



39 Countries (NGIs)

New *industry perspectives* emerging from the **EGI model**

dr. Antonio Candiello
INFN/IT, candiello@pd.infn.it



A. Candiello, INFN



Summary



- EGI fundamentals
- Actors and Functions
- Business in the EGI phase
- (Commercial) Business Models
- Final Questions



EGI Basic Elements

- **EGI = NGIs + EGI.org**
 - **NGIs** *basic country-based actors*
 - national funding
 - own agenda and tasks
 - **EGI Policy Board** (made by NGI reps)
 - **EGI.org** a *coordinating body*
 - EGI **more sustainable** economic model
 - new incomes should later integrate EU funding
- **no middleware *development*** within EGI
 - but, middleware *maintenance* included

EGI.org, NGI and EGI Tasks

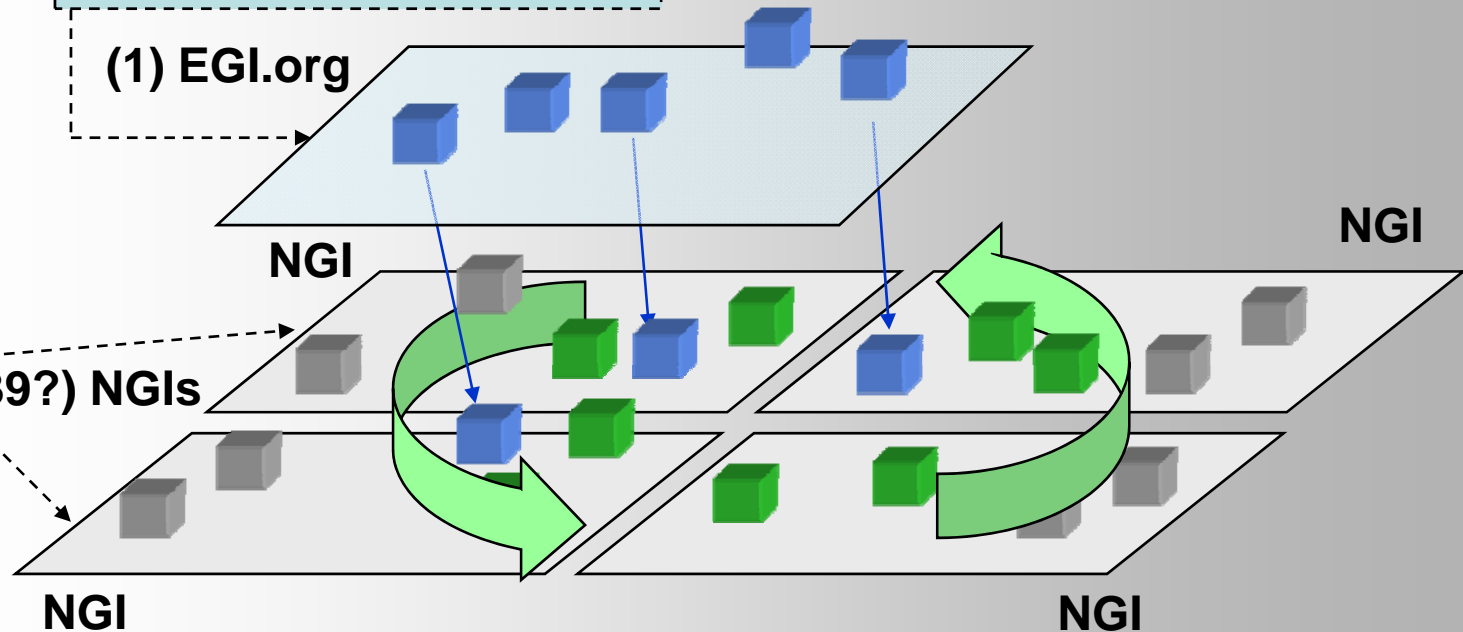
National Grid Initiatives (NGI)
Main EGI *national sustainable actors*

