


Uutta tutkimuksen valossa ja alustavia tuloksia JOT-
hankkeesta

13.20-13.40

Miten koulu voisi tarjoutua?

Palvelukeskeinen oppimisen arkkitehtuuri.

Prof Jarmo Suominen Aalto-yliopisto



9 Nobel's

Building 20 as a service platform

käyttäjiensä haltuunottamat olosuhteet !



olosuhteiden haltuunottamat käyttäjät ?

Koko hankkeen tavoite

- Tavoitteena on löytää joustavia ja kustannustehokkaita ratkaisuja, joissa tilat tukevat oppilaille ominaisia työnteon käytäntöjä, soveltuvat niin yksilölliseen kuin ryhmätyöhön ja innostavat sekä oppilaita että opettajia oppimiseen ja työskentelemiseen uusiutuvilla tavoilla.
- Tavoitteena on myös parantaa koulussa viihtymistä sekä lisätä oppilaiden ja opettajien hyvinvointia arkipäivässä. Työssä tarkastellaan niin fyysisiä tiloja kuin digitaalisia oppimisympäristöjä.

Joustavuus

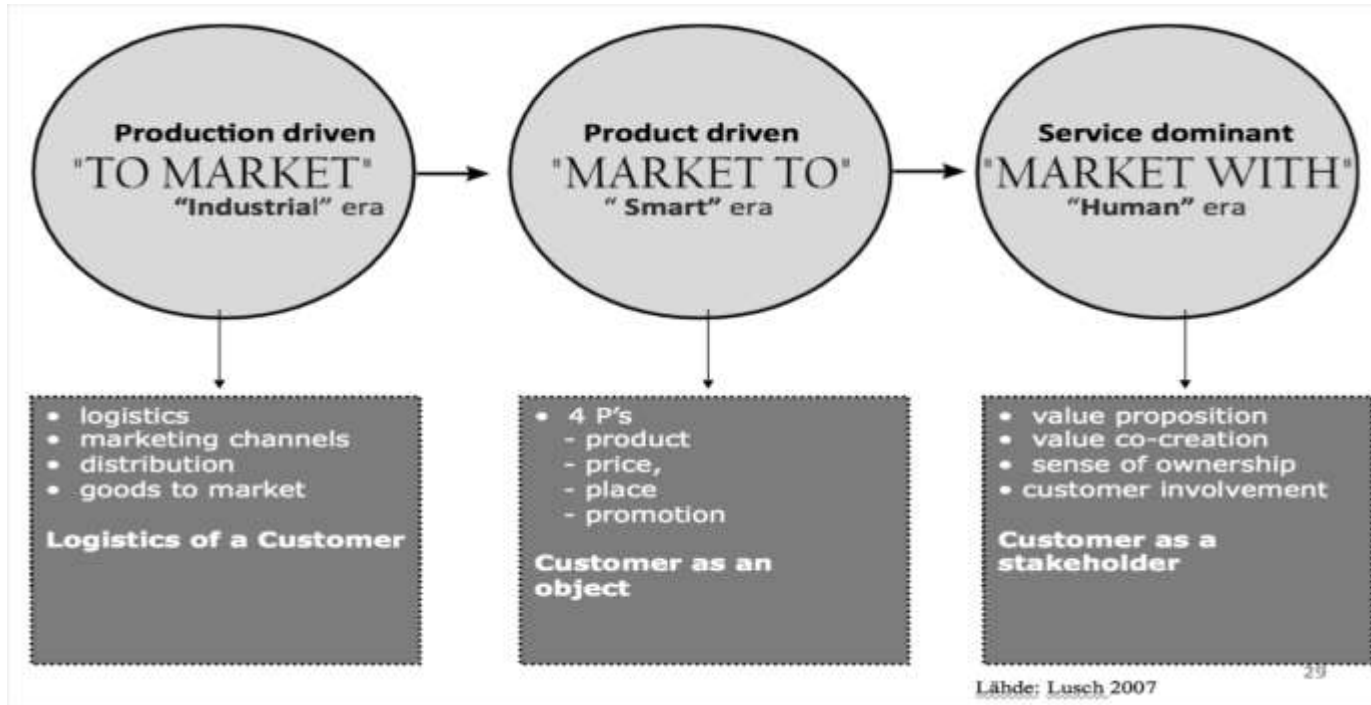
Omistajuus

Saavutettavuus

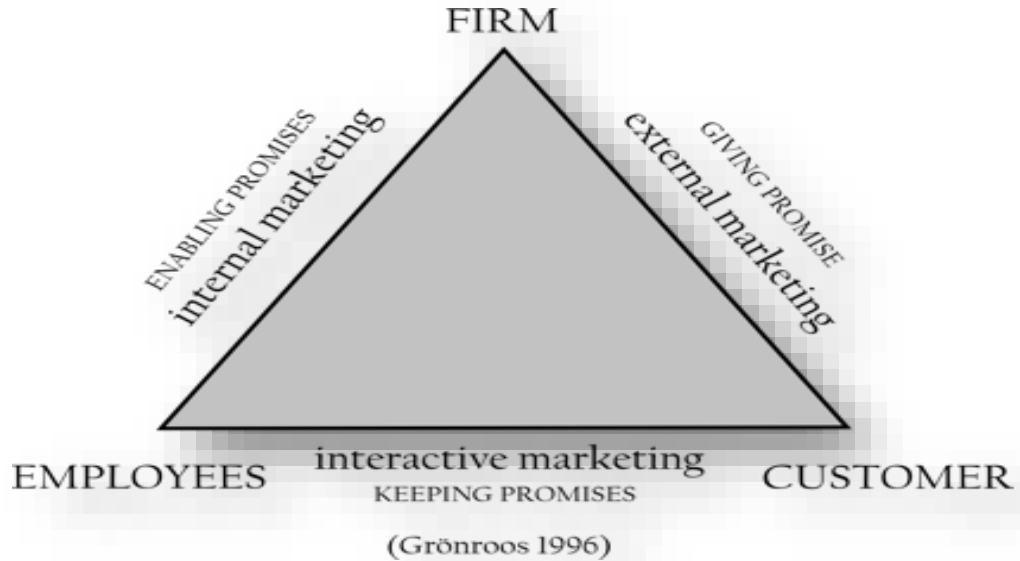
Problems cannot be solved
with the same logic that created them

