



School as a service

Service Architecture
for the Learning Environments
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School as a Product

The Product is broken. Schools work in temporary spaces because of indoor climate problems and unsuitable solutions.

ja fokus tuotteen itseisarvossa.



35 000

In Finland

3 000

students only in Espoo



School as a Product

Investointi 25 000 000 €
Käyttökulut 12 000 €/kk
Kiinteistöpalvelut 1 000 €/pv
Käyttäjäpalvelut 1 000 €/pv

School as a Service

Shared resources used based on demand, new service models.

40 €/h
per luokka



Flipped Classroom

TRADITIONAL

FLIPPED



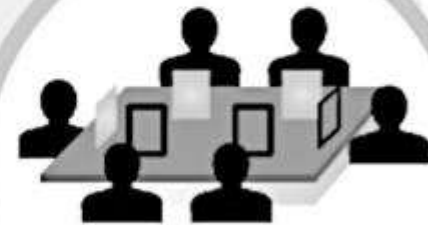
Lecture



Homework
Activities



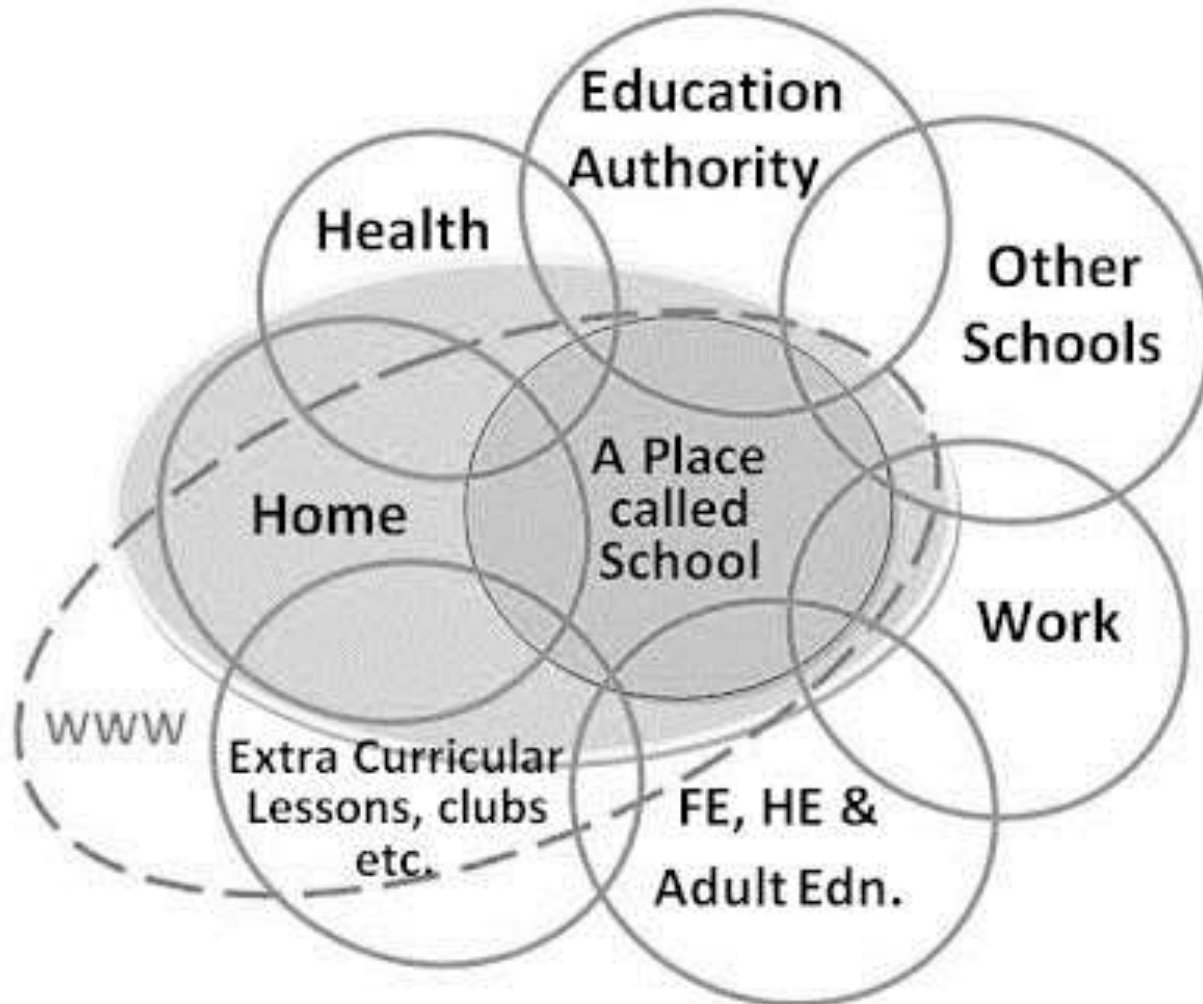
Lecture



Classroom
Activities

Focus is shifting from teaching to learning

Where does the learning take place?

