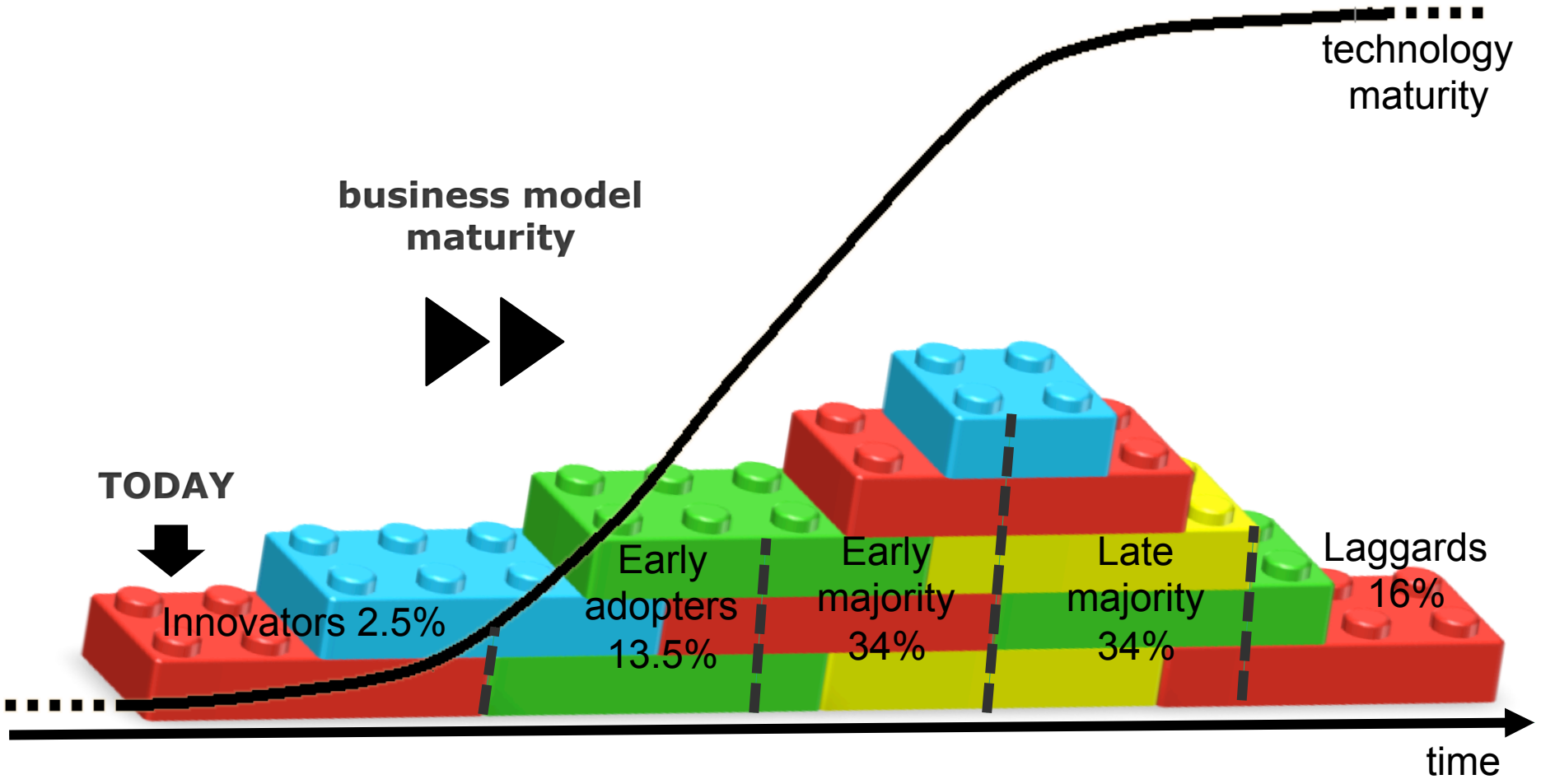
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How can we make logistic robots attractive to hospitals?



What can we learn from other industries?