Albert Einstein

Tuotantolähtöisestä palvelukeskeiseen logiikkaan



Customer value



Flipped Classroom

TRADITIONAL



Lecture

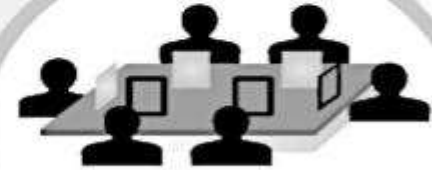


Homework
Activities

FLIPPED



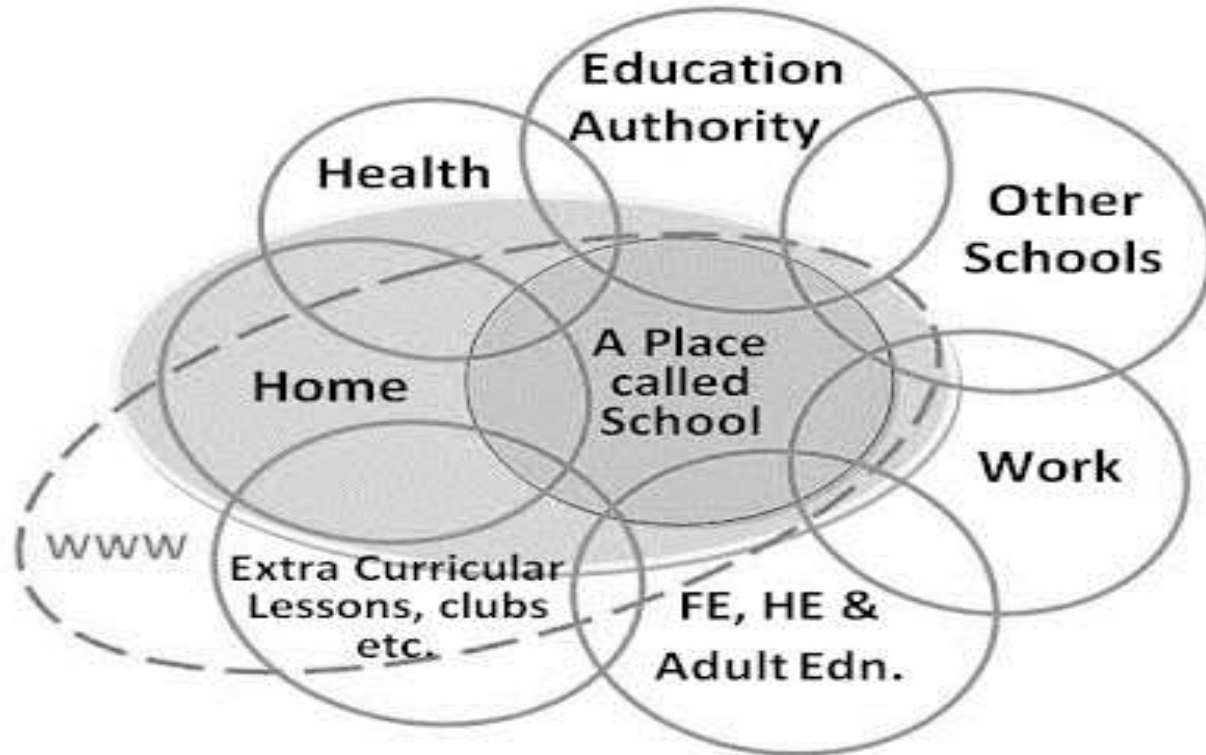
Lecture



Classroom
Activities

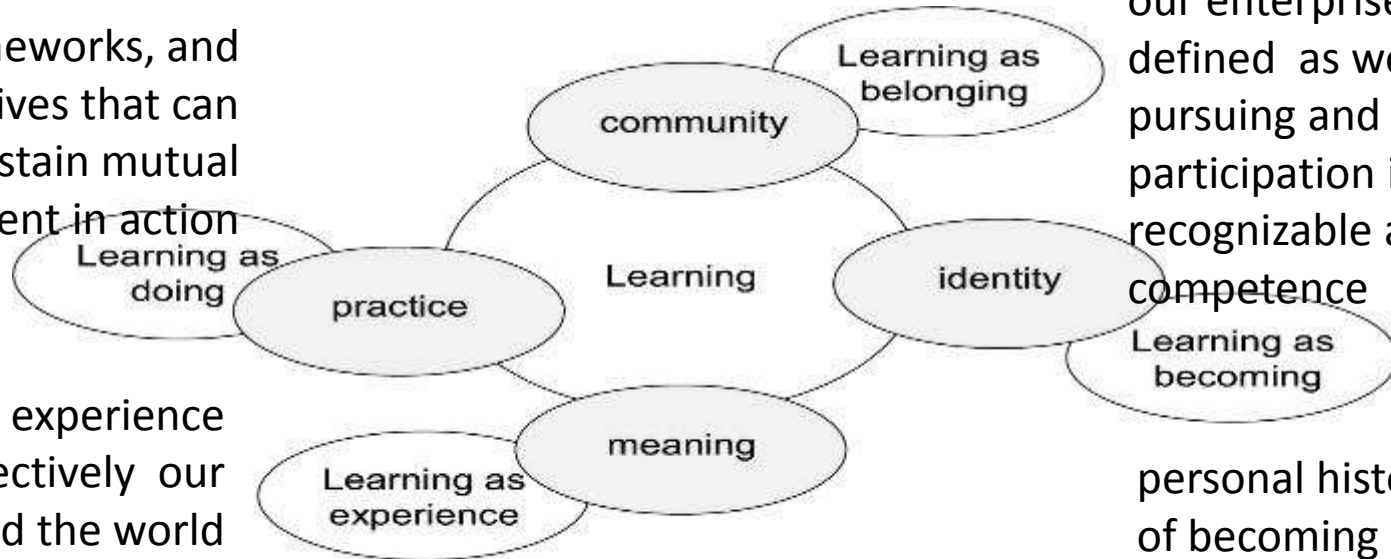
Focus is shifting from teaching to learning

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

to experience collectively our life and the world as meaningful

personal histories of becoming in the context of our communities.

Source: Wenger (1998)

