BRITISH COUNCIL

Going Global 2014

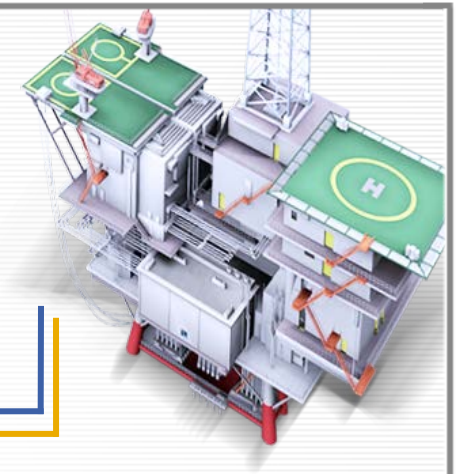
Miami Beach Convention Center
29 April – 1 May 2014

7.4 Lifelong learning: an industry and higher education partnership?

The SENAI Technical Collaborative Networks

Rolando Vargas Vallejos

Sistema Indústria



BRAZILIAN INDUSTRY SYSTEM

Mission: **Promoting competitiveness in Brazilian Industry, by influencing creation of an environment favorable to the business and encouraging human and technological development.**

SENAI *(since 1942)*

Mission: **Promoting vocational and technological education, innovation and transfer of industrial technologies, contributing towards increasing competitiveness in the Brazilian Industry.**

Sistema Indústria

SENAI FIGURES *(2013)*

- Over **3 million enrollments** in vocational and technological education courses
- Over **120 thousand technical advisory services** as well as technological advisory and laboratorial services
- **200 projects for technological innovation**
- **48 international partnerships** in over 25 countries

524 fixed units & 306 mobile units

208 laboratories

29,000 employees

28 industrial sectors

BRAZILIAN COMPETITIVENESS *(2013)*

Economy based on factors of production → Transition → **Economy based on efficiency** → Transition → **Economy based on capacity for innovation**

GDP Per capita (US$/year): 0 | 2.000 | 7.000 | 15.000 | 30.000

38 Countries	34 Countries	28 Countries	15 Countries	29 Countries
India	Paraguay	**Brazil**	China	Australia
Kenya	Bolivia	Mexico, Russian Federation	Taiwan	Canada
Nigeria	Peru	Poland, Chile South Africa		Germany
				USA
				United Kingdom

Source: The Global Competitiveness Index 2012, World Economic Forum

BRAZILIAN CHALLENGES

- Induct **innovation and technological modernization**
- **Support industrial sectors** in the development of products with higher value-added
- **Support R&D** – Small and Medium companies

SENAI EDUCATIONAL STRATEGIES

SENAI Program for the Brazilian Industrial Competitiveness

Low level of proficiency of the average Brazilian students

Low level of students finishing graduation courses related to production, tecnology and construction

SENAI focus in innovation for the next years

Growing demand for a higher educational level for an occupation in the labor market

Dynamic industry occupations profile according to the requirements for competitiveness

Educational Strategic Guidance:

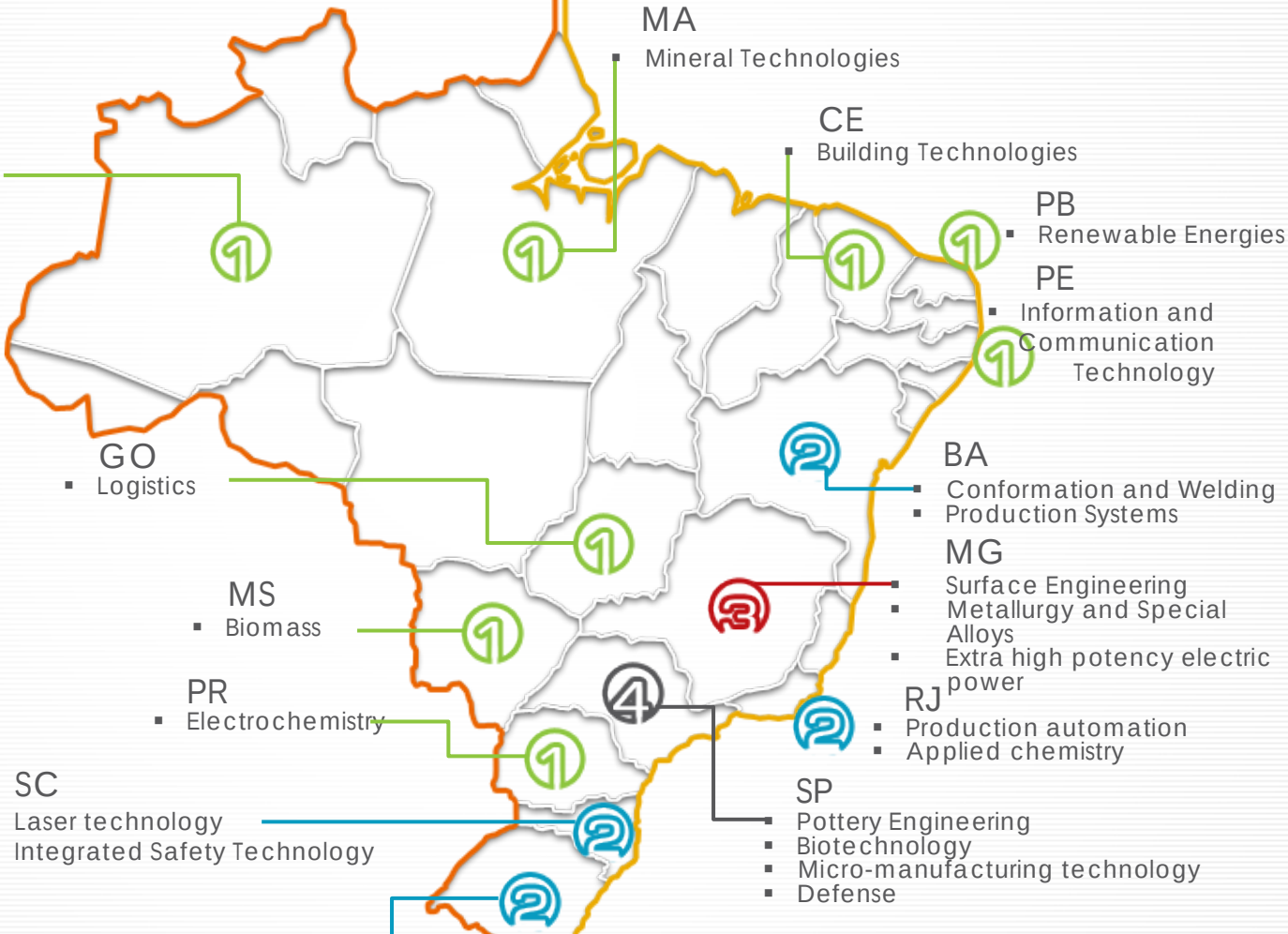
"Expand selectively the offer of technological higher education courses, primarily in unmet demands by the market"

Source: SENAI, Advisia

EDUCATION, TECHNOLOGY AND INNOVATION SENAI STRATEGIC FOCUS

Guidelines	Major Challenges	Strategic Projects
Expand capacity of innovation in the industries	Create implementation projects of 23 Innovation Institutes and 62 Technology Institutes	Implementation Project of the SENAI Innovation and Technology Institutes
Significantly expand compliance with the industry demand by qualified labor	Duplicate number of enrollments in vocational and technological education (4 million)	Expansion of fixed and mobile network
		National Distant Education Program
Develop the core abilities of the industry workers	Develop pedagogical practices and didactic resources	Continued education oriented towards the labor world (1,5 million workers & 428 thousand students)

SENAI INNOVATION INSTITUTES



AM
- Microelectronics

MA
- Mineral Technologies

CE
- Building Technologies

PB
- Renewable Energies

PE
- Information and Communication Technology

GO
- Logistics

BA
- Conformation and Welding
- Production Systems

MG
- Surface Engineering
- Metallurgy and Special Alloys
- Extra high potency electric power

