Innovation management — Tools and methods for strategic intelligence management

ISO 56006

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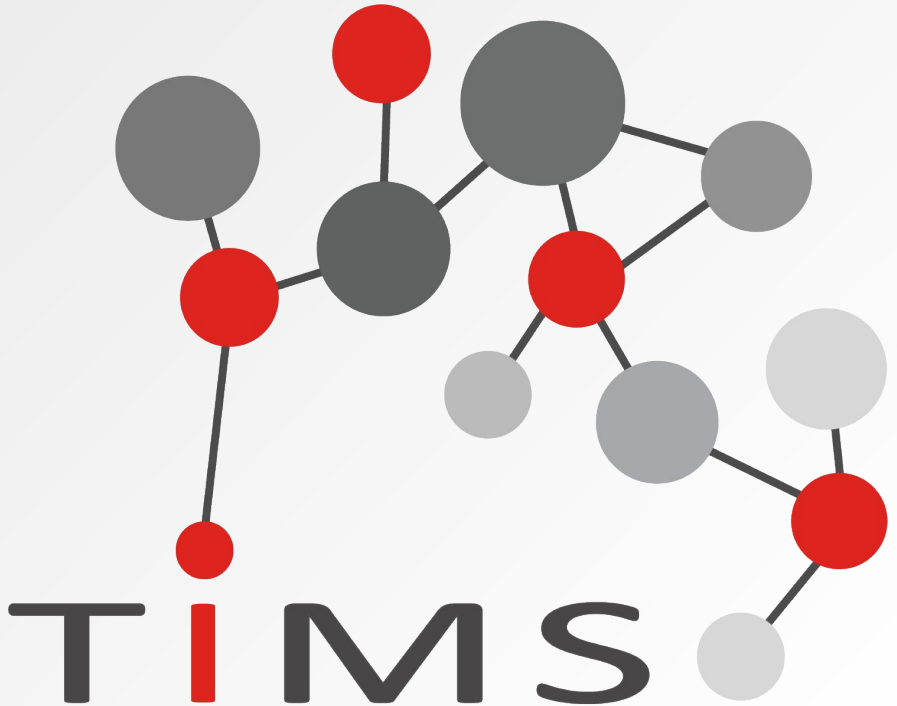

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Program of full ISO 56006 2-days Training

1ST Day	The Standards of ISO
	Terms and Definitions
	Introduction of ISO 56006
2nd Day	Introduction of strategic intelligence
	Strategic intelligence cycle
	Case Study
	Example

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DISCUSSION

Strategic intelligence cycle

⇒ How can implement the strategic intelligence with the method of this cycle?