Development of Network Structures

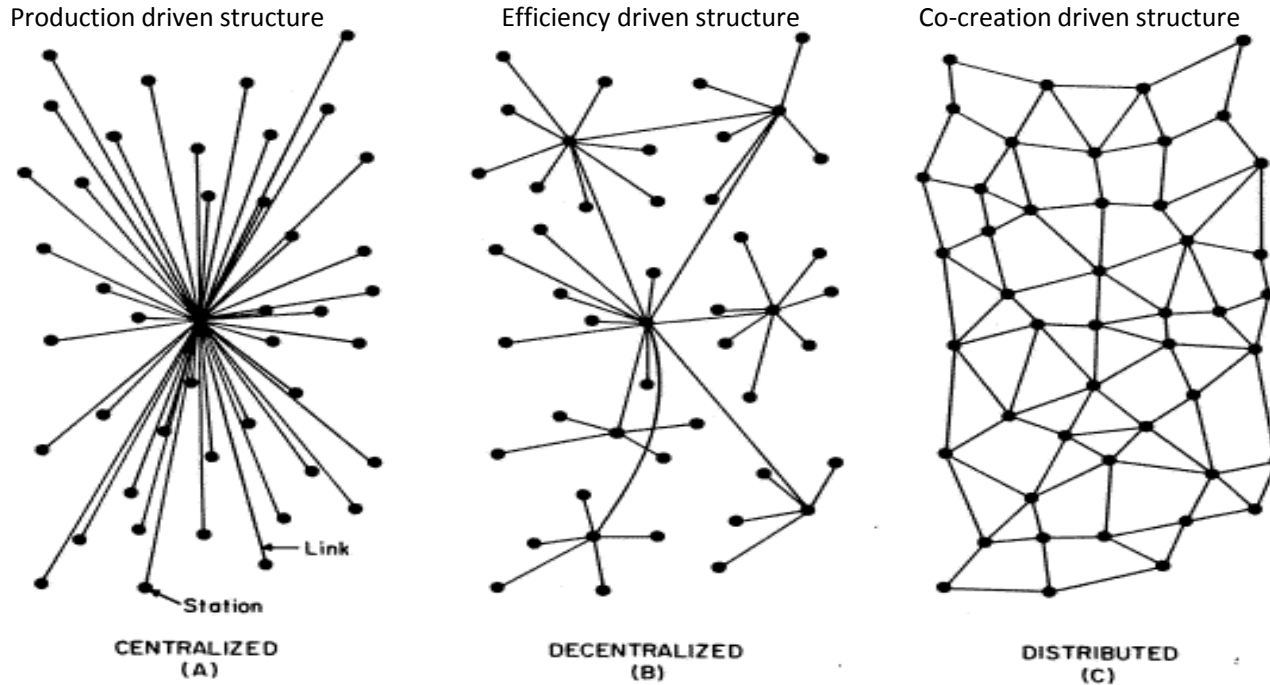


FIG. 1 – Centralized, Decentralized and Distributed Networks

Tarjoama /

Tarjoutuminen



MIT Department of
FACILITIES
 77 Massachusetts Avenue, Cambridge, MA 02139



Revisions	
NO.	DESCRIPTION

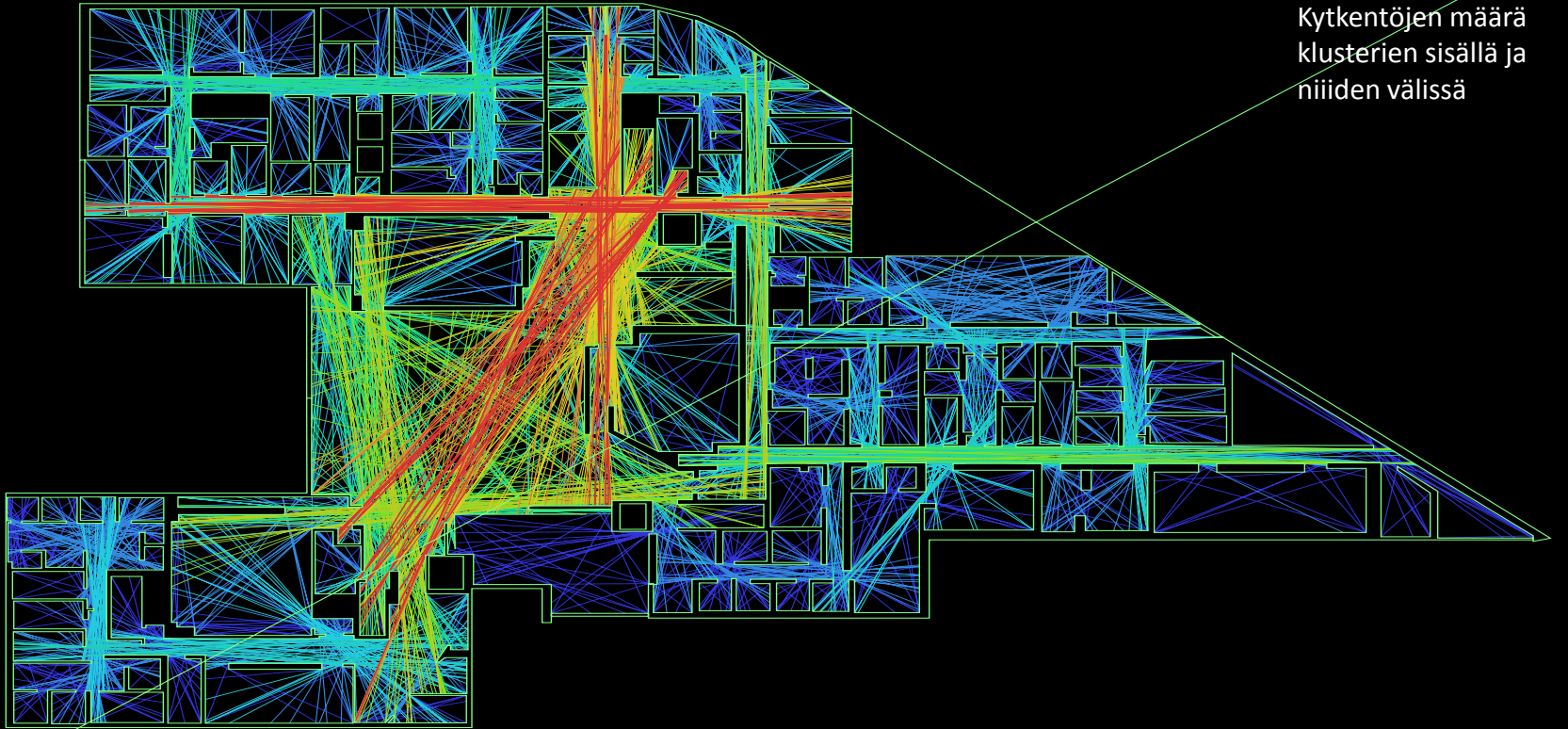
PROJECT NO. 00000000
 DATE 00/00/00
 DRAWN BY 00000000
 SCALE 1/8"=1'-0"