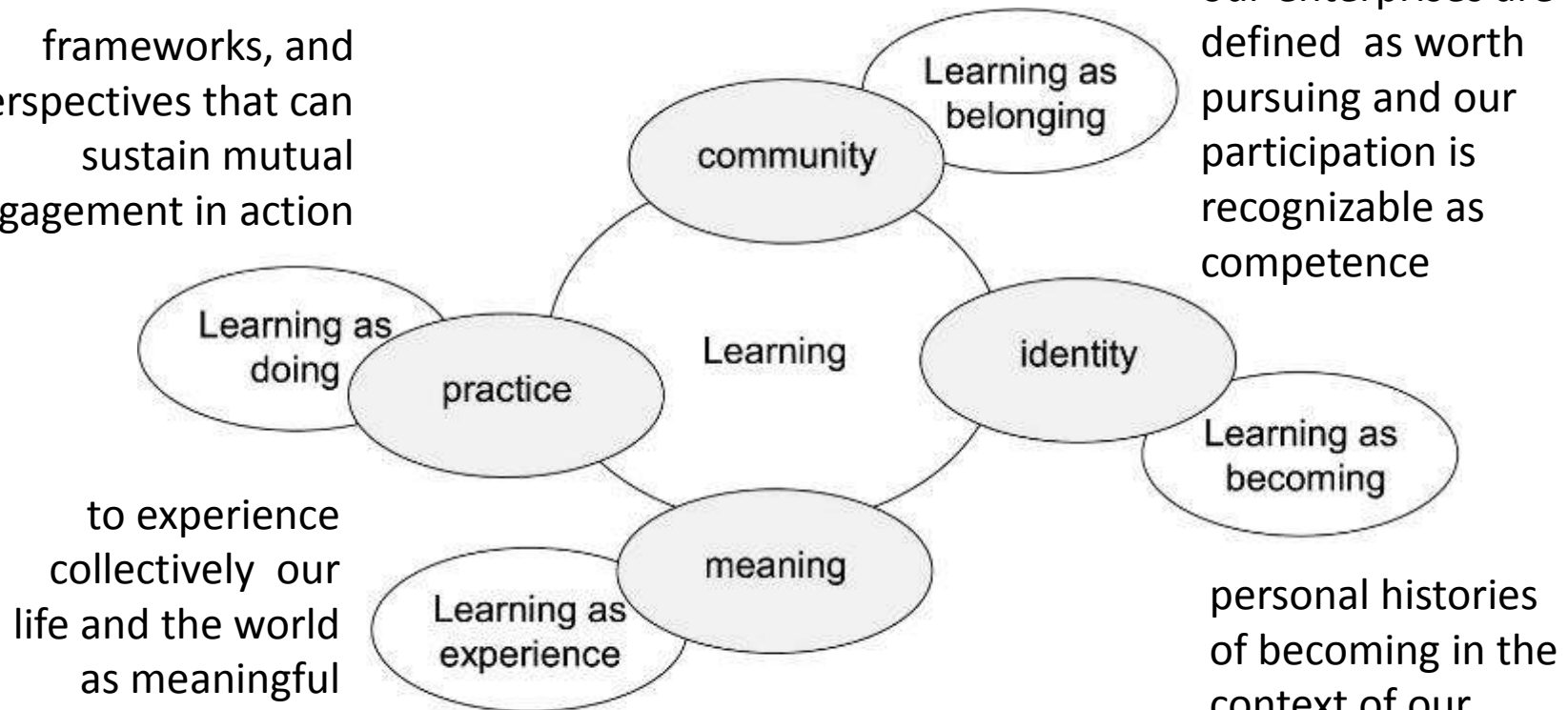




Platform for social learning

frameworks, and perspectives that can sustain mutual engagement in action

our enterprises are defined as worth pursuing and our participation is recognizable as competence

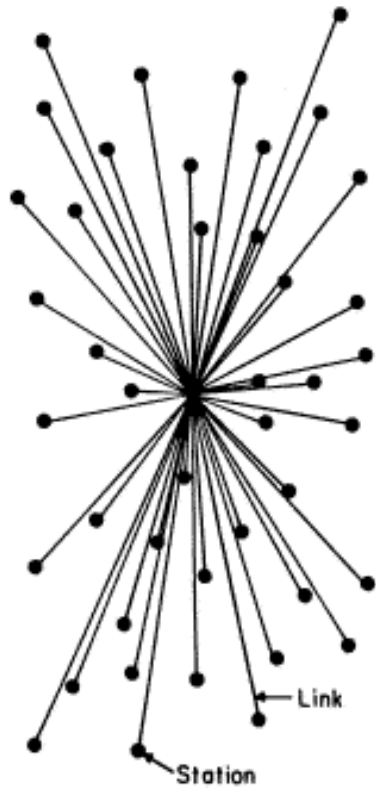


Source: Wenger (1998)

