GLOBAL FORUM
Shaping the Future
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The Digital Convergence

Towards a More Competitive, Mobile and Inclusive Knowledge-Based Society

Convergence and coevolution Business Ecosystems and Digital Ecosystems

A social and technical architecture designed to represent and to diffuse the semantic of the micro-economy of the territories, enabling collaboration and innovation for SMEs

Francesco Nachira

European Commission

DG Information Society and Media

Head of Sector “Technologies for Digital Ecosystems”

http://www.digital-ecosystems.org

SMEs in the global networked economy

EU Peculiarities

- Cultural diversity (services, ideas, business practices, models), leading to creativity
- Small dimensions of enterprises
- Diffused tacit unstructured knowledge, skills and infrastructure (in business clusters)

- SMEs : a weakness or a potential ?
  - Dynamic and complex business interrelations
  - Need of continuous innovation and knowledge
  - Need of specialised resources
  - But SME companies have limited resources and difficulties to:
    - To access to global value chains
    - To access to knowledge
    - To access to specific services (e.g. legal)
    - To adopt new technologies (ICT)
    - To adopt new and distributed business models and work organisations

Two Divides : Geographical + SMEs vs. LEs

• Which future for SMEs , Just hoping to become BIG?

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Unit D5 : ICT for Enterprise Networking

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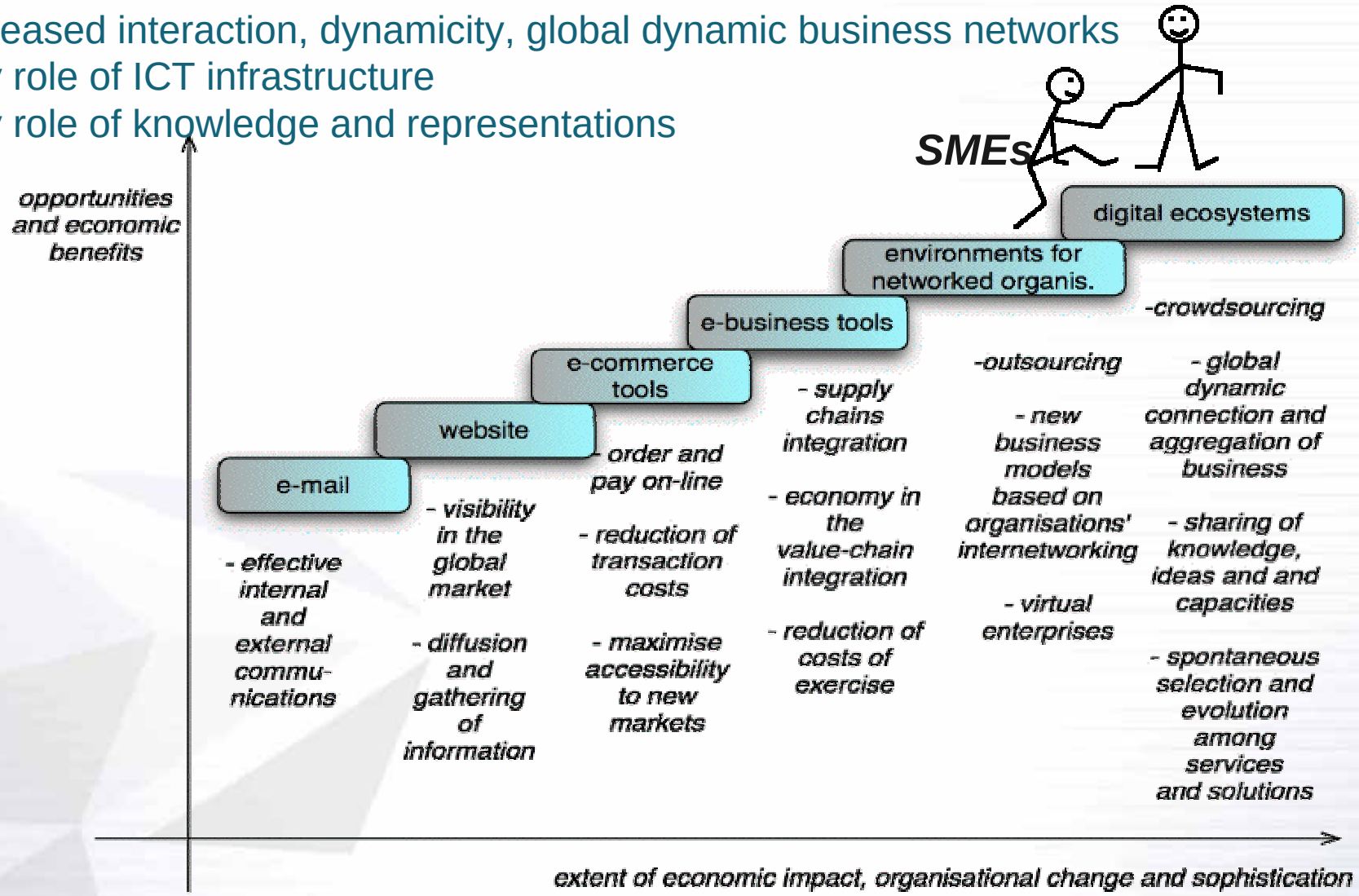
Digital Ecosystem