BUILDING 46 - THIRD FLOOR
 BRAIN & COGNITIVE SCIENCES
 SPACE ACCOUNTING FLOORPLAN

46.3

Verkoston rakenne
Kytcentöjen määrä
klusterien sisällä ja
niiden välissä

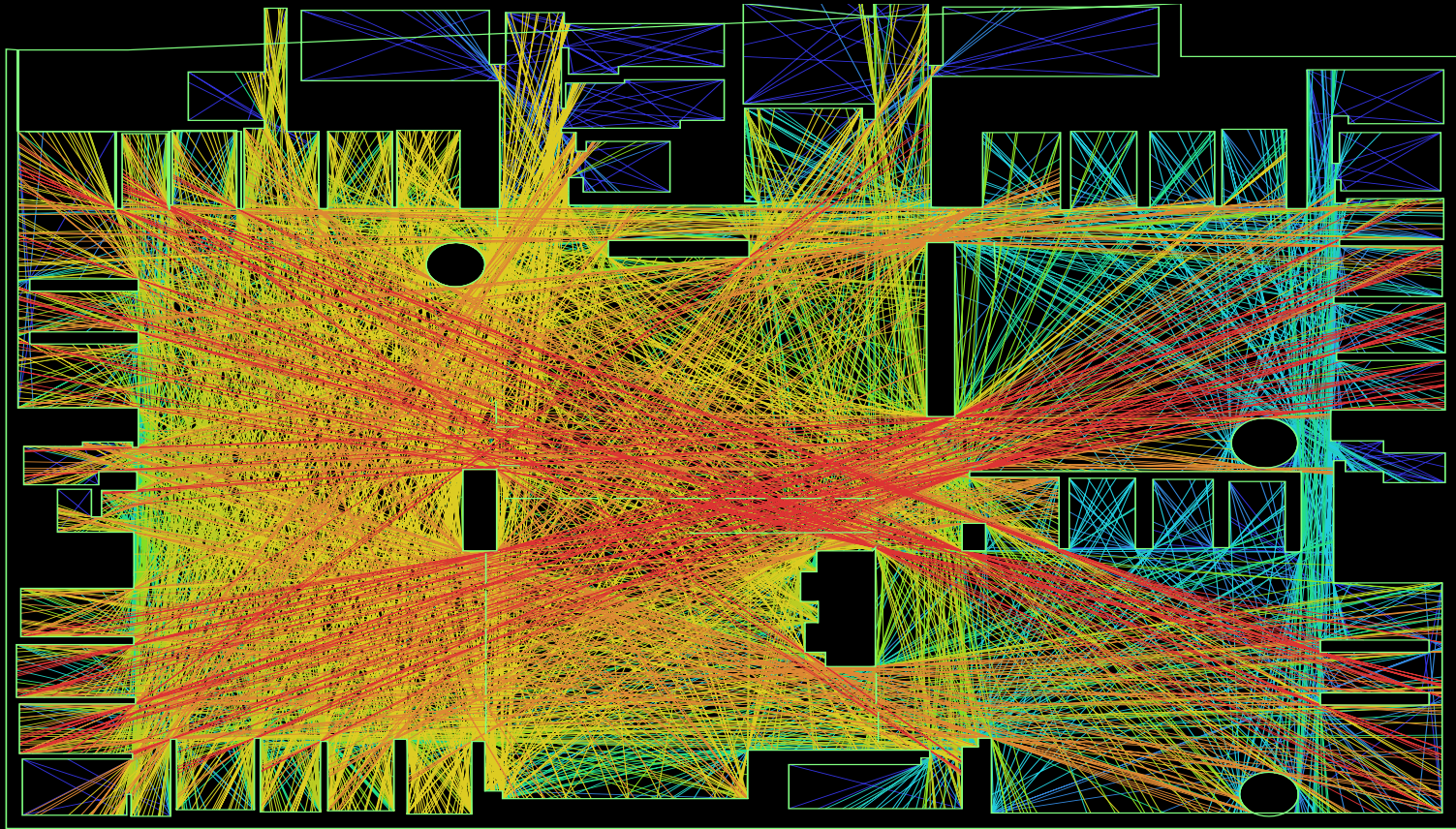




REVISIONS	
NO.	DESCRIPTION

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 DATE: _____
 CHECKED BY: _____
 SCALE: _____





100m

Joustavuus

Joustavuus

1) Sosiaalinen joustavuus

- 1) Kokemus kuulumisesta
- 2) Kokemus yhdessä kehittymisestä

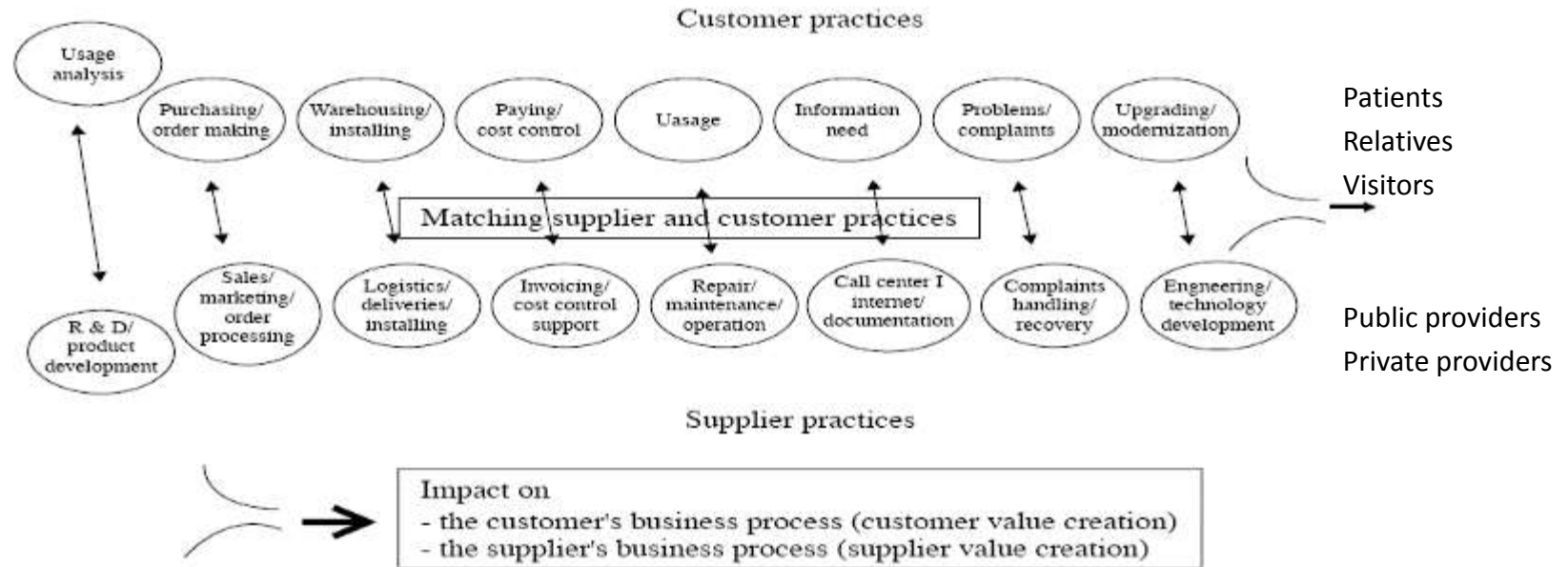
2) Virtuaalinen omistajuus

- 1) Konfiguroitavat ratkaisut
- 2) Yhteisöllinen omistajuus, meidän ratkaisu

3) Fyysinen omistajuus

- 1) Oma paikka
- 2) Meidän ympäristö

Value co creation



Source: Based on a figure in Grönroos (2008)

MAXIMIZED USE 24 HOURS



Maximized use over 24 hours

Users group



Office



Residential

Activities



Lounging



Meeting



Eating



Entertaining



Catering



Screening



Office space



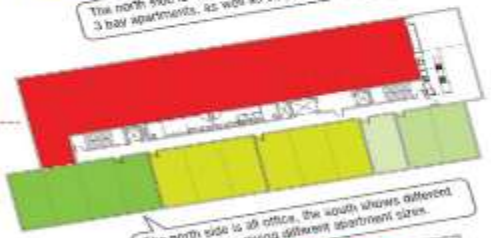
Live/work apartments



And another variation where a portion of the north side remains dedicated to office program



The north side is residential, a combination of the typical 2 and 3 bay apartments, as well as very efficient deep 1 bay units.



The north side is all office, the south shows different demising walls, giving different apartment sizes.

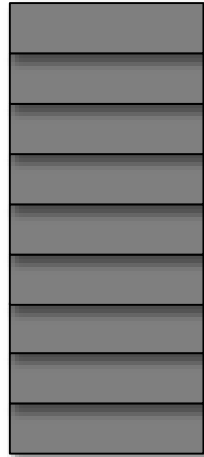
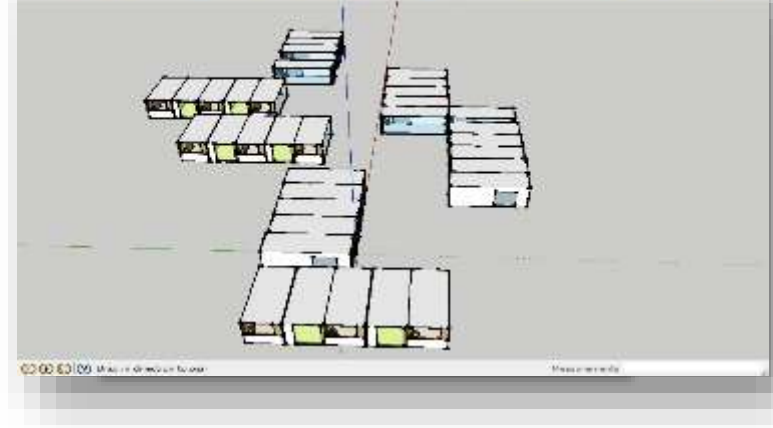


The north side is all office, the south shows different demising walls, giving different apartment sizes.