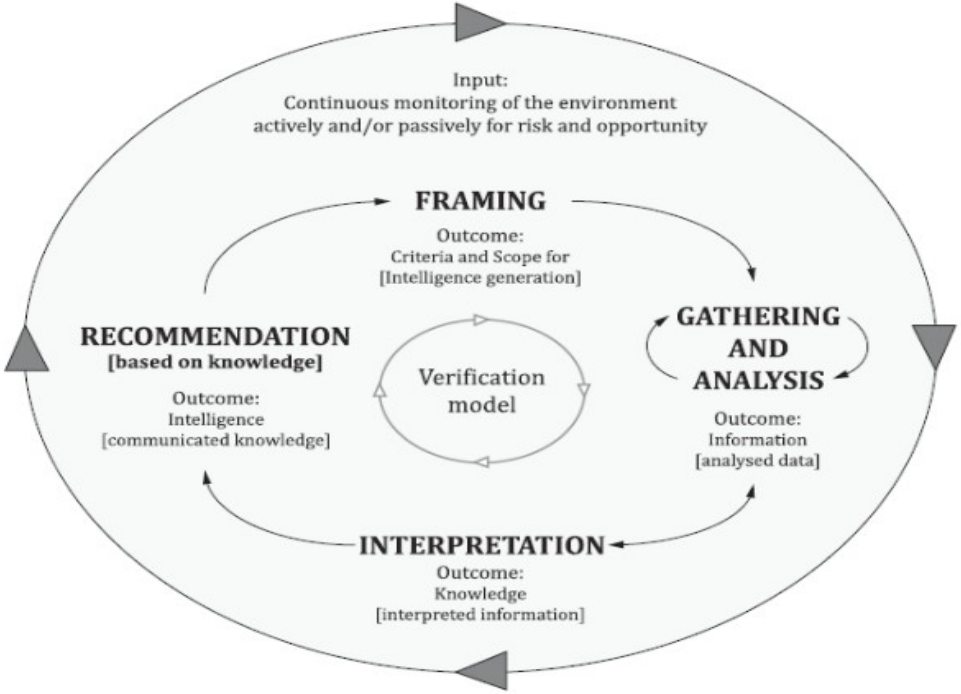

Figure 1 — Strategic intelligence cycle

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Strategic intelligence cycle

Operational planning and control

The strategic intelligence needs of an organization regarding innovation **depend on** the identification of the relevant data, information and knowledge in the context of the organization (e.g. market, competitors, technical, stakeholders).

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Strategic intelligence cycle

The **strategic intelligence team** should **consider the following external and internal aspects** as a minimum against dynamic and continually changing business environment :

- business areas of the identified innovation projects, activities and initiatives;
- relevant interested parties, e.g. competitors, investors, partners, academia and research infrastructures and ecosystems;
- market trends including unstated customer needs and expectations;
- technology trends;
- standards, industry codes and best practices;
- legal and regulatory relevant frameworks and trends;
- intellectual property and intellectual property rights;
- aspects related to environmental, social and economic sustainability.

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Strategic intelligence cycle

Verification is performed in order to reduce uncertainty, minimize risks and avoid incurring unnecessary costs. Verification is applied to outcomes at each step throughout the strategic intelligence cycle, evaluating them against a set of requirements.

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Strategic intelligence cycle

The first step is… **Framing**

DISCUSSION

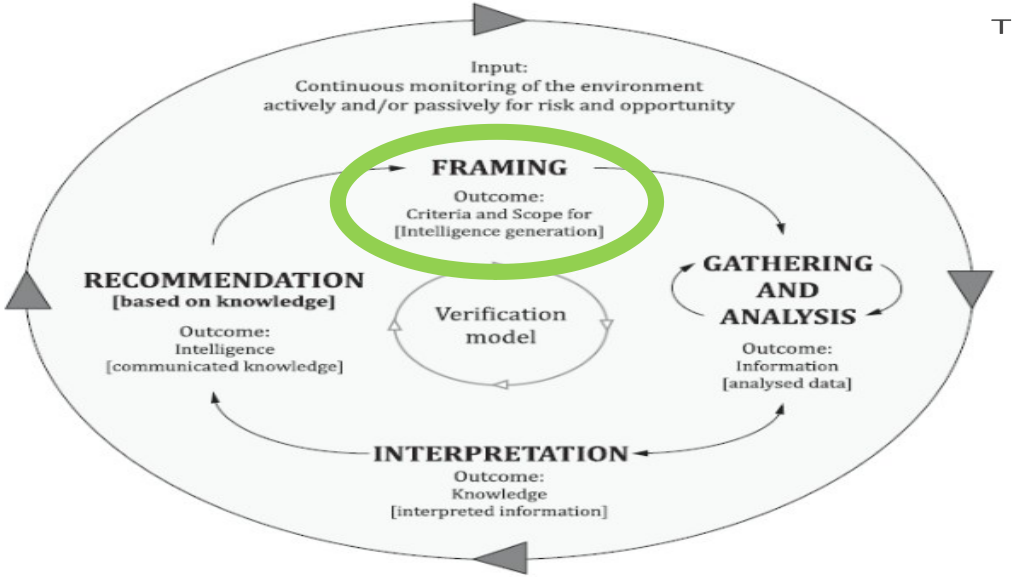

Figure 1 — Strategic intelligence cycle

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Strategic intelligence cycle

The **framing step aims to define the external and internal issues relevant to the scope of the strategic intelligence**.