Development of Network Structures

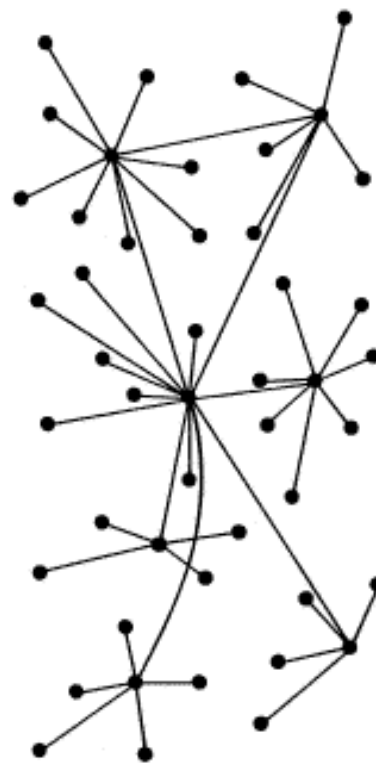


Production driven structure



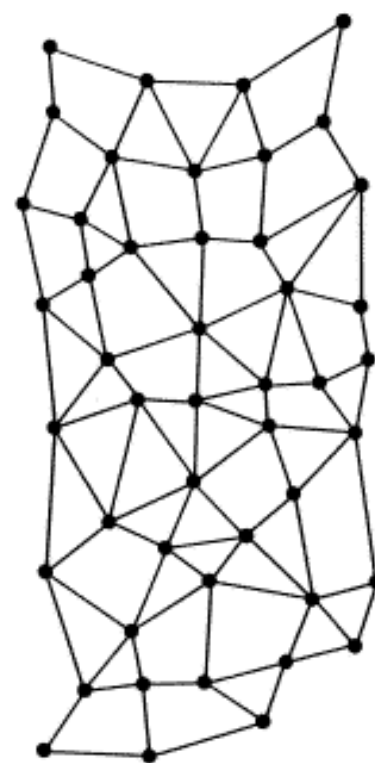
CENTRALIZED
(A)

Efficiency driven structure



DECENTRALIZED
(B)

Co-creation driven structure



DISTRIBUTED
(C)