 **EGI.org tasks**
 **NGI International tasks**
 **NGI National tasks**

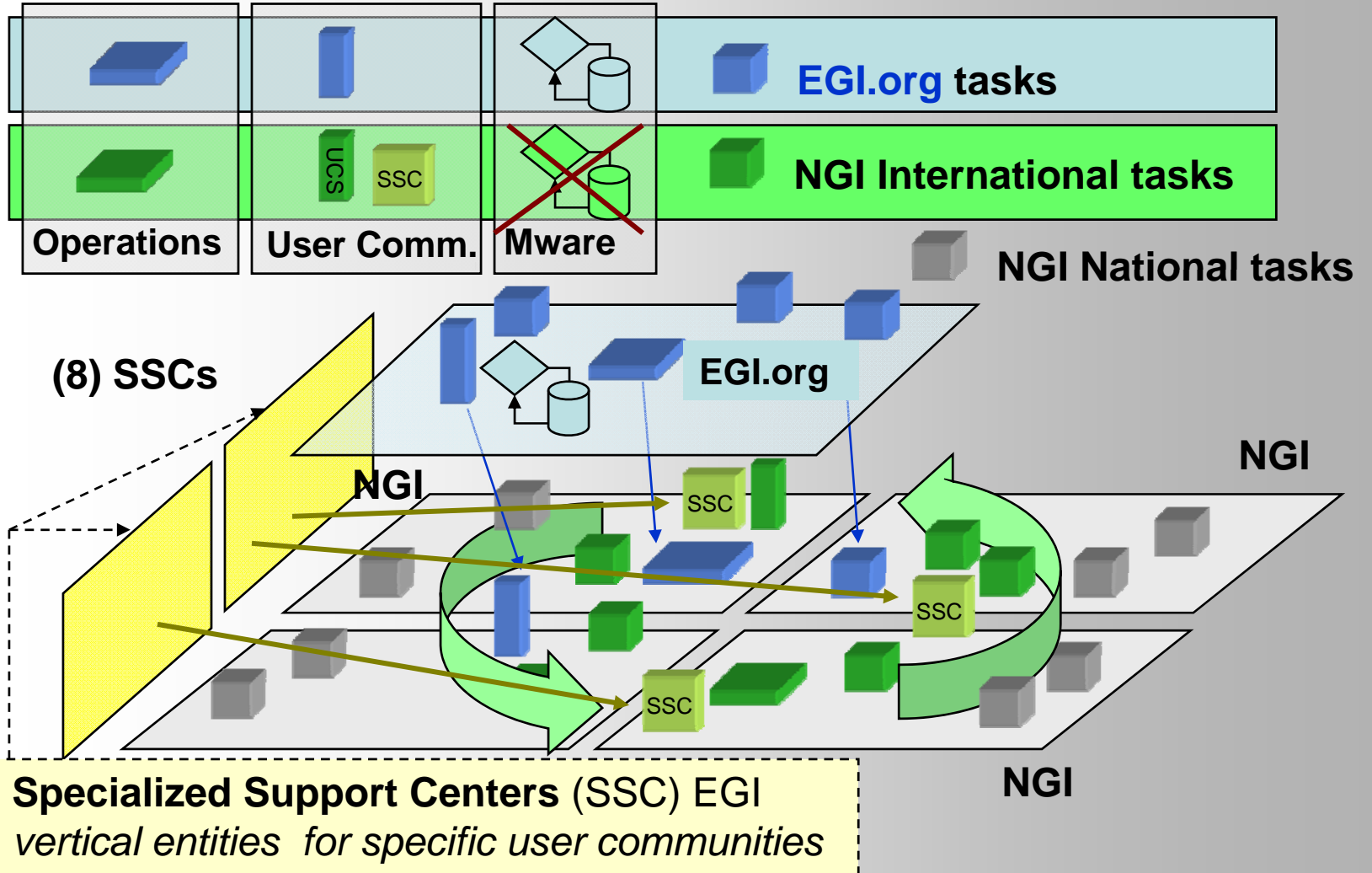
EGI.org coordination body

(1) EGI.org

(39?) NGIs



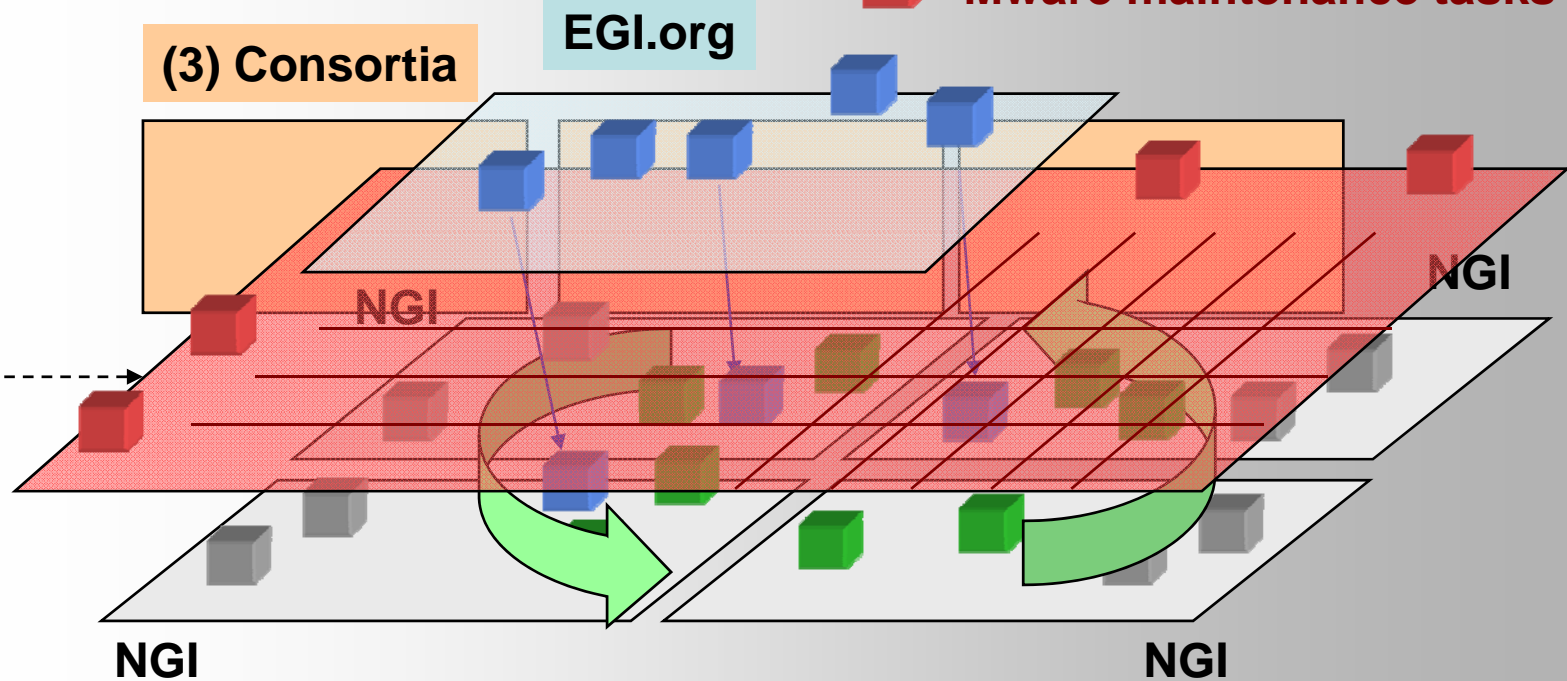
EGI.org, NGI and EGI Tasks