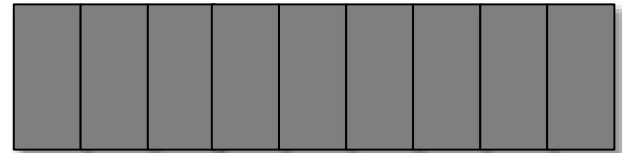
Case Tapiolan koulu



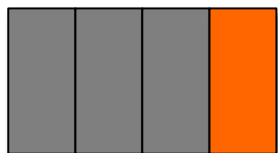
Nykytila



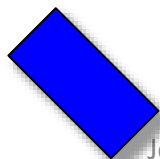
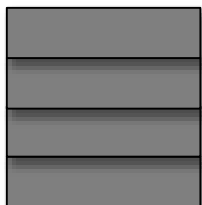
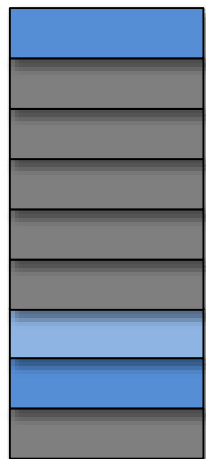
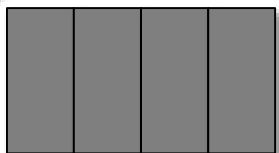
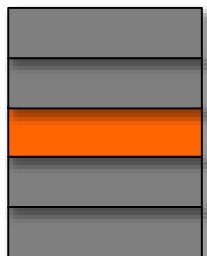
Tapiolan koulun väistötilat.
Tekniset tarpeet toteuttava
ratkaisu jossa kaikki kontit
sisältävät saman
toiminnon, opetusluokan.



Toiminnallinen potentiaali



Sponsoroitu paviljonki
Musiikki yhteisö



Tekemisen yhteisö

Toiminnallisesti lisätty
ratkaisumalli
Ekologinen yhteisö

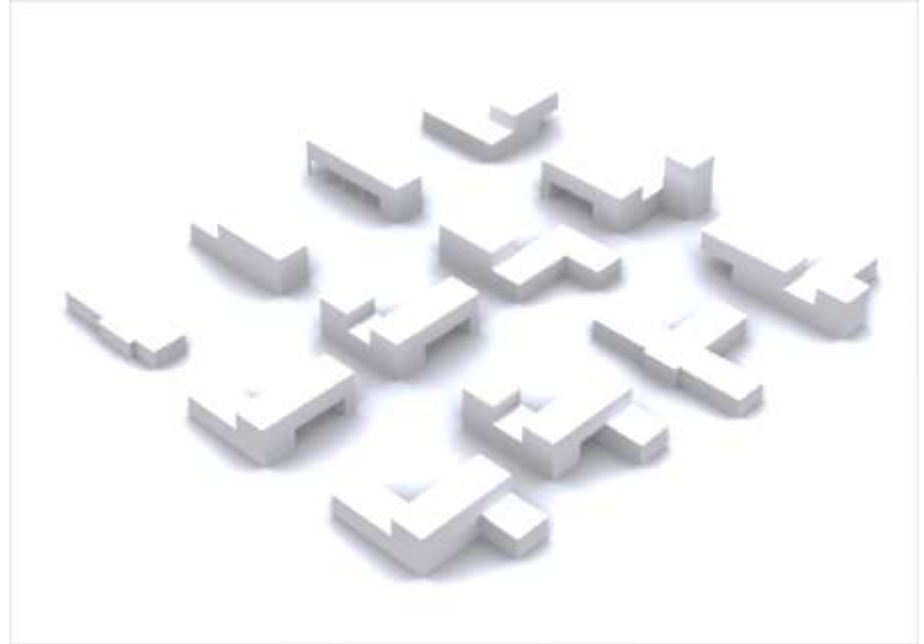
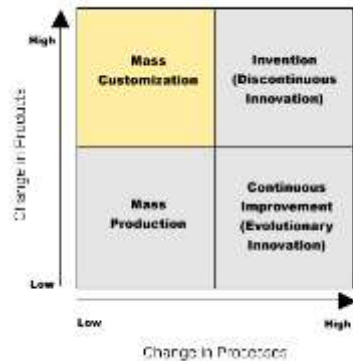
Kontti 2.0



Liikkuva paviljonki

Masscustomization

- Solution Space
- Choice Architecture
- Modularity



Omistajuus

Omistajuus

1) Sosiaalinen omistajuus

- 1) Kokemus kuulumisesta
- 2) Kokemus yhdessä kehittymisestä

2) Virtuaalinen omistajuus

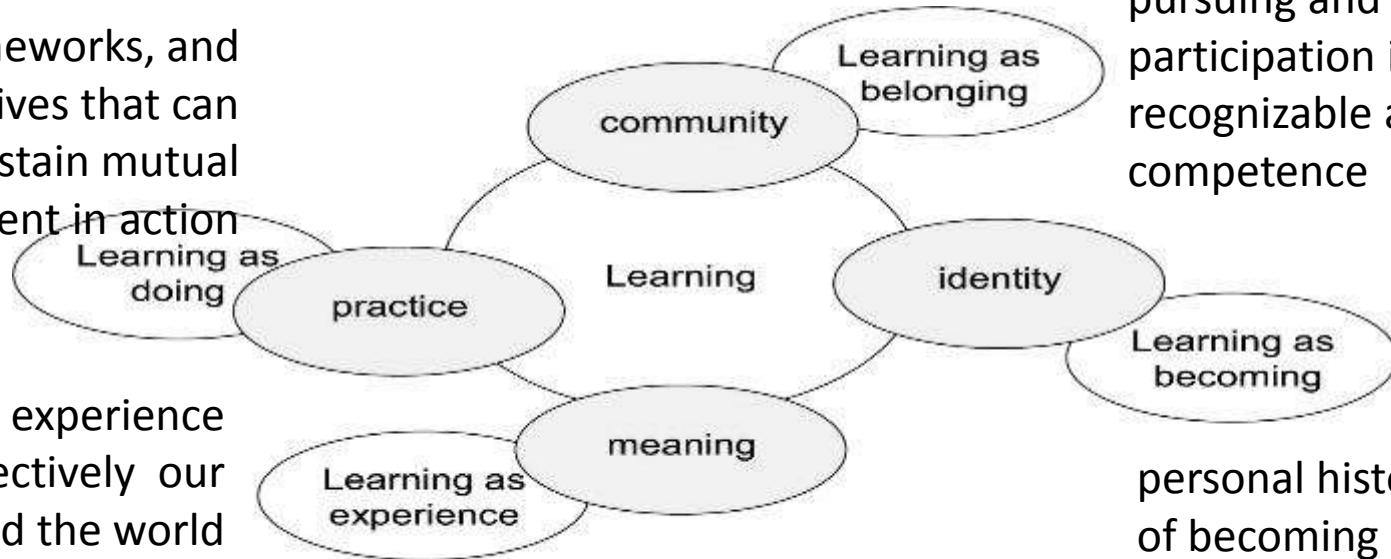
- 1) Konfiguroitavat ratkaisut
- 2) Yhteisöllinen omistajuus, meidän ratkaisu