FIG. 1 – Centralized, Decentralized and Distributed Networks

School as a Service

School as a Product

Flexible
Modular
Accessible

Planned
Static
Closed

27.8.2015

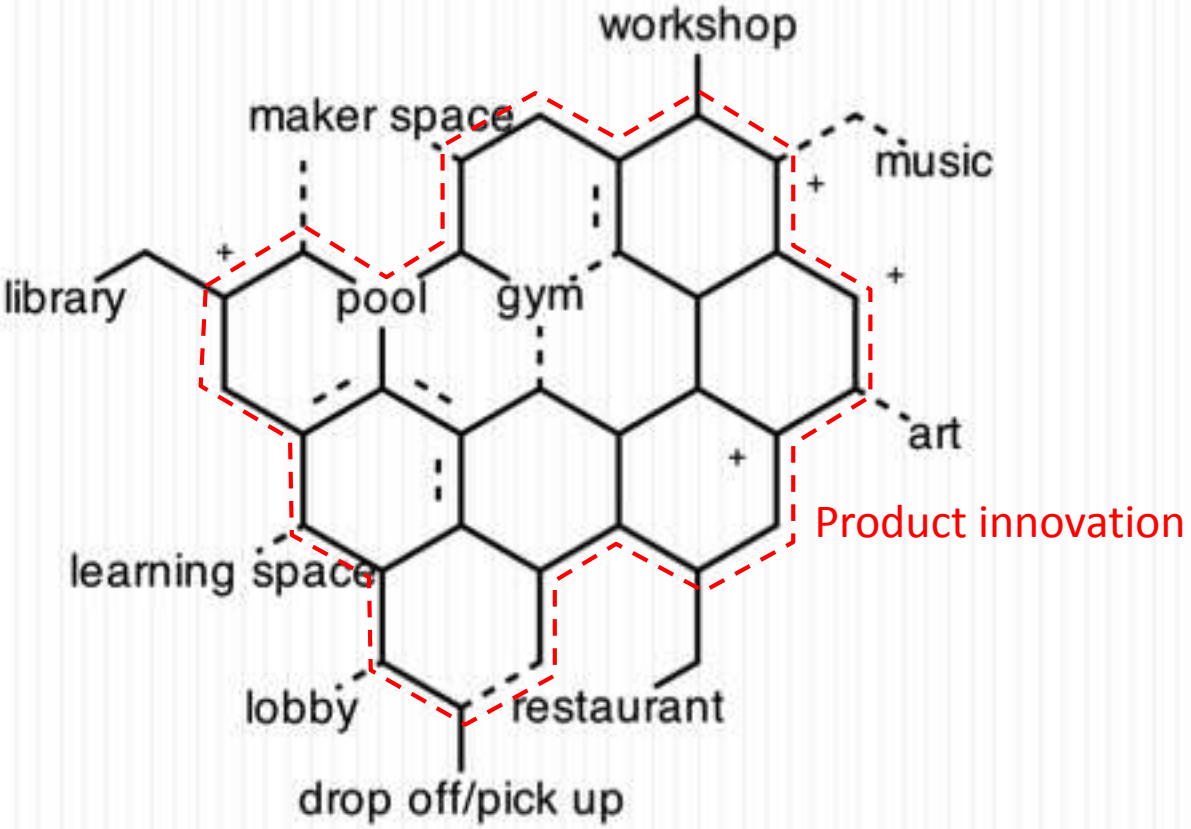
Lab for Learners | Jarmo Suominen 2014

8

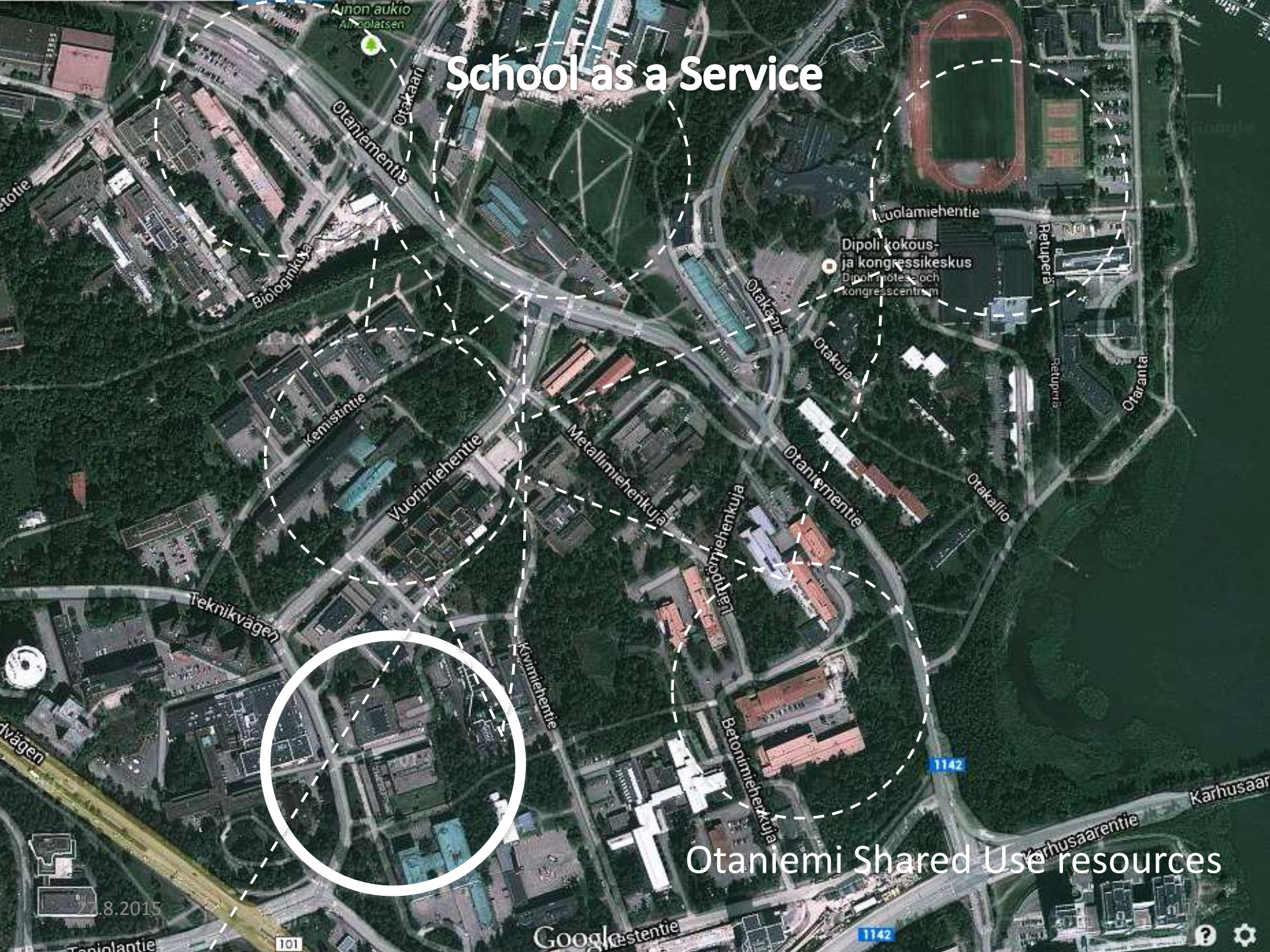
School as a Product



School as a Product



School as a Service



Dipoli kokous- ja kongressikeskus
Dipoli notes och kongresscentrum

Otaniemi Shared Use resources

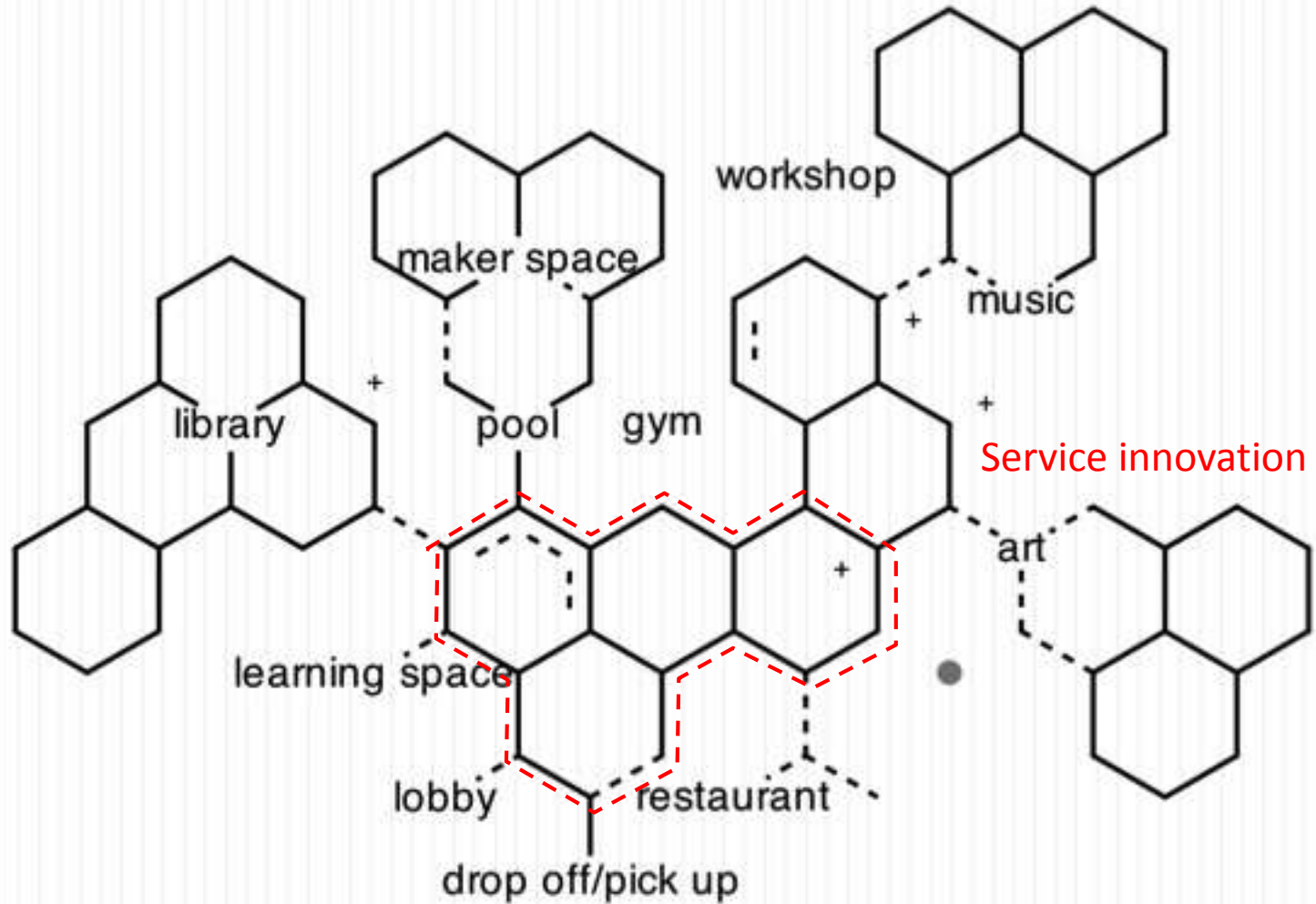
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School as a Service



Ecosystem of Value Creation | School as a Service Fab Lab / Learning by doing



Ecosystem of Value Creation | School as a Service Culture and art



Ecosystem of Value Creation | School as a Service

Dedicated recourses





Ecosystem of Value Creation | School as a Service

Sports and physical activities

Lentokenttä
24 km

OTANIEMI



Culminatium

Otanienmäki
Otanien
Bioteknologia

Technopolis Innopoli

Keksinvälätiö

TKK

VTT

HUB

KCL

GTK

CSC

Life Science Center

Dipoli

Helsinki

N

WEST METRO COLLABORATION CORRIDOR

INVESTMENTS

JOBS

HOMES

NUUKSIO NATIONAL PARK

VANTAA

HUOPALAHTI

ESPOO CENTRE

KAUNIAINEN

KERA

LEPPÄVAARA

PASILA

HELSINKI

ESPOO

AALTO UNIVERSITY (OTANIEMI)

