Observatório Nacional da Indústria

Foresight Model for the Labor Market

Goals

The *Foresight Model for the labor* market aims to identify skilled labor necessary in the following dimensions:

Identification of likely changes in occupation profile.

Identification of likely changes in curriculum.

Identification of likely changes in education provision (regular and retraining courses).

Establishment of educational strategies: teacher training and identification of investment in appropriate educational technologies.

Guiding Questions

What will be the new skills, abilities and knowledge for the coming years?

What are the current competence gaps for the future?

Foresight Model for the Labor Market Pillars

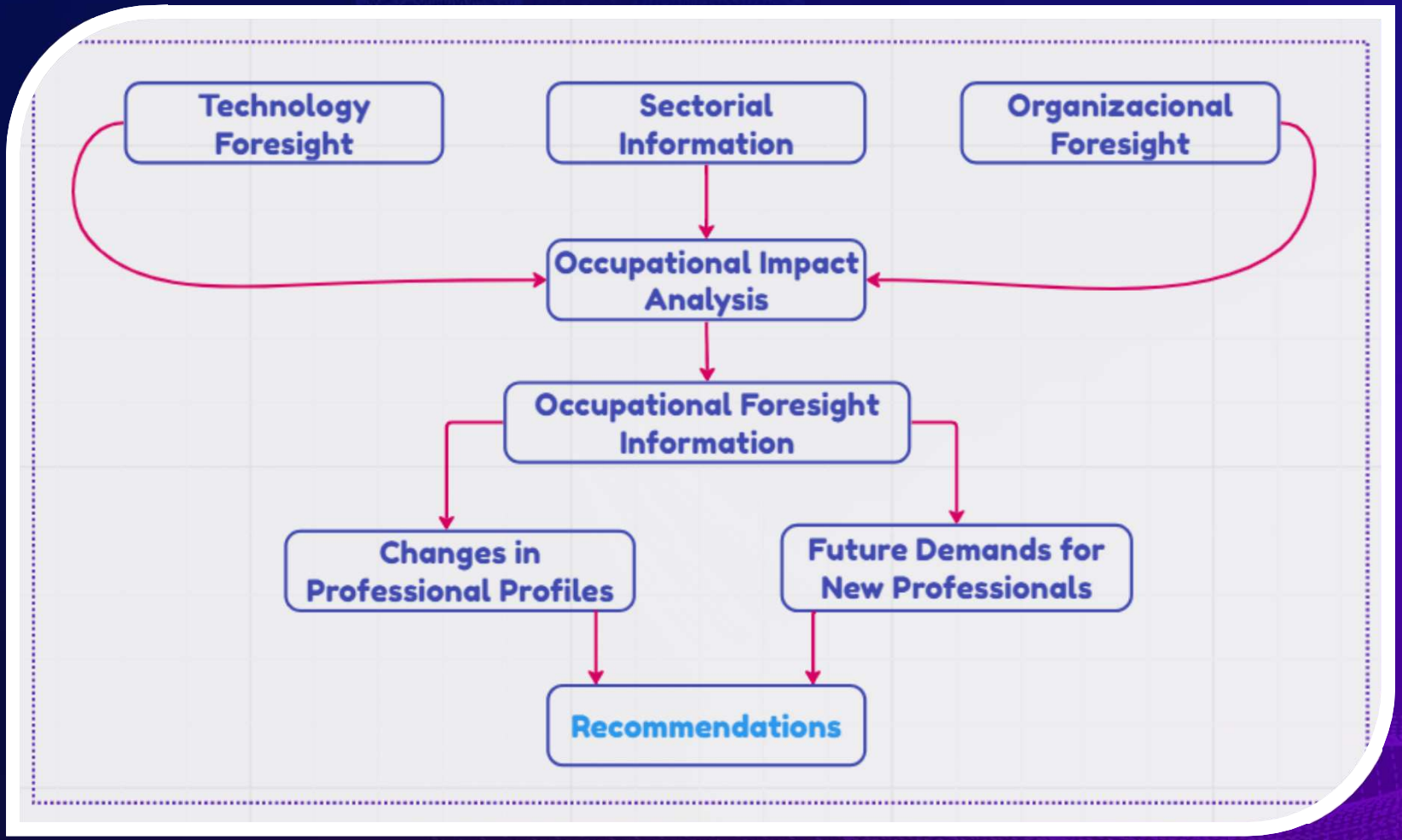
Sectoral framework – It allows us to identify, in details, the future technological and organizational dynamism, as well as its impacts on the work organization structure and specific professional training.