It **ensures alignment** with the organization's mission, vision strategy, policy and objectives regarding innovation **to define the boundaries for**

- data gathering and analysis,
- information interpretation and knowledge communication and
- formulation of related recommendations to top management.

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Strategic intelligence cycle

Framing is the initial problem statement step in which the definition of the intelligence scope takes place.

e.g. Understanding

- the global development status of a certain technology,
- the regional dynamics of a certain market,
- the position of a certain player in a certain sector of a certain geographic area.

During this phase, the following take place

- The identification of the types and sources of data
- the definition of the analytical tools to be utilised

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Strategic intelligence cycle

The second step is…

Gathering and Analysis

DISCUSSION

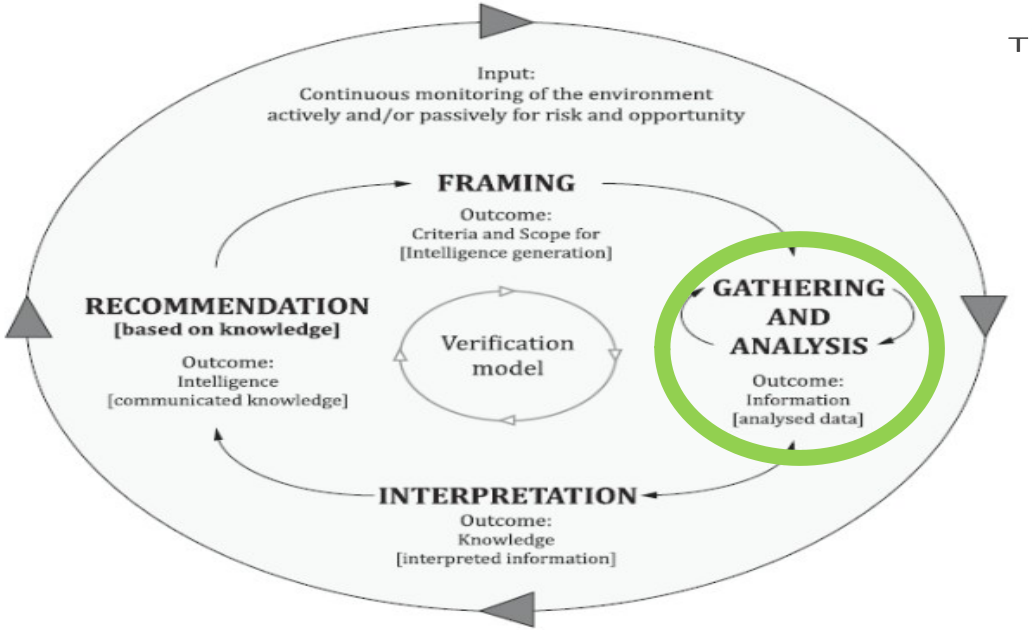

Figure 1 — Strategic intelligence cycle

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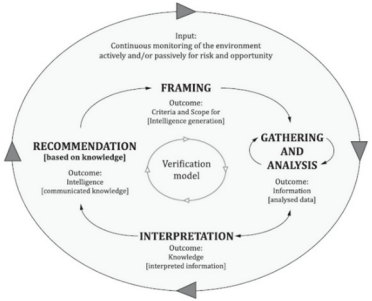
Strategic intelligence cycle



Data gathering and analysis

Gathering and analysis step can be divided in two processes:

- data gathering and verification;
- data analysis to extract information.

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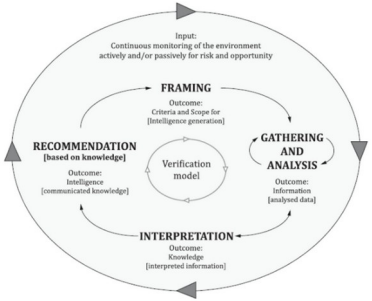
Strategic intelligence cycle



Data gathering and verification

This is the process of

- finding and mining data and information,
- checking and maintaining quality and integrity and
- identifying patterns ready for interpretation.