URHEILUPUISTO

KEILANIEMI

CENTRAL RAILWAY STATION

TAPIOLA

KOIVUSAARI

LAUTTASAARI

KAMPPI

RUOHOLAHTI

KIVENLAHTI

KAITAA

MATINKANGAS

NIITYKUMPU

FINNOO

SOUKKA

ESPOONLAHTI

INNOVATION

BUSINESS

CULTURE

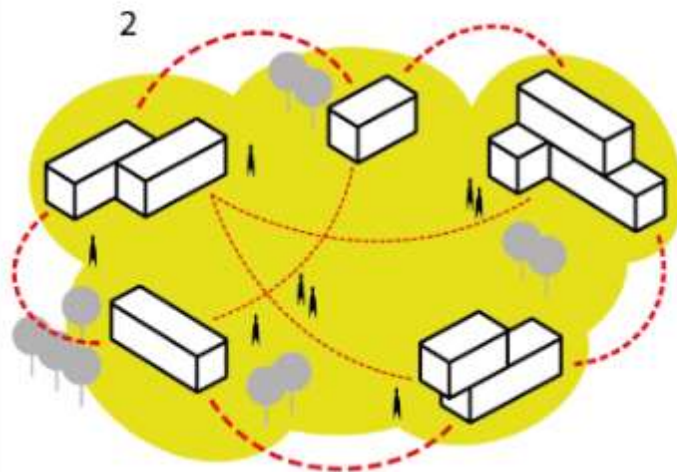
SPORTS

NATURE

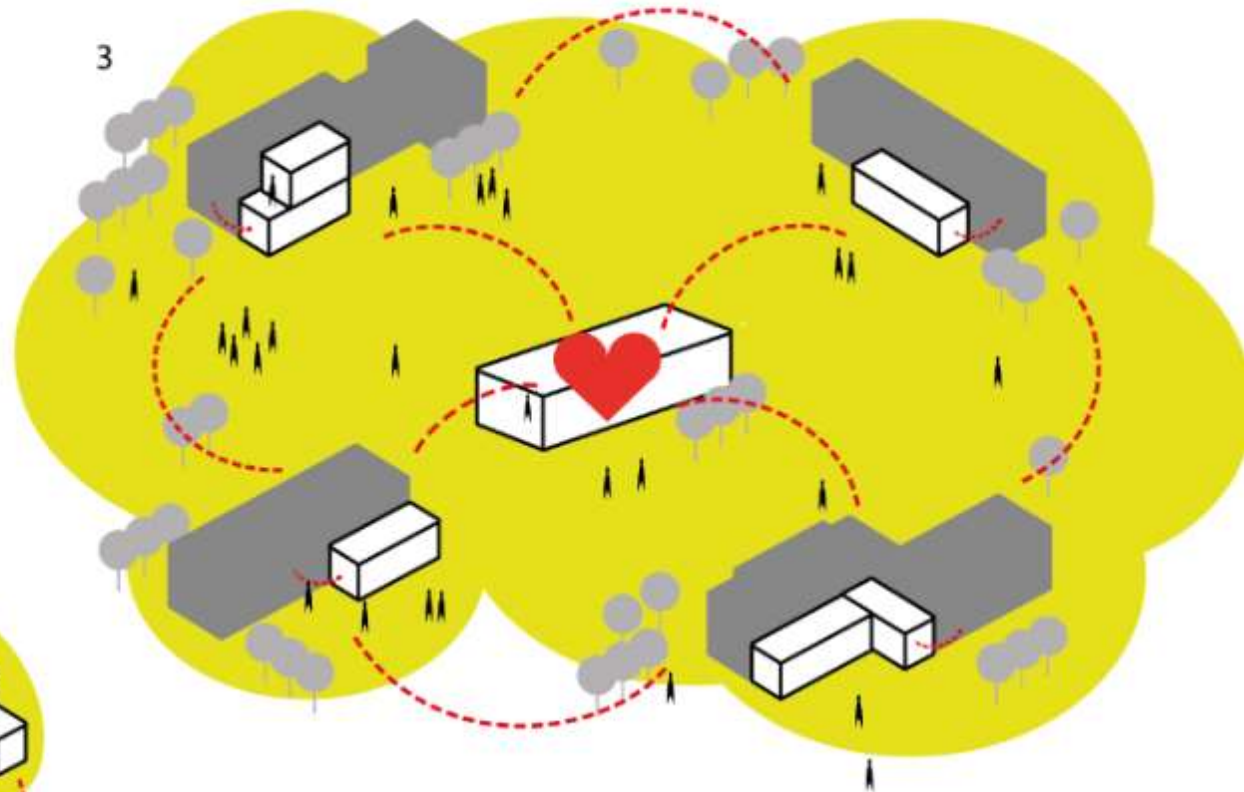
Centralized School as a Product

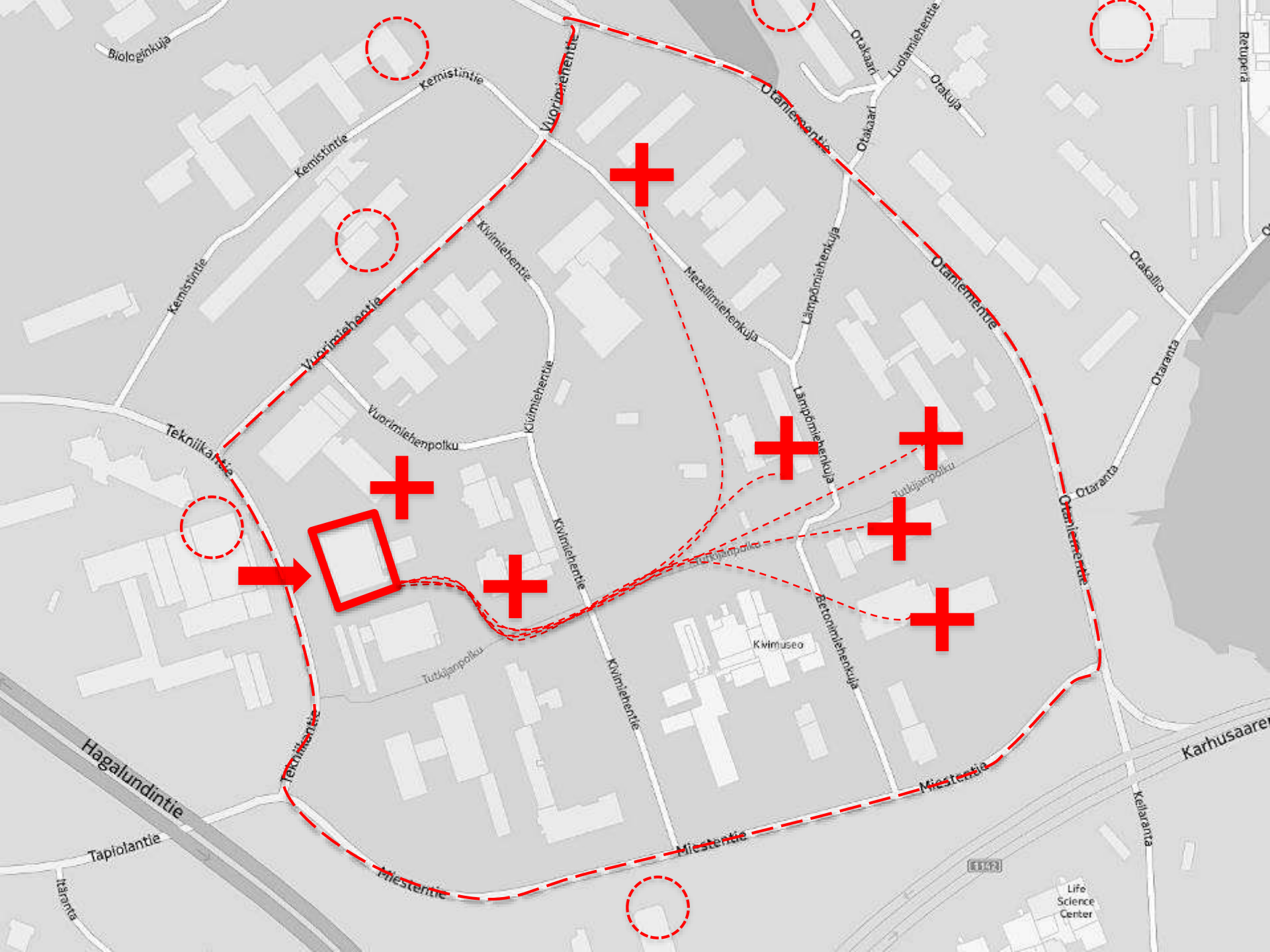


Decentralized School as a Components



Distributed School as a Service





Biologinkuja

Kemistintie

Vuorimiehentie

Otarientie

Otaakaari

Luolamiehentie

Otakuja

Kemistintie

Kivimiehentie

Metallimiehenkuja

Lämpömiehenkuja

Otarientie

Kemistintie

Vuorimiehentie

Vuorimiehenpolku

Kivimiehentie

Lämpömiehenkuja

Tutkijapolku

Tekniikkatie

Vuorimiehenpolku

Kivimiehentie

Suokinnäppölä

Tutkijapolku



Tutkijapolku

Kivimiehentie

Kivimuseo

Betonimiehenkuja

Miestentie

Hagalundintie

Tapiolantie

Talvankatu

Miestentie

Miestentie

Otarientie

Otaranta

Otaranta

Otakallio

Karhusaarenkatu

Kalastajankatu



Life Science Center

Something old, something new, something borrowed, something blue



Something old: renovated existing building (PUU2) in Otaniemi campus for basic educational activities with school management and utility spaces.

Something new: New construction as schools new identity, lounge and dining rooms, a meeting place, drop-off and pick-up location.

Something borrowed: Shared local resources for predictable and repeated weekly use, scheduled to be used in half a day slots