3) Fyysinen omistajuus

- 1) Oma paikka
- 2) Meidän ympäristö

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

to experience collectively our life and the world as meaningful

Source: Wenger (1998)

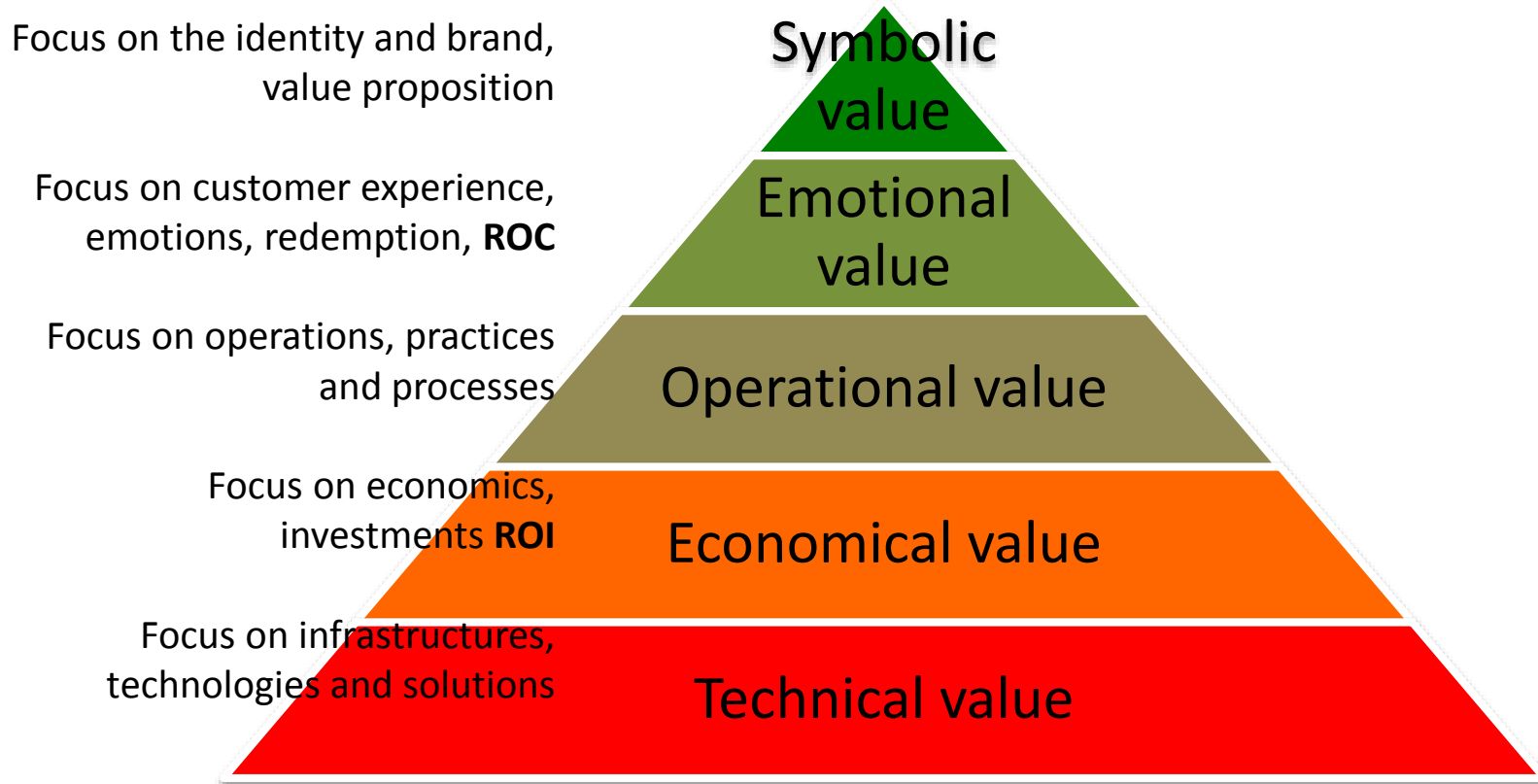
personal histories of becoming in the context of our communities.

	Social systems	Physical systems	Digital systems
Belonging	Participation is recognized as competence	Sense of ownership. School as a place for value co creation	Social media
Becoming	Personal histories of becoming	Memory of the space, perceivable interventions	Digital histories of accomplishments
Experiencing	Experience collectively	Co learning environments. Flipped classroom	Community of individuals
Doing	Mutual engagement in action	Co creation environments	Co creation environments

our enterprises are defined as worth pursuing and our participation is recognizable as personal histories of becoming in the context of our communities.

to experience collectively our life and the world as meaningful frameworks, and perspectives that can sustain mutual engagement in action

Customer value



Symbolic Value

Inspirational, sense of belonging



Emotional value

Becoming, shared histories



Operational value



Co-creating

Economical value

Shared resources



Saavutettavuus



Saavutettavuus

1) Sosiaalinen saavutettavuus

- 1) Yhteisöllisyys
- 2) Yhdessä kehittymisen tarinat

2) Virtuaalinen saavutettavuus

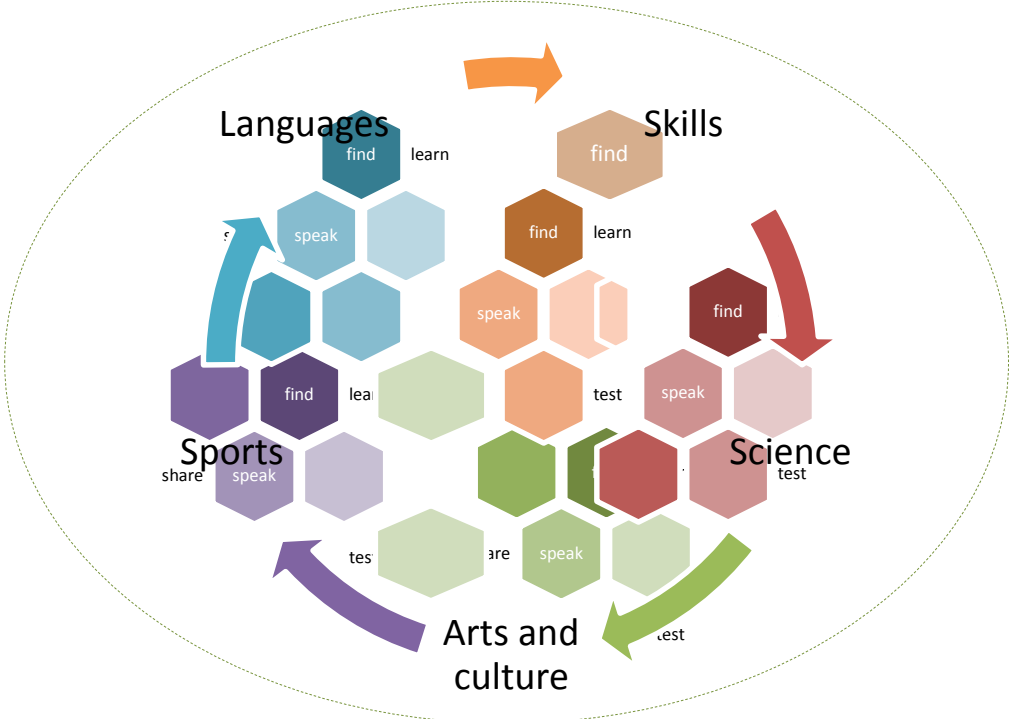
- 1) Konfiguroitavat ratkaisut, tiedon saavutettavuus
- 2) Sosiaalinen media