The aim is the generation of a verified set of data and information, ready for analysis.

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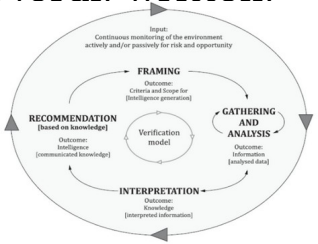
Strategic intelligence cycle

Outcome of data gathering — Data and information (analysed data)

Sources of data, information and resources should be identified based on the criteria of quality, objectivity, reliability, and classification, e.g.:

- classified information, which has a quantified level of sensitivity according to a scale pre-established by the organization;
- inside information that concerns a company or market, with a high potential value but which is not publicly available or yet unknown to the public;
- sensitive information, of which the disclosure, loss or unavailability is likely to have negative consequences for the organization, regardless of the medium (oral. written. electronic);
- critical information, which is likely to alter an organization's strategy.



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Strategic intelligence cycle

Outcome of data gathering — Data and information (analysed data) (2)

This data and information may be obtained from:

a) internal sources, e.g.:

- the organization’s own document system and knowledge base, if available;
- people with knowledge or experience related to the organization's strategic intelligence needs and expectations;
- results of available forward-looking analyses, e.g. forecasting, foresight exercises, drafting of scenarios, road maps.

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Strategic intelligence cycle

Outcome of data gathering — Data and information (analysed data) (2)

b) external sources, e.g.:

- customers, suppliers, competitor activities;
- documentation sources that the organization can access: hard and/or electronic copies, e.g. magazines, catalogues;
- supports, e.g. databases, or information resources on the Internet, e.g. specialized portals, news, blogs and social networks. This includes technical documentation, e.g. regulations, specifications, databases of patents and others intellectual property rights, and standards;
- publicly available research papers or unpublished research;
- congresses, seminars, fairs or exhibitions;
- market analysis reports;
- surveys, interviews, focus groups;
- partnerships and networking.

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Strategic intelligence cycle

Outcome of data gathering — Data and information (analysed data) (2)

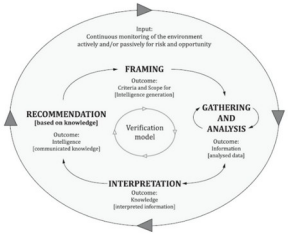
Data and information quality can be assessed by considering the following:

- reliability and accuracy,

  e.g. the origins of data and information and the credibility of sources;

- suitability and adequacy,

  e.g. identifying gaps in key information and implementing solutions that include, if needed, further information.



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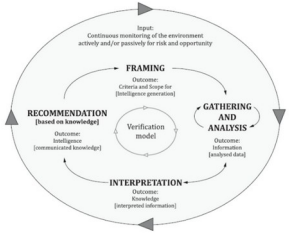
Strategic intelligence cycle

Outcome of data gathering — Data and information (analysed data) (2)

A table of functions / activities / information can be established to map data and information flows.

Data can be verified through test runs on data, e.g. data consistency, relevance and reliability, unused data, sensitivity analysis, outliers' identification and treatment.



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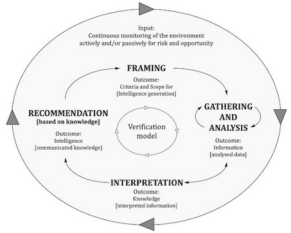
Strategic intelligence cycle

Data analysis to extract information

This is the process of application of analytical tools (determined during the framing) **yielding composite information** (e.g. correlations, trends, maps) **starting from homogeneous or heterogeneous datasets** (e.g. patents, papers, market data).

This stage **turns a set of strategic intelligence management data into information**,
e.g. composite data bearing non-trivial meaning.



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Strategic intelligence cycle

The organization should use different analysis techniques as appropriate, e.g. human-based, automated or a combination.

Some **common automated tools** that can deal with large amounts of data and information, structured or not, can be used to reveal patterns and trends, and/or to provide a visual representation, e.g.:

a) statistical tools or software;

b) data mining;

c) mapping and visualization tools;

d) classification;

e) taxonomy;

f) lexical or semantic analysis.