Coevolution between ICT-adoption and organisational structures

- Increased interaction, dynamicity, global dynamic business networks
- Key role of ICT infrastructure
- Key role of knowledge and representations

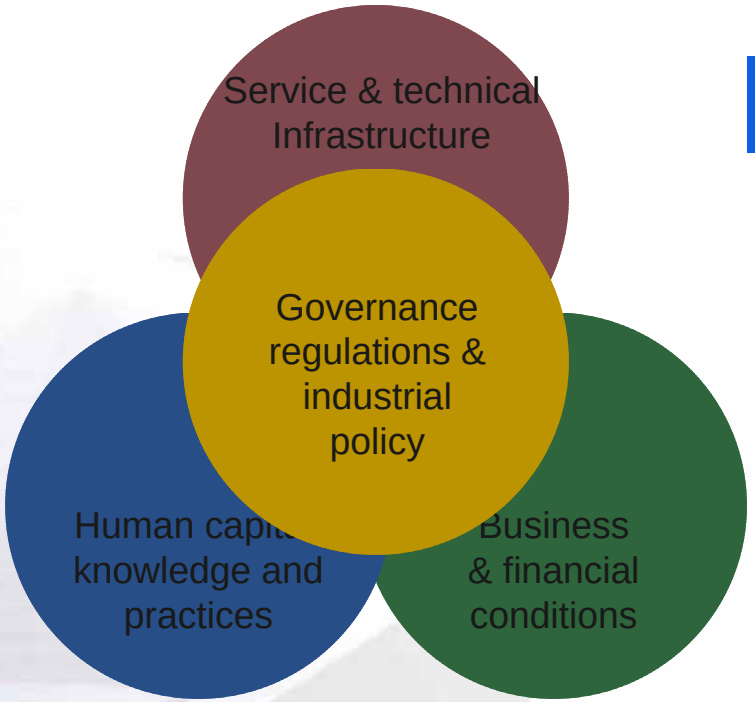


Adapted from Cisco led Information Age Partnership study on e-commerce in small business

The Business Ecosystem

How create a favourable environment to innovation and development: which the conditions for:

- Developing Attracting / developing new ideas and biz/org models
- Attracting / developing capital and human capital
- Developing / connecting new economic activities



Which ICT infrastructure

- provides business networking services, adapted to local needs ?
- transfers and disseminate knowledge ?
- enables people and business networking ?
- represents services, but also micro- and macro-economy?

from semantic of web, to semantic of economy

XXI century: Emergence of unexpected paradigms based on collective creativity and participation

Complex products/services	Produced by large structured corporations	Produced by informal amorphous networks
Knowledge	Owned and protected	Shared
Innovation	Produced by an entity	Produced collectively
Final user	Is passive (“the king”)	Interested to participate
Organisational structure	Based on istructions and structured organisations	Self-organised networks
Motivation	Incentives, personal advantages	Self-esteem, sense of responsibiliy
Advances in IST	originated by technology	Originated by business and people networking
Examples:	*LE move from outsourcing to crowdsourcing*	*Wikipedia, Linux, eBay, Youtube, last.fm, …*