Something Blue: On Demand resources within short distance require way finding and branding solutions to be identified as resources for new SaaS School.

01. Learning Lab something old



- **Learning Design:** Existing building (something old) renovated for the school (learning environment design task, e.g. architectural and interior design). Semi-private shared use with learning labs for shared research and development Aalto use. (something old)
- Surface area of 3200 m² (estimate)
- Learning environments (class and teaching) 1800 m²
- Dedicated classes and spaces 800 m², Management and utilities 600 m²

02. Interaction Lab something new



- **Product design:** New construction (something new). The school's own space that reflects the school's identity, including meeting place, drop-off and pick-up location, structure communicating symbolic emotional and operational values of the school.
- Hall / storage 80, Self-study spaces 80
- Dining Room / Kitchen Distribution and auxiliary warehouse of 160
- New construction of 320 m / 2

03. Shared Spaces something borrowed



- **Service design:** shared resources with contracting partners (something borrowed) for half-day learning slots. Focus is on resources close by such as Design Factory, Start-up sauna, Urban Mill and the Department of Art workshops etc.
- Design Factory resources (for min. 2slots /week), Department of Architecture Workshop (for min. 2slots /week), Start Up Sauna resources (for min. 2slots /week), Urban Mill resources (for min. 2slots /week),

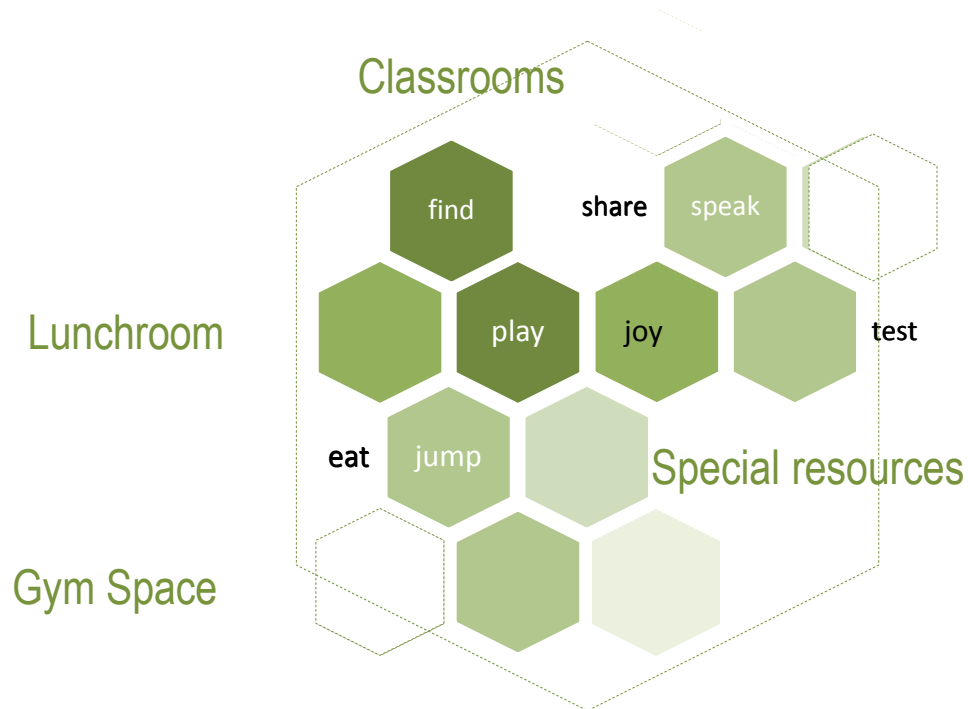
04. On Demand something blue?