MS
- Biomass

PR
- Electrochemistry

RJ
- Production automation
- Applied chemistry

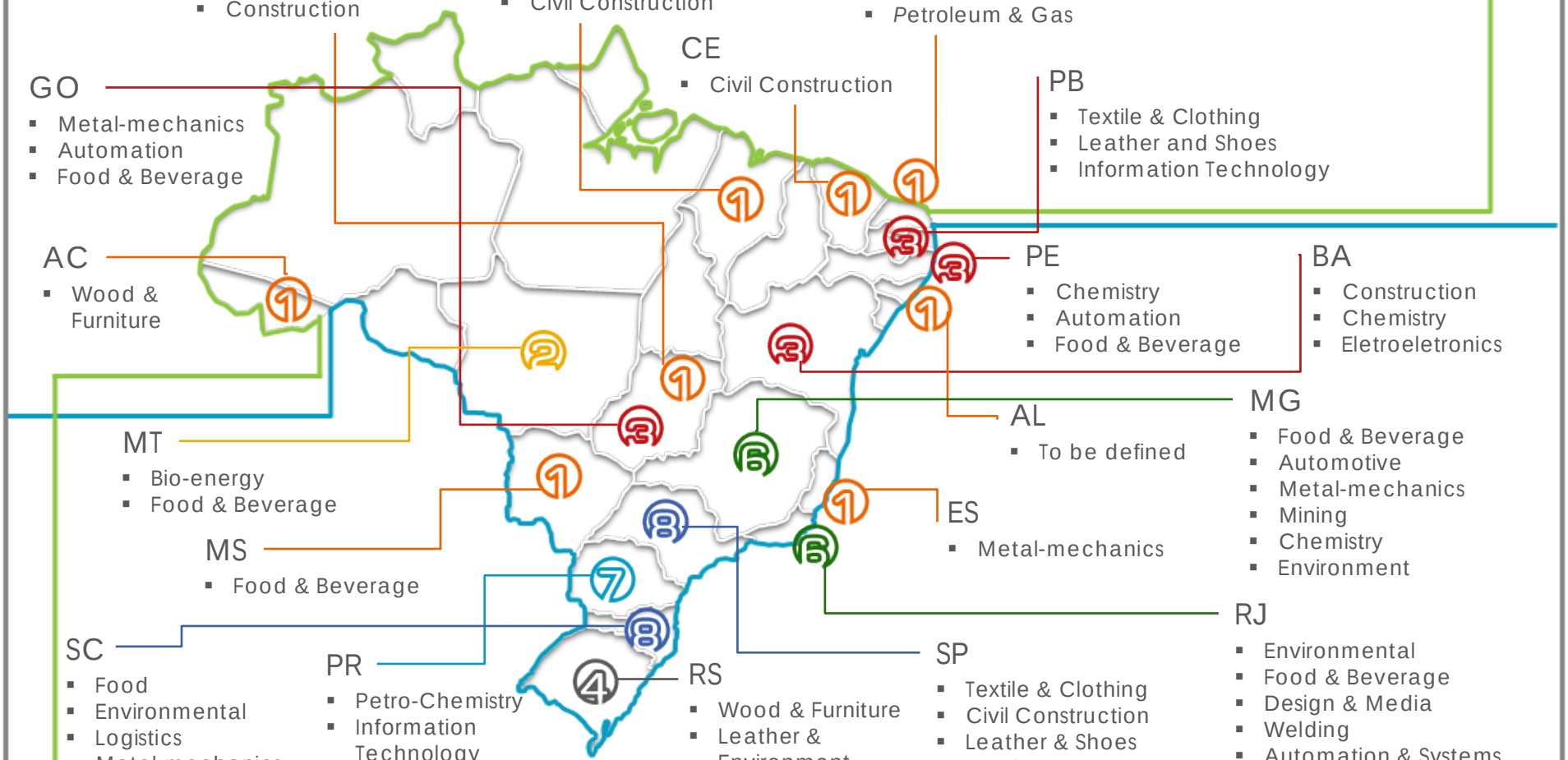
SC
- Laser technology
- Integrated Safety Technology