Peole/organisations become connected,

• build communities that share objectives, activities, knowledge,

Opportunities for SMEs and individuals

• socially recognised by developing capacity and creativity

Shift of paradigm

Engineers: “problem solving” approach: isolate problem,
identify variables, make a plan …

Economy as machine

Complexity: Ecosystemic approach:

Economy as ecosystem

From building a machine --> nutruring a garden
From “engineering approach” --> “ecosystemic approach”
From making a plan --> creating the conditions

Processes: education -> empowerment -> participation ->
-> new economic activites -> innovation > employment

Richness of: ideas, talents, micro-economic activities, models

Development by including in the production process the excluded
[building capacity + infrastructures]

… and new collective ideas into the innovation process

Social networking

collective construction of shared semantic leading to recommendations and self-organisation

BOOKS *Amazon*

- it tracks the books acquired and the user evaluations
+ suggests books you may like

MUSIC *Last.fm*

- users classify the kind of music based on their perceptions
- the system track the music played
- the system groups users in communities
+ it creates on the fly customised radio station you like
+ allows contacts among members of communities

BUSINESS *eBay*

- buyers provide a feedback on the reputation of the sellers
+ reputation system is used to build trust and
to find the most reliable sellers

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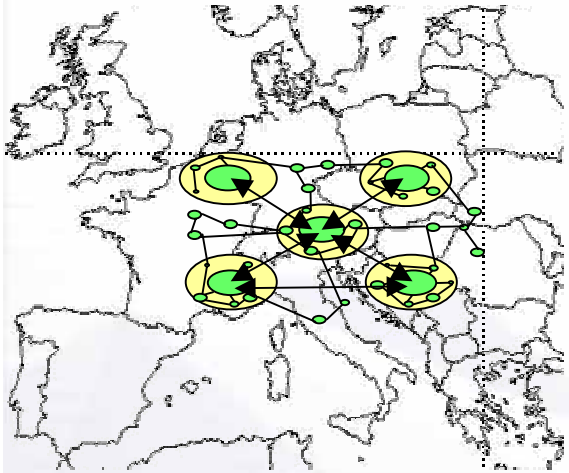
Digital Ecosystem

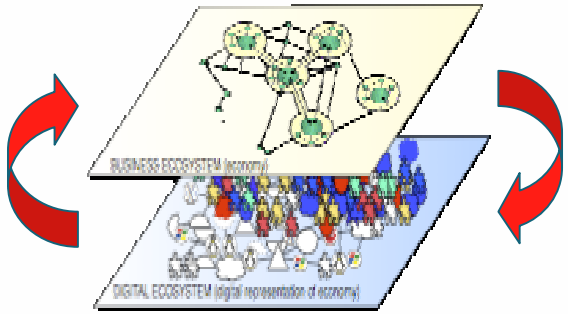
Innovation from business + social networking
How to represent the economy of territories

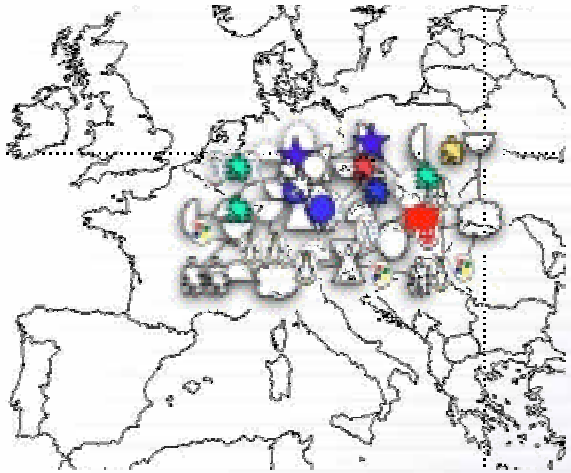
***ECONOMY** Digital Business Ecosystem*

- *description of services, products, business models, activities, talents, competences*