Middleware is a key ingredient !

Unified Middleware Distribution
(UMD) EGI *mw exchange layer*

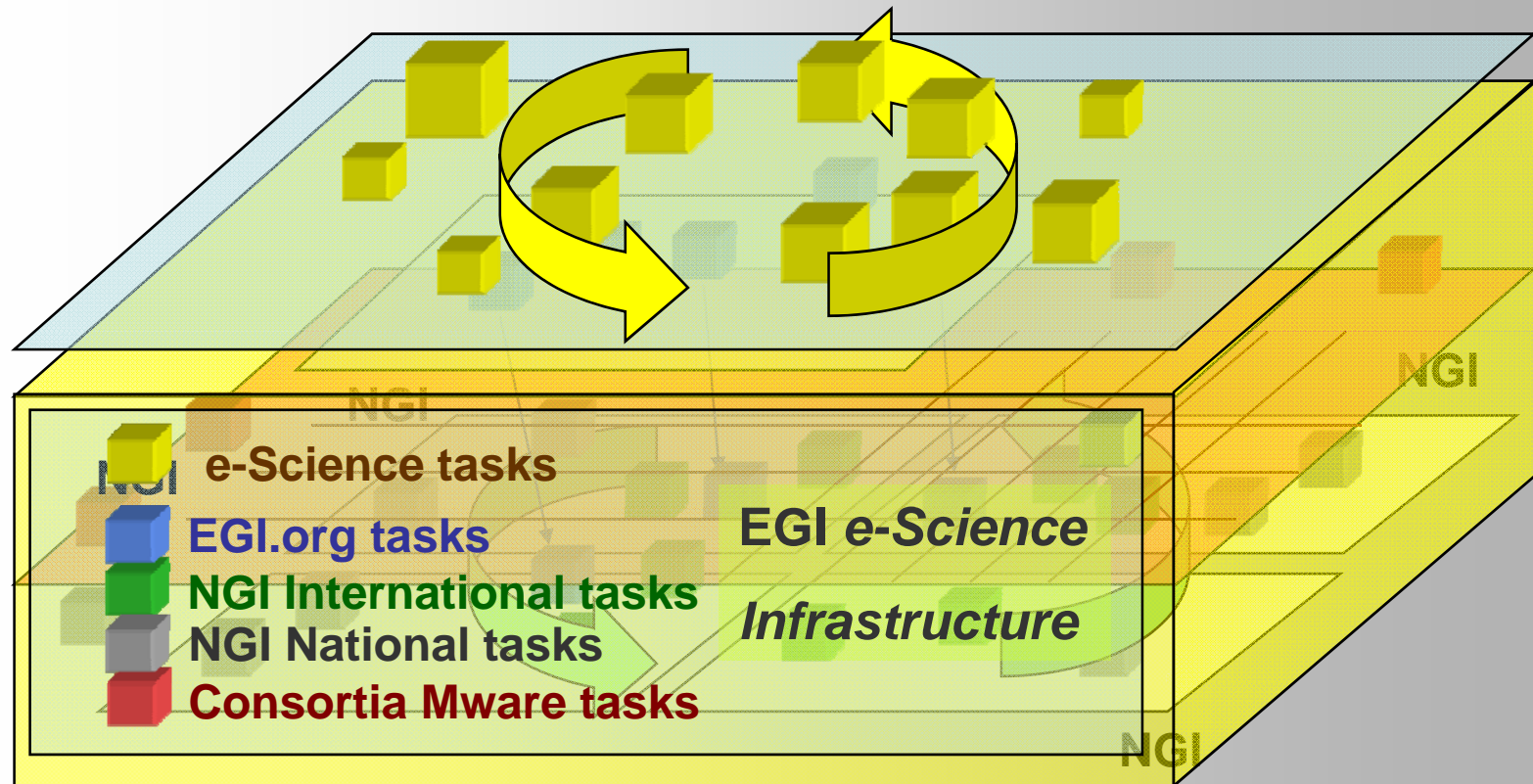
- EGI.org tasks
- NGI International tasks
- NGI National tasks
- Mware maintenance tasks