SP
- Pottery Engineering
- Biotechnology
- Micro-manufacturing technology
- Defense

RS
- Integrated solutions in Metal-Mechanics
- Polymer Engineering

Sistema Indústria

SENAI TECHNOLOGY INSTITUTES



DF
- Construction

MA
- Civil Construction

RN
- Petroleum & Gas

CE
- Civil Construction

GO
- Metal-mechanics
- Automation
- Food & Beverage

PB
- Textile & Clothing
- Leather and Shoes
- Information Technology

AC
- Wood & Furniture

PE
- Chemistry
- Automation
- Food & Beverage

BA
- Construction
- Chemistry
- Eletroeletronics

MG
- Food & Beverage
- Automotive
- Metal-mechanics
- Mining
- Chemistry
- Environment

AL
- To be defined

MT
- Bio-energy
- Food & Beverage

ES
- Metal-mechanics

MS
- Food & Beverage

RJ
- Environmental
- Food & Beverage
- Design & Media
- Welding
- Automation & Systems
- DN – CETIQT – Textile & Clothing

SC
- Food
- Environmental
- Logistics
- Metal-mechanics
- Electro-electronics
- Automation & IT
- Materials
- Textile & Clothing Design

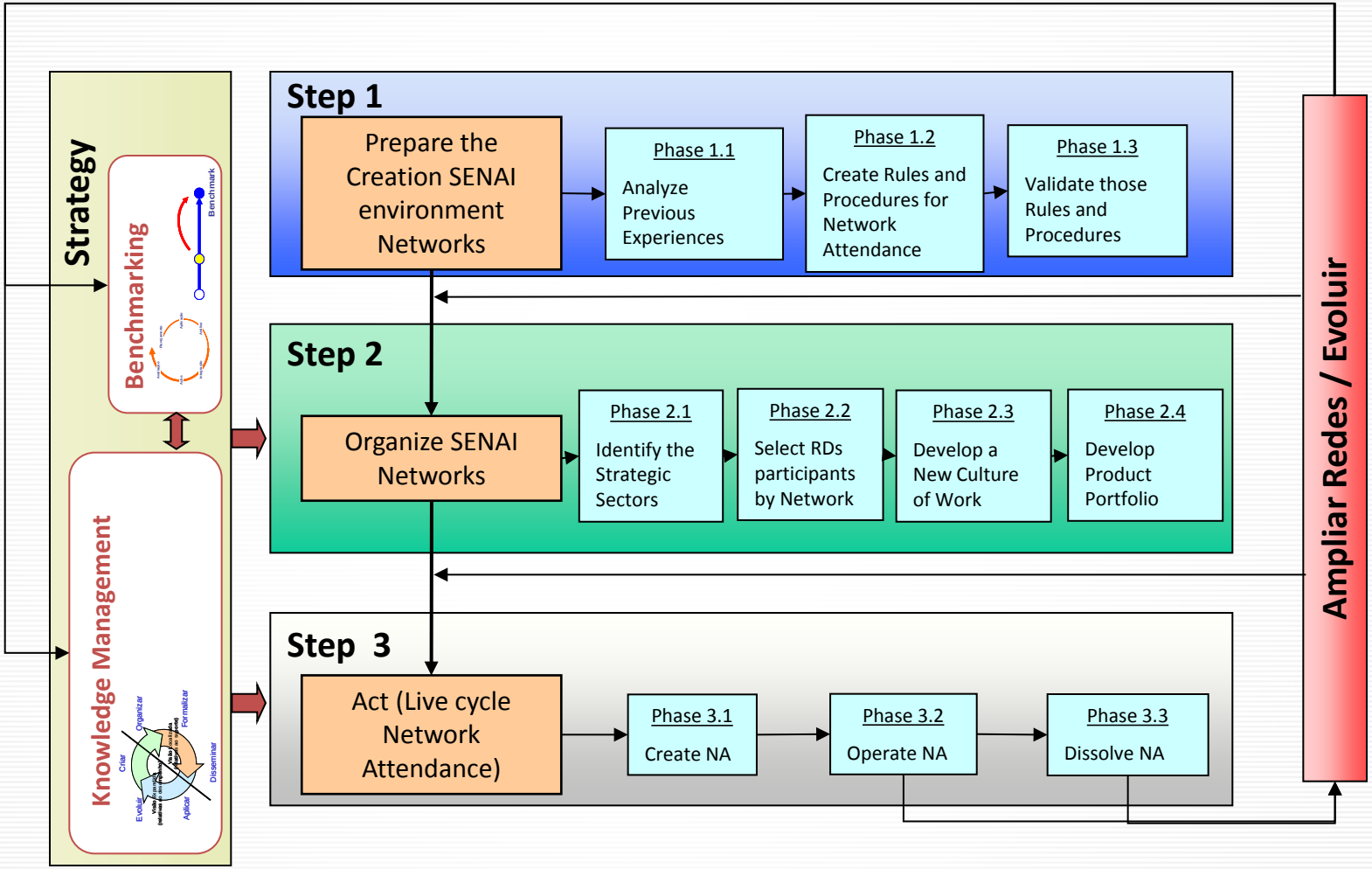
PR
- Petro-Chemistry
- Information Technology
- Wood & Furniture
- Food & Beverage
- Civil Construction
- Metal-mechanics
- Pulp & Paper