+ recommend services, potential collaborations, cluster,
(allowing new models of organisation e.g. crowdsourcing)







This ICT Technology has been developed, and will keep evolving (as an ecosystem) - public and free

Like a collective brain

A) representing / encoding

B) storing

C) retrieval

[A] Represent / Encode

What? software components, applications, services, …
business processes and models, revenue models, laws …
trust relationships, reputation …. skills, talents, ideas

ANY USEFUL REPRESENTATION, EXPRESSED IN A LANGUAGE (formal or natural), DIGITALISED AND LAUNCHED ON THE NET, WHICH CAN BE PROCESSED (by computers and/or humans)

Repres. of service:
- *biz model*
- *rev. model*
- *comp. model*
- *ref. to Ontology*

How to collect it ? How reach consensus?
Collective construction of shared semantic [reputation]
Gradually, bottom-up: social networking with participation of local governemnts and PPP + motivation, value-added

[B] Store

No single point of control and failure (tech-organis)

- Holographic, distributed as in the brain
- Technologies developed in FP5,FP6 (P2P, FADA, …) free and open source (LGPL, EPL) + Open Knowledge Space (CC)

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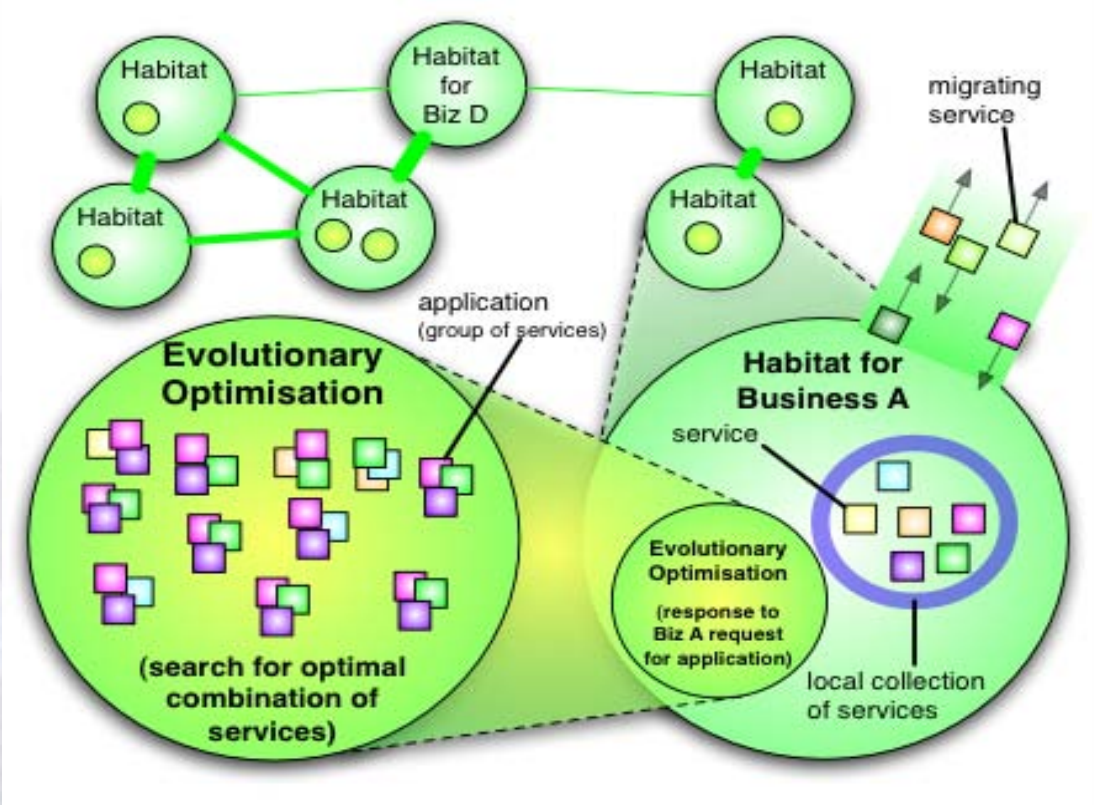
Digital Ecosystem