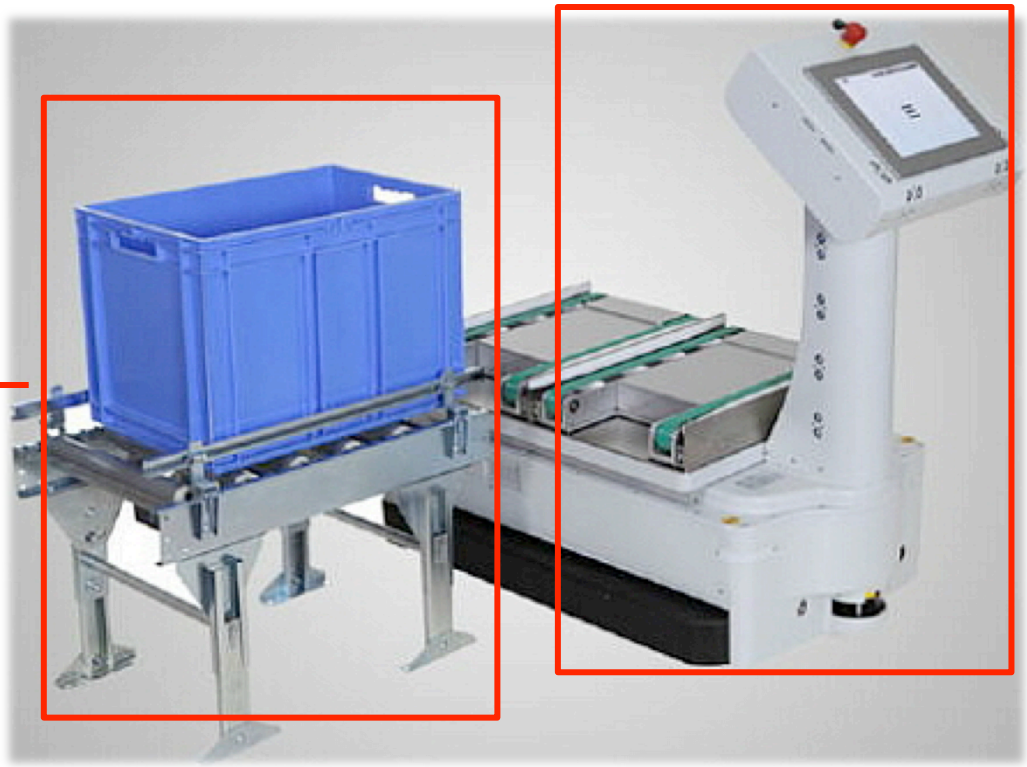
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Classic approach

„SELLING A PRODUCT“



Full package: Equipment + logistic robot



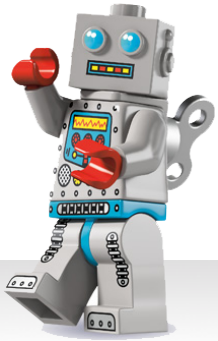
High investment costs may deter hospital decision makers from adopting robots

Source: http://www.mt-robot.com/

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Some alternative business models worth considering...

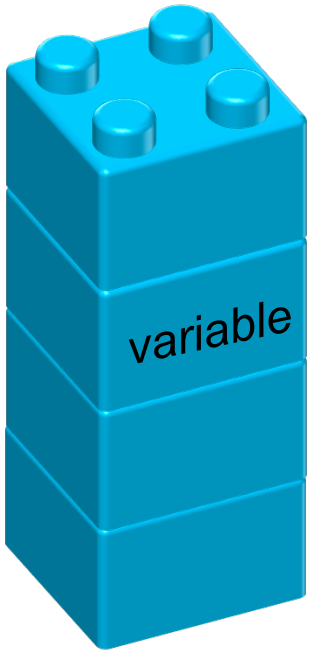
	DIRECT REVENUES	INDIRECT REVENUES
RECURRING	Subscription Usage-based services Add-on services (certification, training) Service upgrades …	Advertisements Third-party services & contracts …
NON-RECURRING	Setup & installation …	



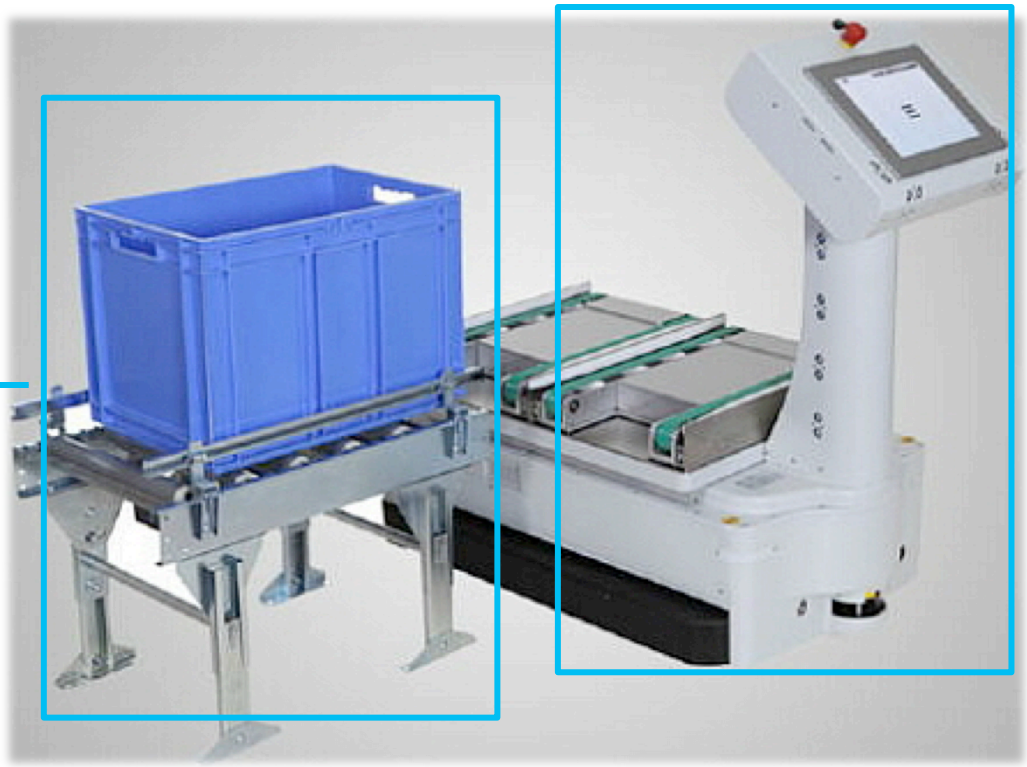
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Alternative business model (1): As a service

„SELLING OPERATION TIME“



Only effective usage of logistic robot is charged



Extremely flexible for hospitals, but high risks for vendor

Source: http://www.mt-robot.com/

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Possible services that can be offered...