- **Business design:** On Demand resources within short distance (something blue)
Use-based charge and compensation: the use of open resources in Otaniemi, such as sports or workshop or any other occasional use.
- Aalto University Otaniemi campus teaching resources (classrooms)
- Example: Miestentie 3 Lecture Room 117 for 70 persons
- Example: large event space at Forest Technology, 55p, for 23 persons



School as a Product



Music classrooms

School as a Product
Based on real estate
Investments beforehand
Static and hard to change
Focus on efficiency

Defined by Physical Architecture

School as a Service



Shared Classrooms

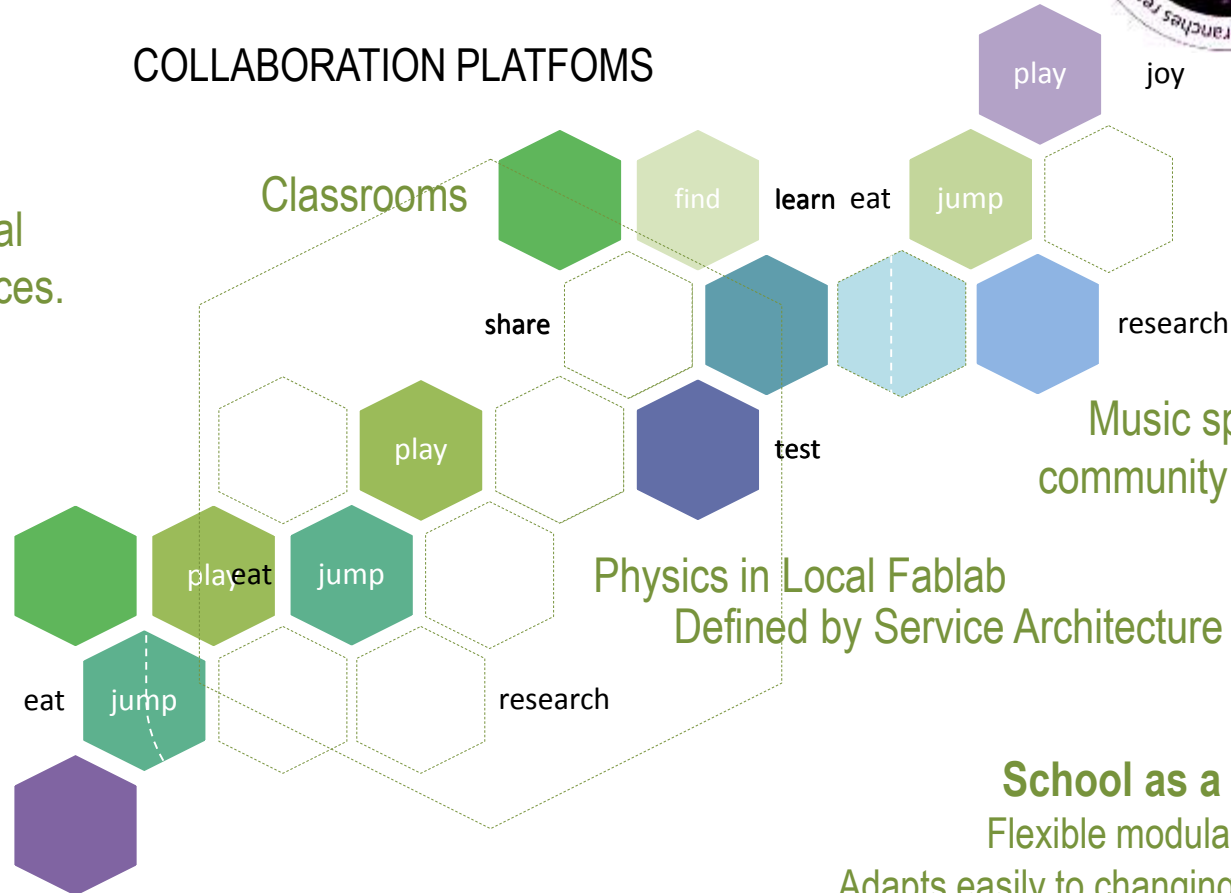
COLLABORATION PLATFORMS

Shared Learning Ecosystems

sharing most suitable local resources and competences. School is not defined by buildings rather than by operations

Lunch services nearby

Shared Gym



Physics in Local Fablab
Defined by Service Architecture

Music space in
community center

School as a Service

- Flexible modular solution
- Adapts easily to changing demand
- Cost Efficient
- Sustainable, optimized use of existing resources
- Green Campus