[C] Retrieval - Biz Tune

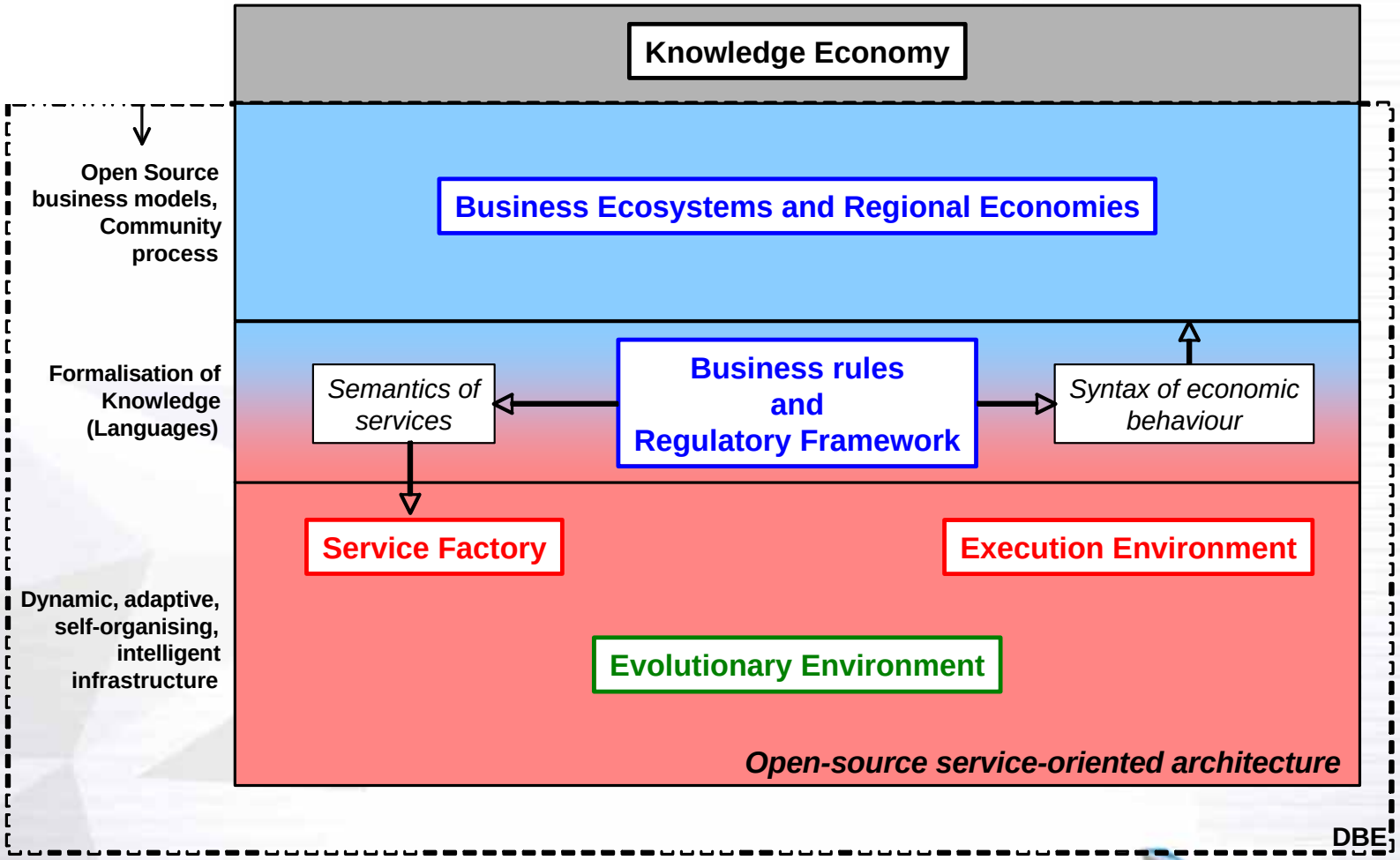
Taking advantage from natural science

- Concepts of habitat, migration, evolution, digital species, …..
- Spontaneous networking and self-organisation