3) Fyysinen saavutettavuus

- 1) Omassa yhteisössä, liikenteellisesti saavutettavissa
- 2) Resurssien tarjoutuminen

Koulu tuotteena: prosessit dynaamisia ja lopputuote staattinen

Koulu palveluna: prosessit staattisia ja lopputuote dynaaminen

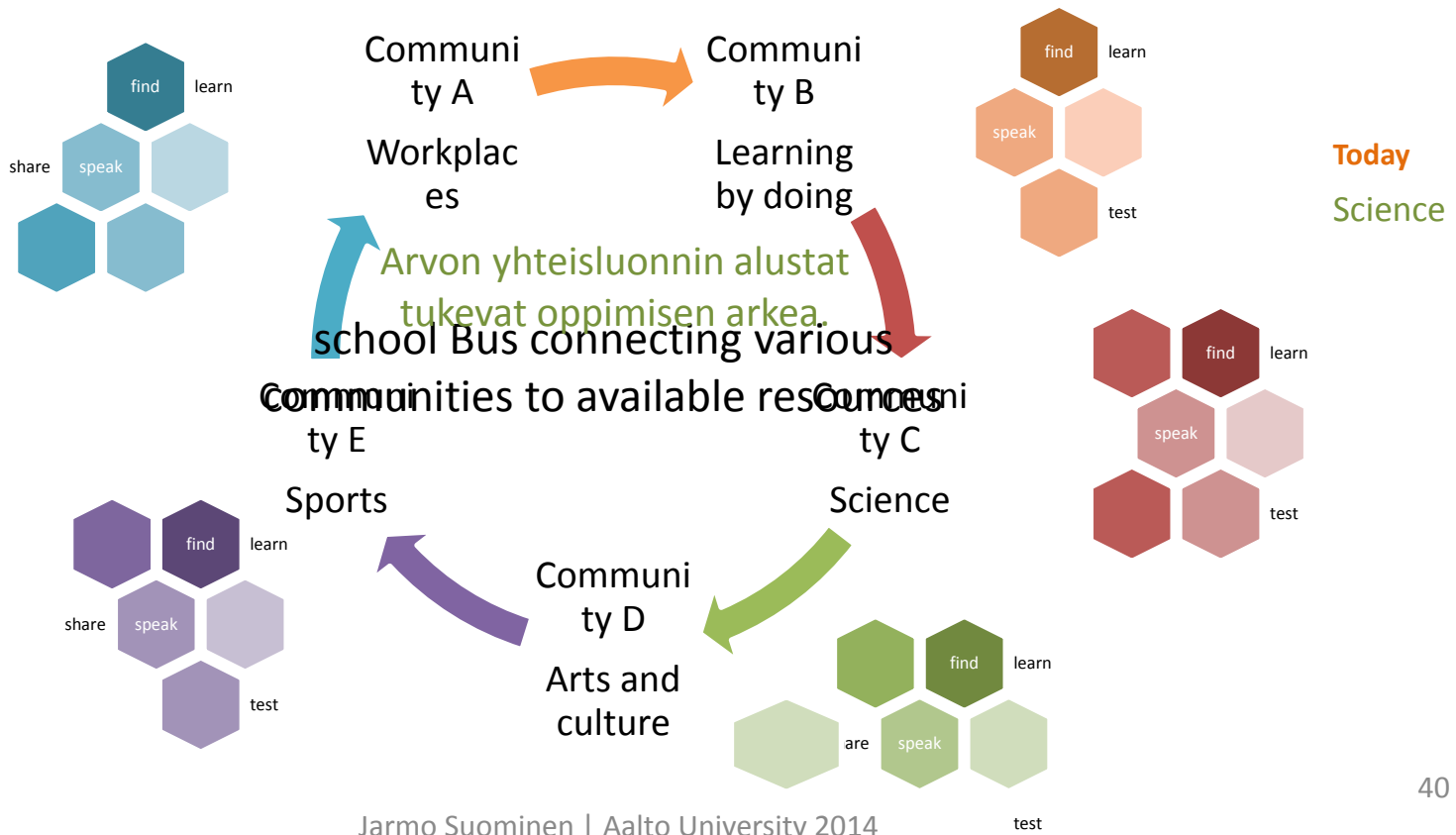


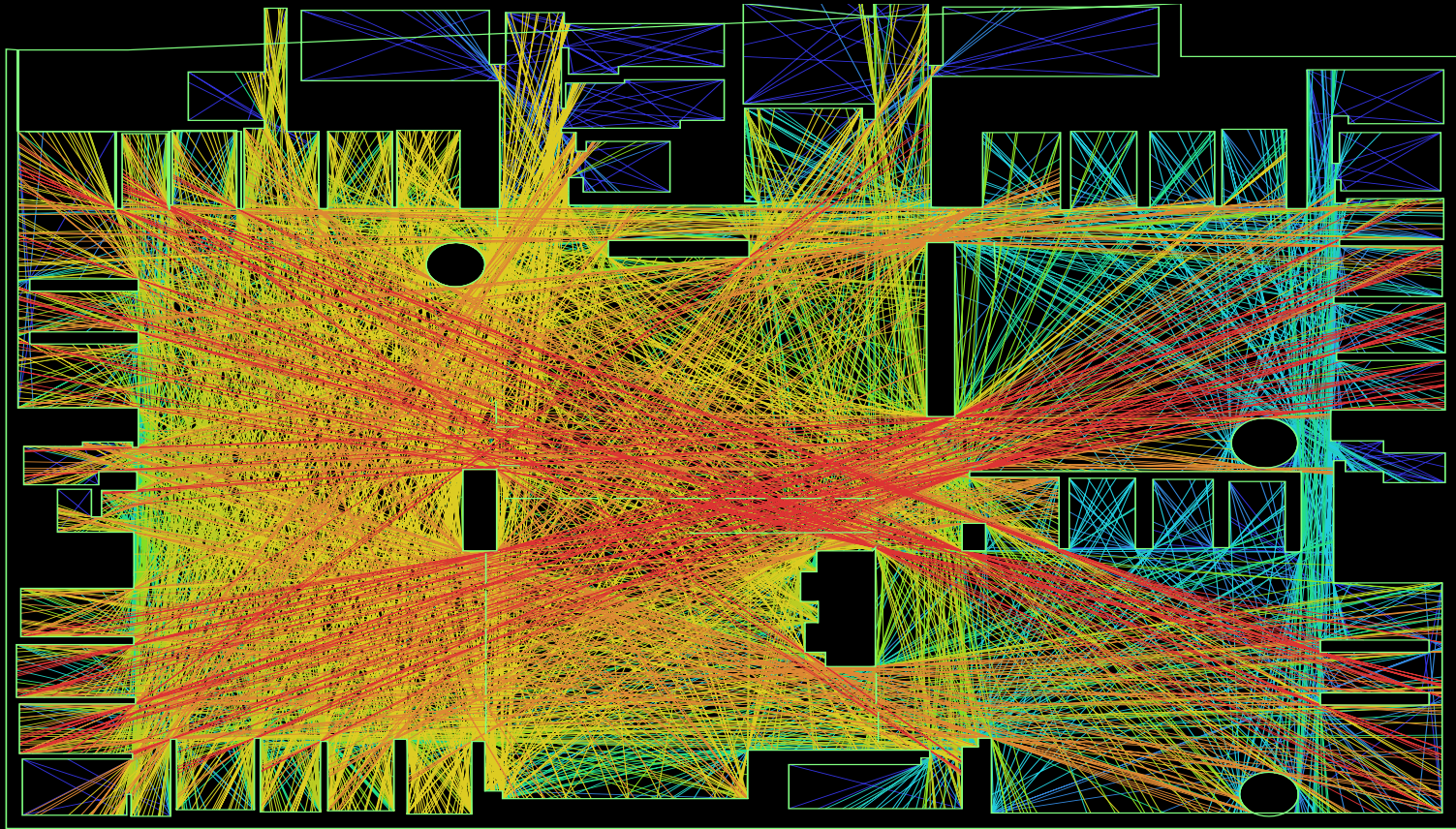
	Today
08-09	Math
09-10	English
10-11	Physics
11-12	Lunch
12-13	Chemistry
13-14	Music
14-15	Sports