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TIMS

Strategic intelligence cycle

The organization should use different analysis techniques as appropriate, e.g. human-based, automated or a combination.

Some **common human-based tools** that can be used to analyse information include, e.g.:

- **SWOT** (with respect to strengths, weaknesses, opportunities and threats);
- **PESTEL** (with respect to political, economic, social, technological, environmental and legal factors);
- **Five Forces** (*) (with respect to competitive forces and actors, new entrants, competitors, customers, suppliers).

Information can be verified through sensitivity analysis using tools for data analytics.

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TIMS

Strategic intelligence cycle

The third step is… **Interpretation**

DISCUSSION

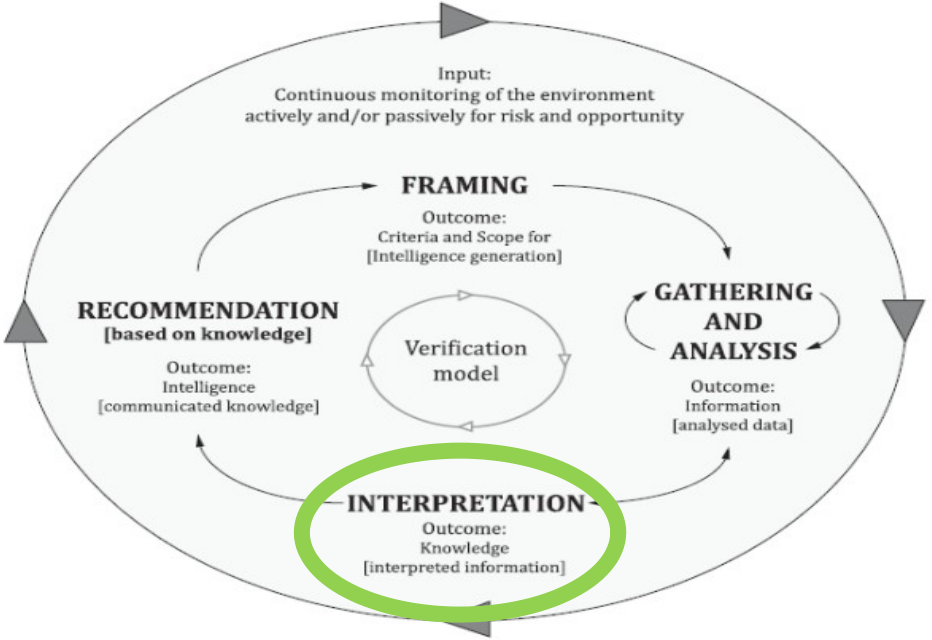

Figure 1 — Strategic intelligence cycle

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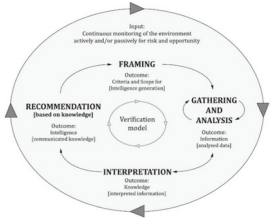
Strategic intelligence cycle

Interpretation

In this step **knowledge is generated by interpreting information** in accordance with the context of the organization. Information
generated under various contexts, i.e. market, government, social, may be brought in to know the "how and why behind changes".

Outcome of interpretation — Knowledge (interpreted information)

The outcome is the actual knowledge valuable for the strategic decision maker, i.e. information that is useful to make a
strategic decision. Examples can include: mapping of competitors' activities and highlight of weak signals; identification of priorities
for technical development and roadmap towards implementation.



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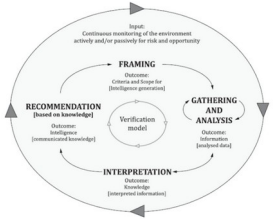
Strategic intelligence cycle

Interpretation

Feedback and iterations between interpretation and data gathering / analysis can happen depending on the specific case, e.g. to add or modify a dataset, apply different analytics tools, and to avoid any possible misinterpretation.