DBE: A public good for expressing and accessing to the aspects of Knowledge Economy, for networking

(talent. capacities, competences, ideas, services, products, …)

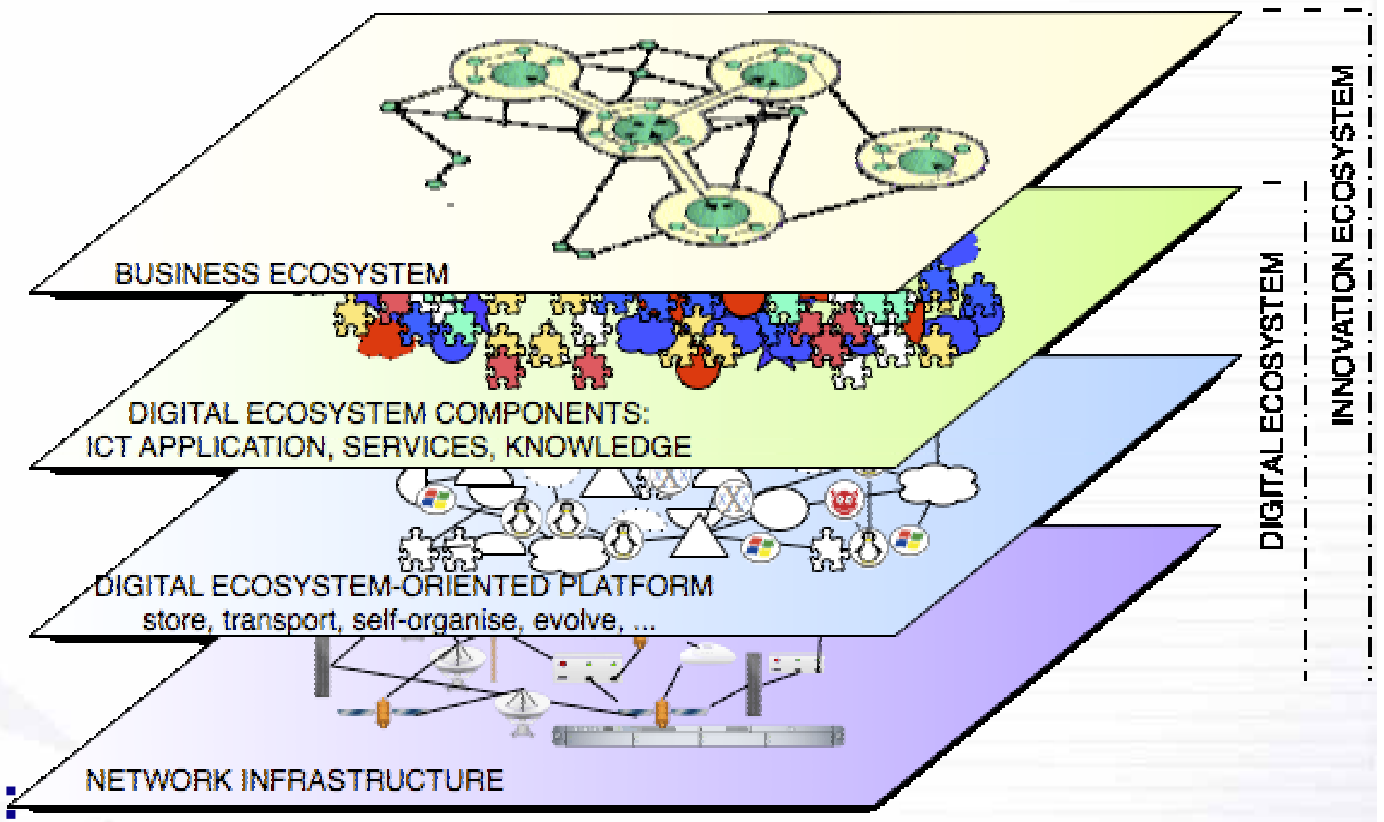


Consensual representation of economy

Economy
(business ecosystem)

Structural coupling

ICT
(digital ecosystem)