e-Science is the high-level target

EGI: an infrastructure for *High-Value Services*





EGI Actors

- **NGIs** (20-40: one each for eu **Countries**)
- **EIROs** (**research** org like CERN, EBI, ...)
- **EGI.org** (**coordinating** entity)
- **Consortia** (develop **middleware**)
- **SSCs** (related to **User Communities**)

- Research Institutions/Teams/Projects
- Resource Centers/Providers
- also: UMD, MCB, ...



EGI functions

- **Management** (EGI PB & EGI.org)
 - EGI Coordination (NGI funded)
- **Operations** (NGIs)
 - Resource Management
- **Middleware** (Consortia)
 - Maintenance (EGI-funded)
 - Research & Development (Projects-funded)
- **User Community svces** (NGIs & SSCs)
 - User Support
 - Training
 - User Requirements & Applications

Technology Infrastructures

“Infrastructure” & “Terminal” model



- (old ...) **Railways & trains** ...
- **Internet & web**
- **GSM & cellular phones**



- ... **EGI & Grid Applications** !!!





Business in the EGI era

- Interacting with **clearly-defined actors**
- EGI is like a (government-funded) **“railway infrastructure”**
- only academic-related **“trains”** are running
- industry can:
 - build/operate rails (difficult)
 - build/operate trains (easier)
 - offer services (**“stations”**)





From Web 2.0 ... to **Grid 2.0** !

- **Web 2.0**

- (web) users as producers of:
→ **web content**

- **Grid 2.0**

- cpu/storage sharing already “2.0” model
→ **IT resources** (cpus & storage)
- *also* ... (grid) users as producers of:
→ **services & software** (algorithms & apps)

Suggestions for **Business & Grids**



Distinguish industry between:

- **Customers**

- companies **using** IT services
 - identify the relevant **areas**



- **Providers**

- companies **offering** IT services
 - **Application** Developers
 - **System-Level** (mw) Developers
 - **Resource** Providers
 - **Service** Providers





Service-related e-Science Areas

- Bioinformatics
- Chemistry
- Earth Sciences (→ eGov)
- Health Sciences (→ eGov)
- Graphic Modeling, Simulations
- Optimization of Traffic Routing
- Structural Engineering (FEMs)
- Engine & Energy Engineering



How to ease Industry Involvement

- join relevant **SSC projects**
- for SMEs
 - create local **sub-national** EGI-linked Grid Initiatives **mixing public & private research** (with some public funding)
 - sustain alliances for using EGI standards in **productive chains**
- for bigger industries:
 - suggest **UMD standards** for corporate multi-site **intra-grids**

(Commercial) Grid Users / Needs

- Computation work (in: cpu x hours or S2I x hours)
- Storage use (in: Gbyte x hours)
- Application **porting** to EGI/UMD
- Deploy of corporate-wide “Intragrids”



find the right **algorithms** ... really:



- **High-level expertise** for *Applied Research*



(Commercial) Grid Providers



- Resource (Centers) Providers
- Middleware Stack Providers
- Application Providers
- Application Service Providers
- Business Users Support Services
- High Level Services



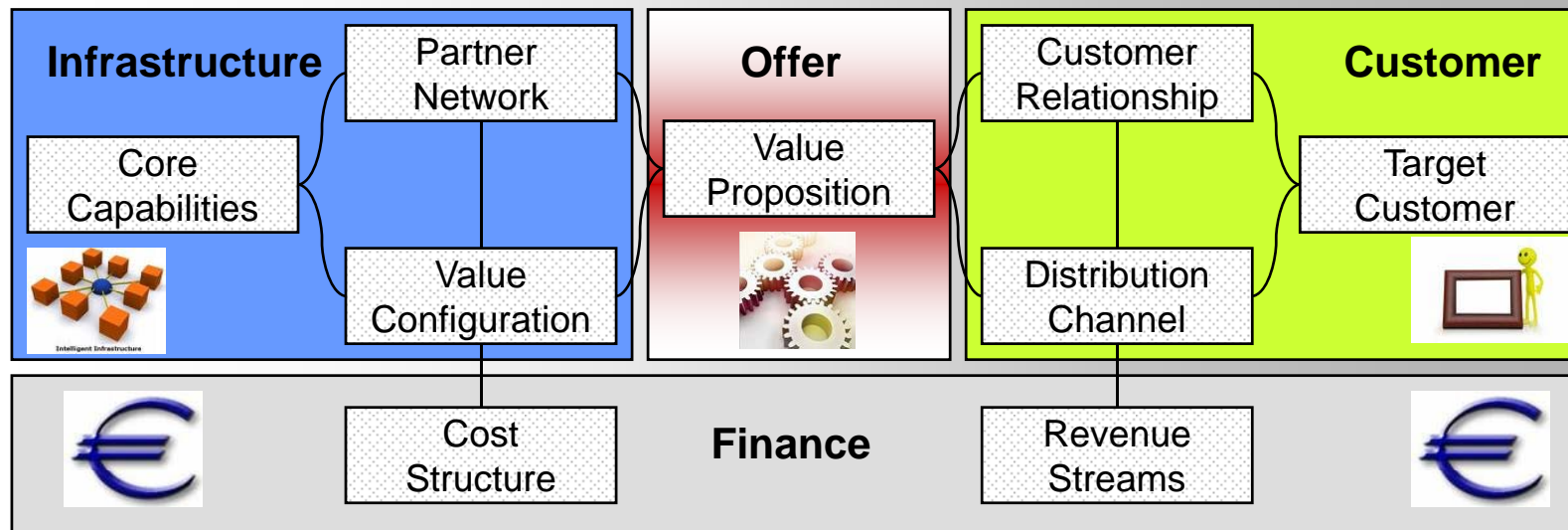


EGI Vs EGEE model for business

	With EGEE: through ...	With EGI: through ...
Information/ agreements	Several Project Leaders	EGI.org, SSCs
Resource Manage & Operate	Research Institutions	NGIs
Middleware Maintain & Develop	EU projects	Consortia
Users Requirements & Applications	Research Institutions	SSCs & NGIs
<i>SUM</i>	<i>All roles mixed</i>	<i>Easier for businesses</i>



Business Model definition*



- **Infrastructure:** core capabilities, partner network, value configuration;
- **Offer:** value proposition;
- **Customer:** customer relationship, distribution channel, target customer;
- **Finance:** cost structure, revenue streams.

* see: A. Osterwalder, 2004



BM Template

Business Model Component		Actor
Infrastructure	Core Capabilities	Capabilities and competencies necessary for the BM
	Partner Network	Business alliances which complement BM
	Value Configuration	What makes the business mutually beneficial for a business and its customers
Offer	Value Proposition	Products and services offered
Customer	Target Customer	Links with the different customer segments
	Distribution Channel	How products and services are delivered to customers
	Customer Relationship	The target audience for products & services
Finance	Cost Structure	Monetary representation of the BM means
	Revenue Streams	The different company revenue flows



Questions



- Business jobs **can't circulate in EGI**.
Need **EGI.biz** for the private sector?
Made up by the same NGIs?
- Which **killer application** for EGI.biz?
- Industry **don't like** sharing too much
with competitors ... how can make
them **trust** the grid?
- **Multipatform** (x gLite) & **accounting**
needed for industries ... how to solve?