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Strategic intelligence cycle

And the last step is... **Recommendation**

DISCUSSION

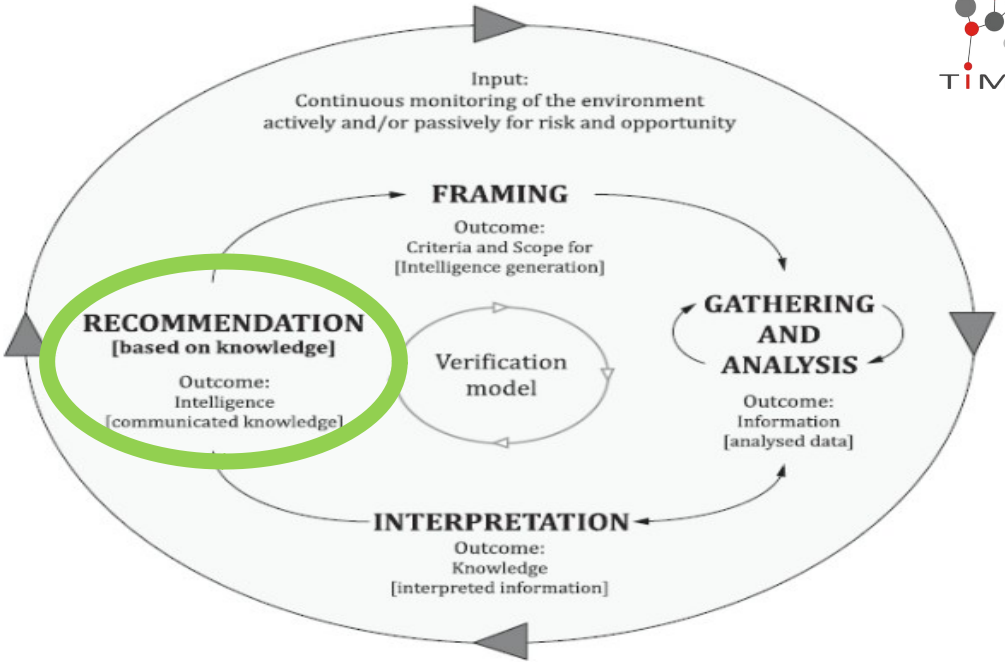

Figure 1 — Strategic intelligence cycle

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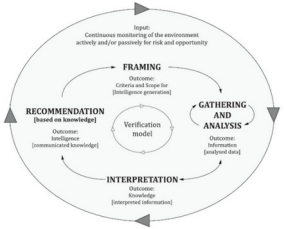
Strategic intelligence cycle

Recommendation

In this **final step, we communicate intelligence to top management with recommendations relevant to the scope of strategic intelligence application, to support and inform decision-making.**

Outcome of recommendation — Intelligence (communicated knowledge)

Communication tools are used to transfer intelligence to the management functions responsible for strategic decision-making, e.g. top management, senior managers, general managers, heads of strategy...



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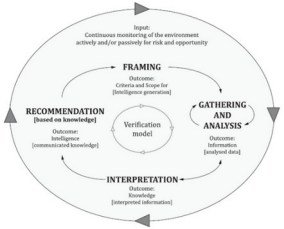
Strategic intelligence cycle

Recommendation

Some examples can be:

- **prospective planning**: proposals for actions to changes, (or expectations of) changes in the analysed environment;
- **making improvements**: proposals for actions needed to address limitations, inefficiencies or to minimize weaknesses identified;
- **pursuing opportunities**: proposals for actions to exploit identified opportunities;
- **risk reduction**: proposals for actions to reduce identified risks;
- **evaluation** of the technology and / or market options;
- **collaboration, identification of potential partners and related partnering options**;
- **innovation**: proposals for new ideas and / or research, development activities