RS
- Wood & Furniture
- Leather & Environment
- Automation for Automotive
- Refrigeration & Food

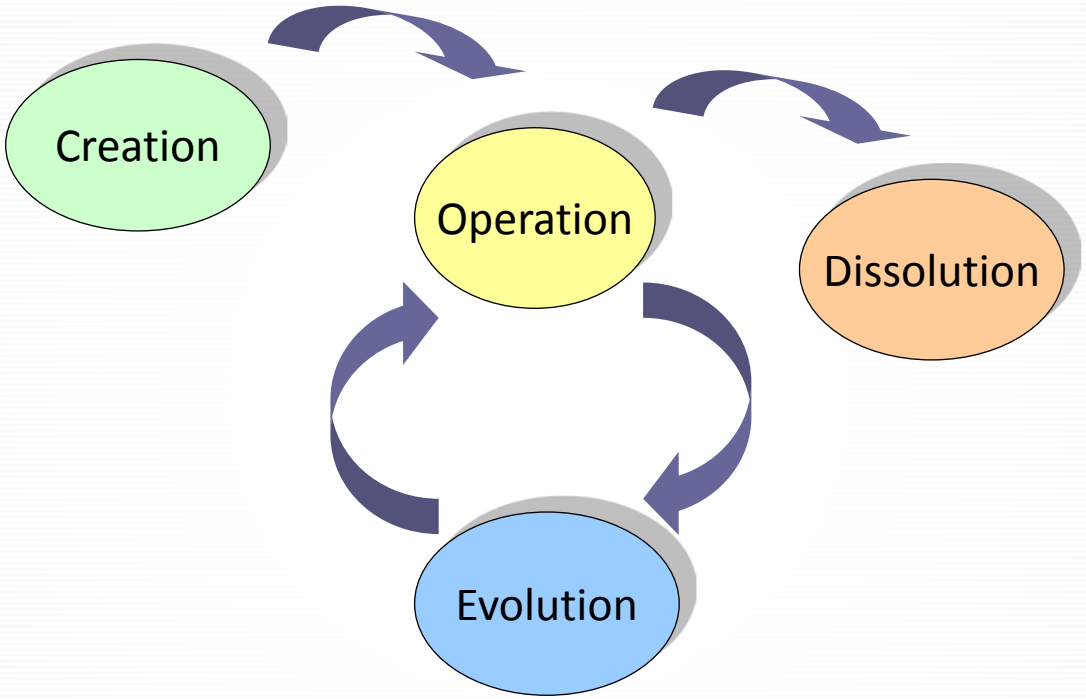
SP
- Textile & Clothing
- Civil Construction
- Leather & Shoes
- Food & Beverage
- Power
- Metal-mechanics
- Environment
- Electronics