Derivative work from Salzburg Technical University

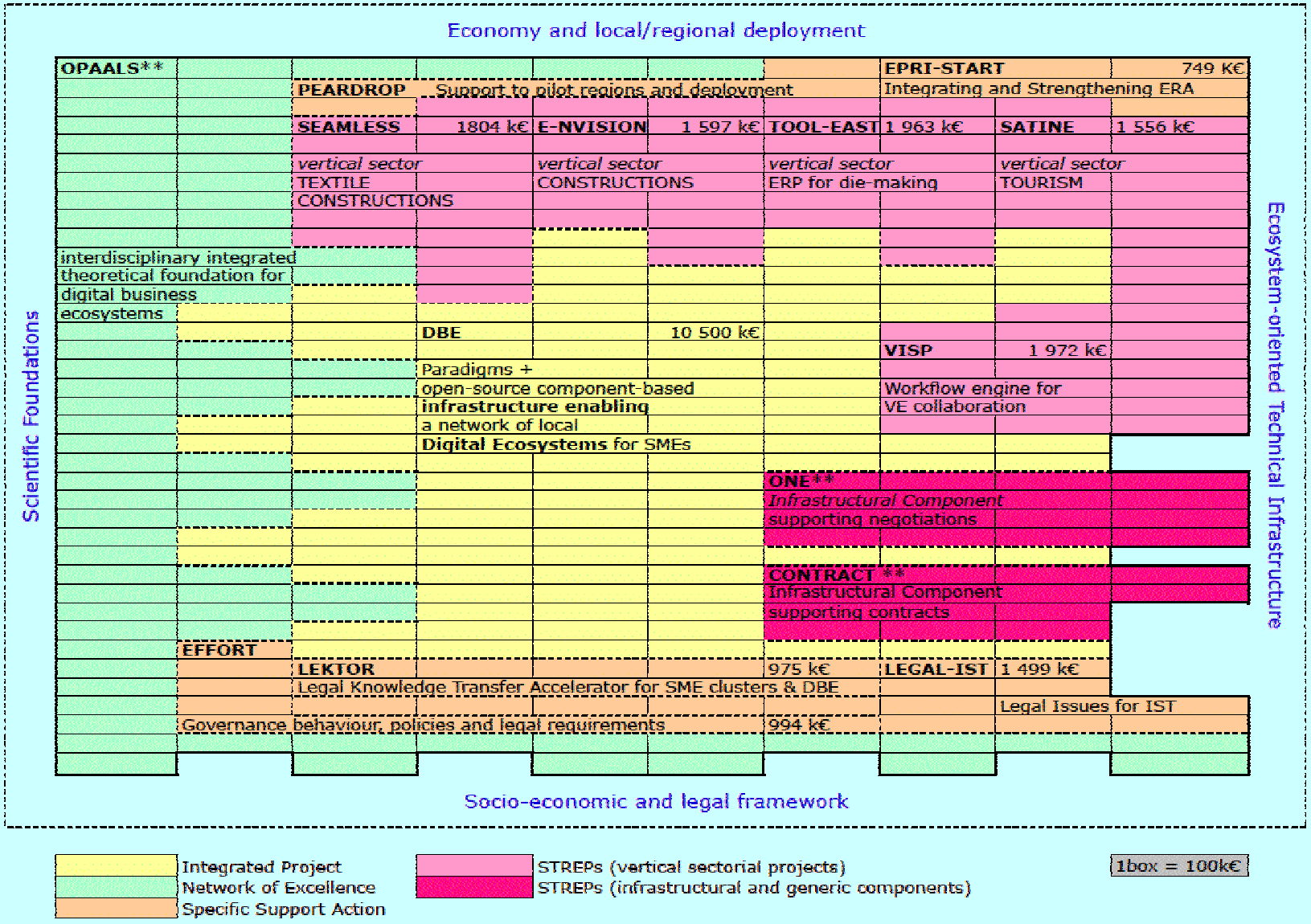
Digital ecosystem:

1. **digital common infrastructure**
2. **ecosytem of knowledge & services (with multiple business models)**