Specific Emerging Technologies – As they are known technologies that remain in the initial phase of commercialization or have a low degree of diffusion on the market, the analysis of their impacts on occupations is safer.

Technological and Organizational Diffusion – Knowing the probable technological and organizational diffusions allows to identify, in a more safety way, those technologies and organizational changes that will have more impacts on the occupations.

Timeframe – The Model establishes for its studies the time horizon of 5 to 10 years. This period of time allows, with greater certainty, that Vocational Training institutions adapt their training processes in the face of probable changes in professional profiles.

General Scheme



Foresight Model for the Labor Market Results

Provide the information for creating and updating professional profiles.

Provide the Information for creating and updating curriculum design for training courses.

Provide the Information for updating teachers

Provide the Information for planning the provision of vocational training courses.

Provide the Information for planning the appropriate technology infrastructure to vocational training courses.

Technology Foresight

Characterization of Specific Emergent Technologies

Technologies that are in the final stage of development or that have recently been introduced in the internal or external market.

Technologies that have a low degree of diffusion (acquisition and use), although they are known by the market.

Product technologies, processes and support systems developed for use in a specific technological segment.

They must be technically viable technologies to be introduced in the domestic market in the next 5 and 10 years.

The development of knowledge in the scientific fields of long application and generic technologies should not be considered.

Technology Foresight

Questionnaire - general question

What will be the diffusion rates (purchase and use) of the technology .....?

For a better reflection on the technology diffusion, it is possible to break down the main question (general) into other simpler ones. This breaking down may help the experts in the process of foresight the diffusion likelihood of the technologies.

Are the entrepreneurs in the sector conservative in the technological change process?

Does the country's National Innovation System allow a good technology transfer process?

Does the sector have a large number of Small and medium-sized enterprises (SMEs)?

Does the country have financing systems for the purchase of new technologies? Do the entrepreneurs of the sector know them?

Does the sector have skilled workers for the use of Specific Emerging Technologies?

Are the suppliers of the specific Emerging Technologies located in the country?

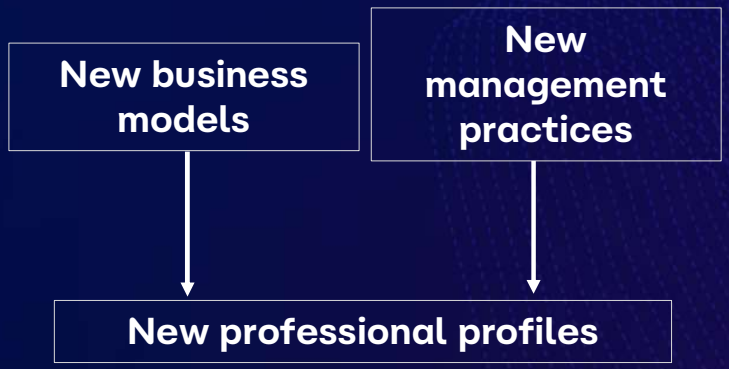
Technological Diffusion – Elements of analysis

Attribute	Characteristics/definition
Relative Advantage	It is the way the new technology is perceived in relation to the old technology. This attribute can be measured in terms of economic profitability, social prestige, low initial cost, etc.
Compatibility	It is the way the new technology is perceived as consistent with the existing values, past experiences and the needs for potential clients.
Complexity	It is the degree of difficulty of understanding and utility perceived by a potential user. In theory, the easier it is to understand and implement innovation, the faster it will be disseminated.
The proof capacity	It refers to the possibility of a potential user to experiment the innovation before buying it.
Possibility of observation	It refers to the possibility to observe and measure results obtained by the innovation before buying it.

Technological Diffusion – Elements of analysis

Attribute	Characteristic/definition
Impact on social relations	It refers to possible effect of break of the social environment by the innovation.
Reversibility	It refers to the possibility of replacing the new technology.
Time required	It refers to the time spent to adopt the new technology.
Modification power	It refers to the possibility of the new technology being changed or recreated.