Product efficiency, all features in one place

Koulu tuotteena: prosessit dynaamisia ja lopputuote staattinen

Koulu palveluna: prosessit staattisia ja lopputuote dynaaminen





100m

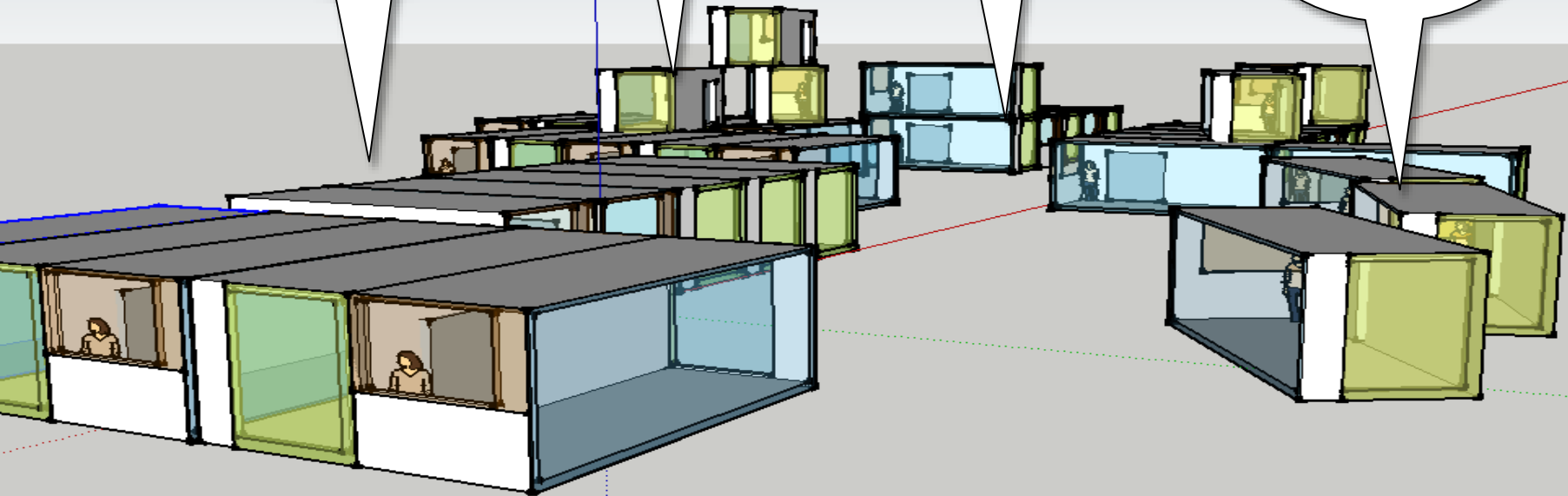
Example of FLEX spaces

Flipped
classrooms

Greenhouse
Urban
Farming

Coding and
Computing

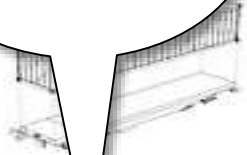
Fablab
3D printing



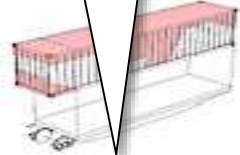
FLEX



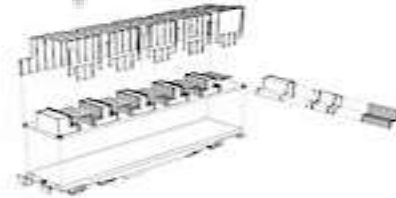
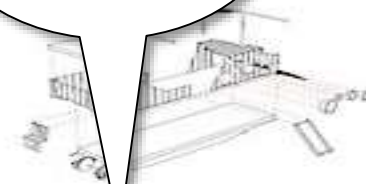
Flipped
classrooms



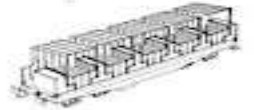
Greenhouse
Urban
Farming



Coding and
Computing



Fablab
3D printing



ECO-SYSTEM OF LEARNING: FOOD EDUCATION

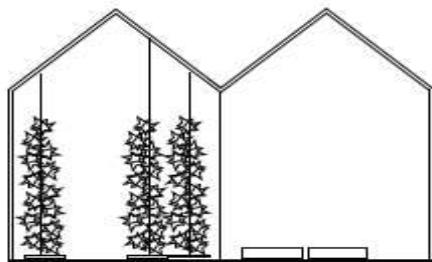
Learning-by-doing in modular structures – engage and empower students to grow food and share responsibility, experience, knowledge.

Container-size modules fit greenhouses – traditional food growing and new technologies, and interactive learning space. These modules are easy to implement, create and adjust: integrate practice and knowledge, creativity and sustainability.

“By understanding where our food comes from, how it was produced and by whom, adults and children can learn how to combine pleasure and responsibility in daily choices and appreciate the cultural and social importance of food”.

Hands-on learning motivates students in the school studies and beyond that. Practice-based lessons on food culture create a successful and creative learning environment, fostering young people to collaborate and interact.

HANDS-ON LEARNING



2 containers:
4,8m x 6m = 28,8m²

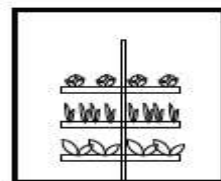
INTERACTIVE LEARNING



2 containers:
4,8m x 6m = 28,8m²

JoKo | Jarmo Suominen, Kirsti Lonka

NEW TECHNOLOGIES



1 container:
2,4m x 6m = 14,4m²

ECO-SYSTEM OF LEARNING: FOOD EDUCATION

HANDS-ON LEARNING



INTERACTIVE LEARNING



NEW TECHNOLOGIES



Joustavuus

Sopeutuu kehittyviin käytänteisiin ja tarpeisiin

Omistajuus

Opettamisesta oppimisen ympäristöiksi, koululaiset kohteista osapuoliksi, sidosryhmänä koko yhteisö

Saavutettavuus

Sitoutuu lokaaleihin tarpeisiin ja reursseihin, tarjoutuen tekemiselle