- Transport of food and beverages
- Transport of bedclothes
- Transport of beds
- Transport of medical devices
- Transport of drugs
- Transport of (medical) waste
- Transport of mail / messenger service
- ...

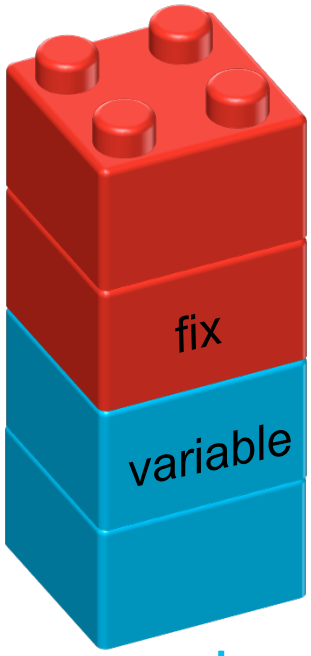
Flexibility of logistic robots is extremely important to reach a high degree of capacity utilization

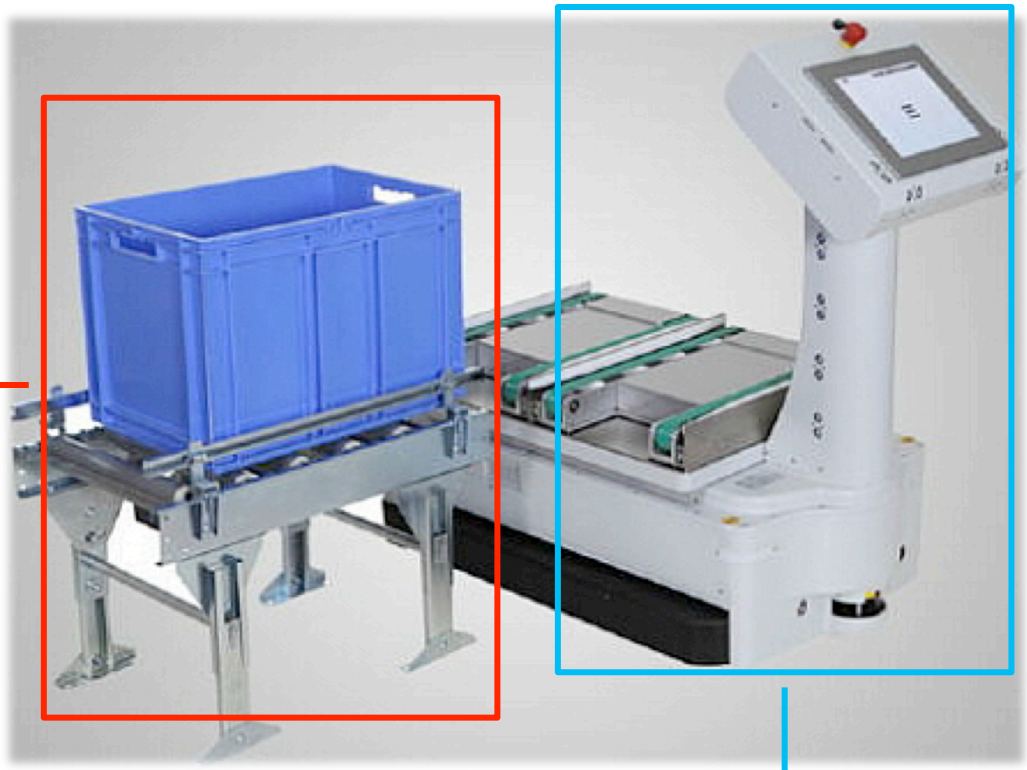
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Alternative business model (2): Razor & blades

„SELLING EQUIPMENT WITH SERVICES“

Equipment is sold, robot is charged as service





Lock-in effect by compatible equipment; but possibly still to expensive for hospitals

Source: http://www.mt-robot.com/

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Final thoughts: Bringing logistic robots to hospitals

- Overcome aversion and mistrust
  - Make use as simple as possible
  - Develop a “care plan” for initial phase
  - Communicate the benefits
- Making logistic robots relevant for hospital decision makers
  - Provide extended list of services
  - Flexibility of use
  - Need-based business model
- Start collaborating with hospital planners and architects
  - Unknown requirements for smooth operation of robots in hospitals
  - Need for teaming up with hospital planners to influence current and future structures of buildings

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Thank You!



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