Organizational Foresight



Business models in the value formation chain

Marketing strategies

Production strategies

Tools for the decision-making process

Human resources and talent management

Preparation and unfolding of goals

Performance measurement and indicators

Practices for the Sustainability of companies

Practices for the development and implementation of innovations

Organizational Foresight - Questionnaire

Organizational Trends - Sector.....				
Organizational Factor	**What is the percentage of companies comprising the value chain of the sector, which will use the following organizational factors?**	**temporal horizon**	**temporal horizon**	**temporal horizon**
Strategies for positioning on the market:	Leadership by costs			
	Leadership by differentiation			
	Market niches (costs or differentiation)			
	Others (specification)			

Occupational Impact Analysis

Matrix of Occupational Impacts

Technological and Organizational trends		Matrix of Occupational Impacts					
		Occupation 1		Occupation 2		Occupation 3	
		Low impact	High impact	Low impact	High impact	Low impact	High impact
1							
2							
3							
4							
5							

Changes in Occupational Profiles - Definitions

Activities

Activities are actions carried by a professional who practices or exercises his or her occupation, degree, service or craft.

Knowledge

Indicates the knowledge required by the occupation to work with Specific Emerging Technologies and adapt to organizational changes.

Skills

"It is the proficiency developed through training (practice) or experience.“

Capacity

The concept of capacity is related to the characteristics of people, that is, their behavior when acting or reacting to a product, organization, person, event or situation. The capacity is not always modified over time. "It's the quality of being able to do something."

How to apply the Model?

Expert Panel

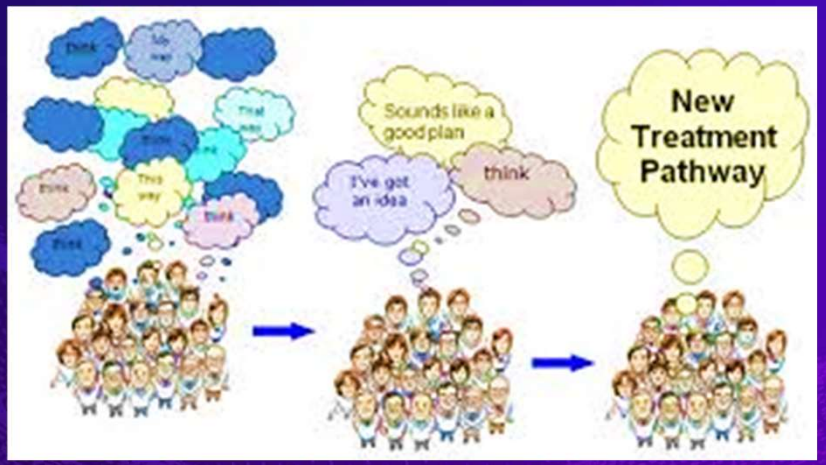
Expert panels are implemented through structured meetings that seek interaction among experts in order to reach a certain degree of consensus.

They are structured upon the application of **pre-designed questionnaires or questions** and the establishment of specific work rules.

They are an interesting way to get the **opinions** of the experts and are being increasingly used in foresighting at the **national level**.

Expert panels must research and study **specific subjects** and submit their conclusions and recommendations.

They must have the same integrity and behaviour of other scientific studies and **must attempt to reach a consensus, but without eliminating all disagreements**.



Expert panel – Experts' profile

They must be recognized for their extensive knowledge on the sector or segment studied.

They must have knowledge about the technological state of the sector or segment, as well as technologies, which have the potential of diffusion in the Brazilian market.

They must have knowledge about the organizational structure of the sector or segment as well as with the main organizational trends of the productive chain within Brazil.

They must have ***research and analysis*** skills.

They must have some of the following capacities: ***being proactive, able to work and discuss in teams, and having flexibility of thought to accept opposing views.***

Model Transfer of countries

INA - Costa Rica

INSAFORP - El Salvador

INTECAP – Guatemala

INFOP – Honduras

INADEH – Panama

INFOTEP – Dominican Republic

MTEySS – Argentina

INFOCAL – Bolivia

SENCE e Ministry of Labor – Chile

SENA – Colombia

SECAP – Ecuador

SINAFOCAL - Paraguay

SENATI – Peru

INEFOP e MTSS – Uruguay

TVET – Barbados

HEART/NSTA – Jamaica

NTA - Trinidad and Tobago

TVET Council - Saint Vincent and the Grenadines

TVET Council - Barbados

Recent International Projects

Application of for the Labor Market the tourism sector in Cape Verde

Training Course for 11 Institutions in Latin America in alliance with Cinterfor/ILO.

Future demands for green jobs in the Latin American region, in partnership with Cinterfor/ILO, involving the following countries: Dominican Republic, Chile and Uruguay.

International Recognition

ILO

World Bank

The Model is recognized by the ILO and the World Bank as the most appropriate prospective method for identifying future demands for professional education in emerging countries

Thanks!

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