Intelligence can be verified through usability, timeliness, and clarity che

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DISCUSSION

Strategic intelligence cycle

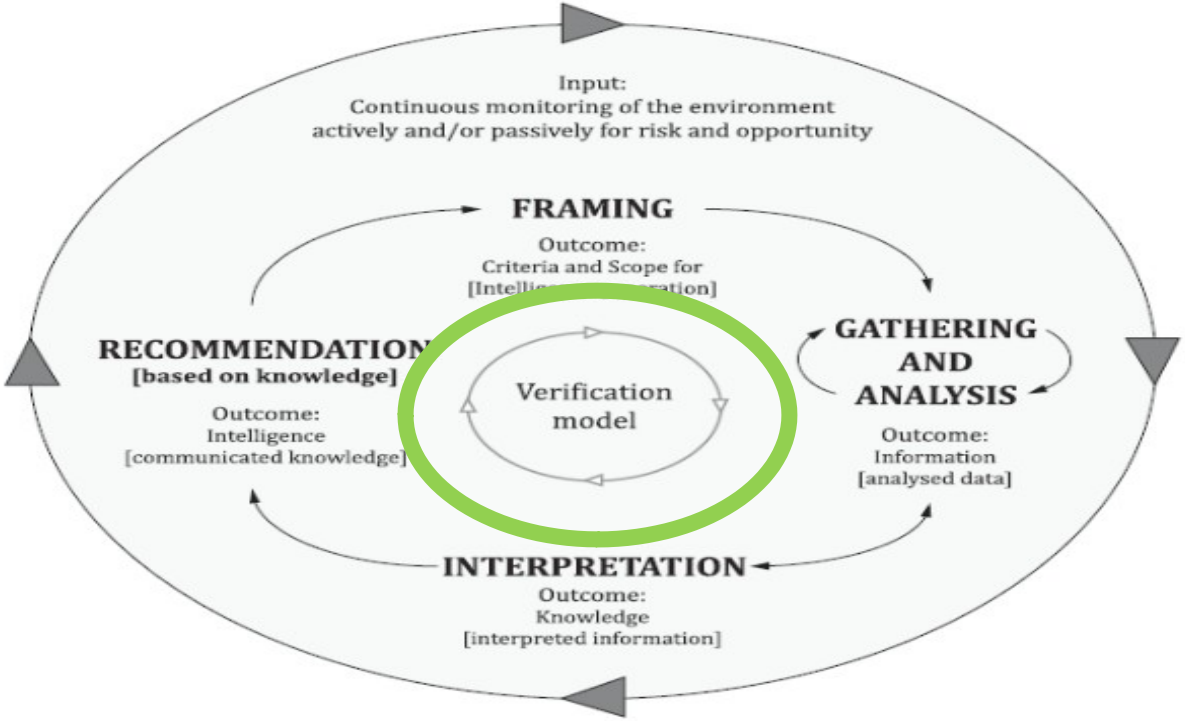

Figure 1 — Strategic intelligence cycle

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Strategic intelligence cycle

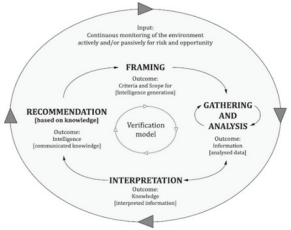
Strategic intelligence validation

Leadership should recognise that **intelligence is an explorative and judgement-based activity** and has inherent uncertainty.

Invariably, it has some **human bias** coming from the **personal experience of the individual involved** in the activity.

In spite of verifications at each step, there may still be a need to validate the recommendations.

Validation should be carried out by means of an independent review.



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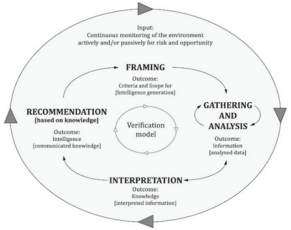
Strategic intelligence cycle

Strategic intelligence validation

Validation can require additional data and information, or a subset of data that was initially gathered but kept aside just for use at this stage.

The strategic intelligence team can define one or more models that can be used for strategic intelligence validation, e.g. data integrity check, review of sources of information.

Recommendations made to leadership can bring up new questions and trigger validation or the need for confirmation of some of them.



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References

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References

1. *ISO 56006:2021 Innovation management — Tools and methods for strategic intelligence management — Guidance*

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