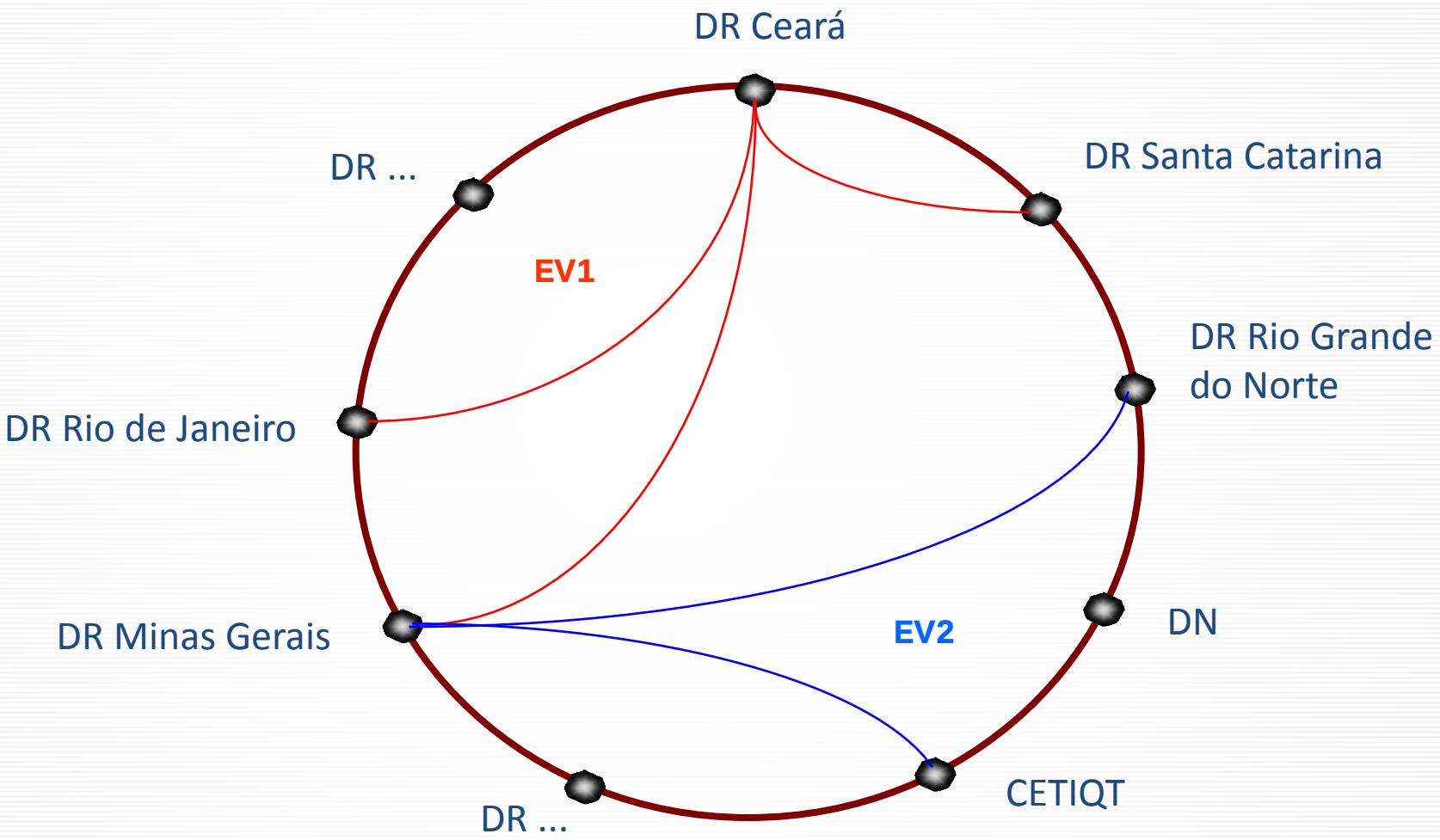
Sistema Indústria

SENAI AmbianCE Framework



Representation of SENAI phases to a network attendance



(Camarinha-Matos e Afsarmanesh, 1999)

Representation of SENAI new culture to network attendances