Collectively built representation of the economy

Issue of Governance

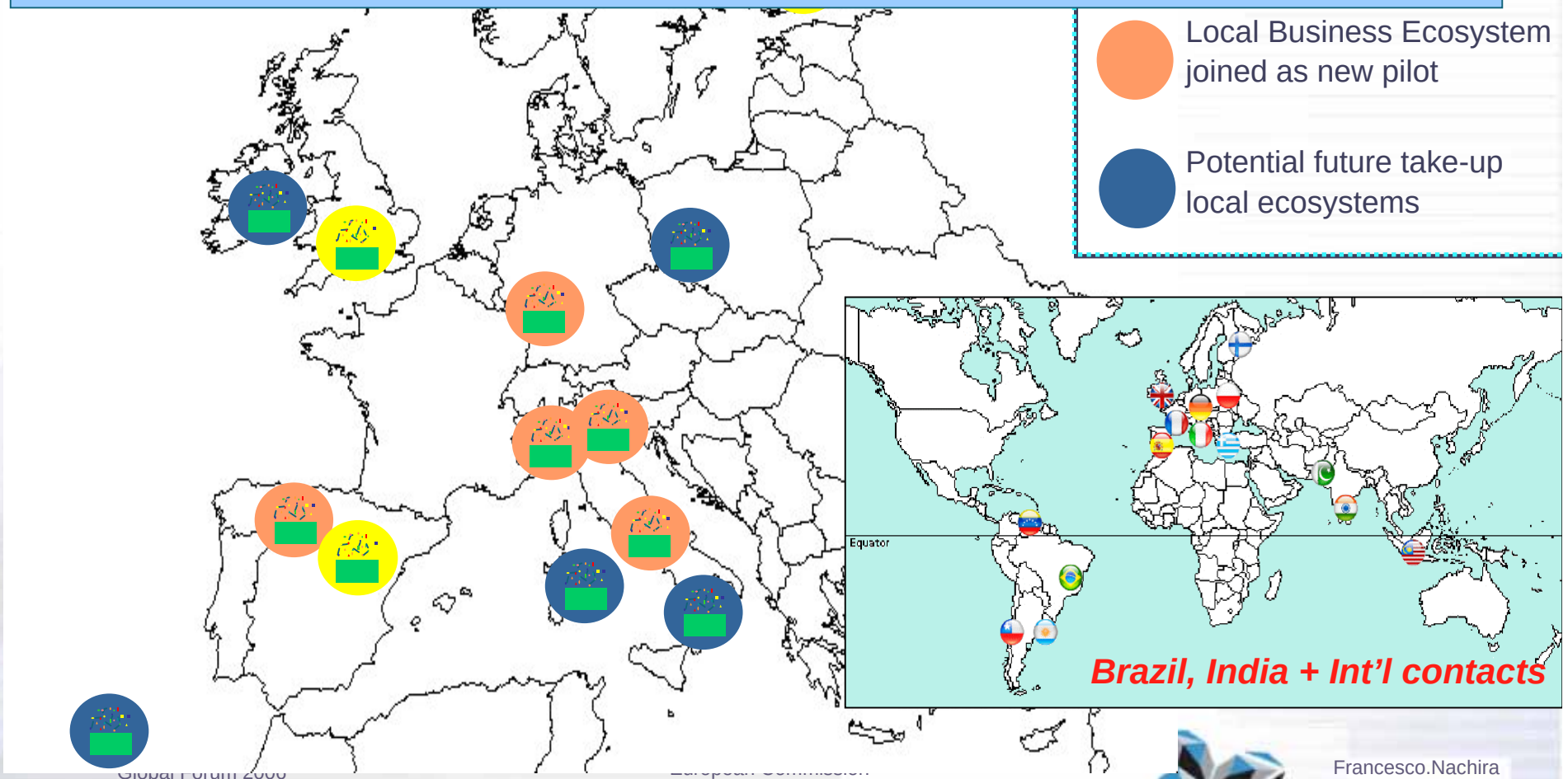
The Cluster of FP6 Research Projects on Digital Ecosystems



Digital Ecosystem pilot regions (at October 2005)

More information on

http://www.digital-ecosystems.org



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