

**BUSINESS PLAN
ISO/TC 39
MACHINE TOOLS**

1 INTRODUCTION.

1.1 ISO technical committees and business planning.

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritise among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development. Your role in the implementation of the Business Planning concept will contribute significantly to the overall effectiveness of international standardization.

We express our sincere appreciation and thanks for your time in reviewing this Business Plan.

1.2 International standardization and the role of ISO.

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: [ISO](#) (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of [IEC](#) (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of [ITU](#) (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 130 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the [International Standard](#).

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its [Technical Committees](#) are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the Industry Technical Agreement (ITA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the ITA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2 BUSINESS ENVIRONMENT OF THE ISO/TC.

2.1 Description of the Business Environment.

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

ISO/TC 39 deals with metal cutting machine tools, like turning machines, milling machines, machining centres and grinding machines, with metal forming machine tools like presses, with electro-discharge machines (EDM), with wood-working machine tools and with key elements of machine tools like ball screws or modular units.

General aspects of the machine tool business:

- The machine tool business is in a global market since many years.
- Machine tools are produced in a large number of states, developed and emerging states.
- Machine tools are used practically all over the globe.
- Machine tools realise the productivity of a company, a region or a state, as they provide key technology for production lines as well as small batch production.
- Machine tools furthermore realise scientific experiments from biology to space research, as they produce the hardware needed for the experiments.
- Machine tools define working environment and work content for a large number of employees.

Changes in the machine tool business:

- The machine tool business is always on the move, for improved accuracy, for higher productivity, for larger reliability, for better safety and for less environmental impact.
- The machine tool business is heavily affected by the up and downs of the economy, which are quite immense.
- The users of machine tools have an increased demand for periodic checking their machine tools, for quality assurance or preventive maintenance.
- Machine tools are having more functionality, some machine tools are multi-tasking machines, i.e. are for example combining turning and grinding on the same machine. This makes the machine tools more and more complex.

2.2 Quantitative Indicators of the Business Environment.

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

For 2013 the machine tool production is estimated at 69 billion US\$, machine tools for 32 billion US\$ were produced in Asia, for 30 billion US\$ in Europe, for 6 billion US\$ in North America, for 1 billion US\$ in South America.

The consumption of machine tools was for 23 billion US\$ in Asia, for 18 billion US\$ in Europe, for 9 billion US\$ in North America and for 4 billion US\$ in South America (all data from the 2014 survey).

As advances in machine tools cause gains in productivity, reduced inventory needs, prices, quality and energy efficiency the influence of machine tools to the overall economy is multiplied. An AMT (American Machine Tool Builders Association) report from 2000 claims a benefit factor of roughly 40 between machine tool consumption and benefit for the (US) economy.

3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC.

Respond to changes:

- ISO/TC 39 responded to the demand of machine tool users and manufacturers for fast and comprehensive checks by introducing new standards like the diagonal displacement test, contouring tests and R-tests for 5-axis machine tools.
- The demand for higher accuracy led to the development of new standards of machine tool testing, like ISO 230-7, axis of rotation, ISO 230-8, machine tool vibration, ISO 230-10, measuring performance of machine tools and the revision of the basic series ISO 230, test code for machine tools.
- New test equipment is introduced in the basic standards and in the machine specific standards via frequent revisions.
- The change from milling and boring machines to machining centres led to the standards series ISO 10791, test conditions for machining centres.
- The change from turning machines to NC turning centres led to the development of the standards series ISO 13041, test conditions for NC turning machines and turning centres.
- ISO/TC 39 responded to the increased importance of safety issues, as documented in the standards of CEN/TC 143, the European standards committee on safety of machine tools, by establishing a new subcommittee (SC 10) related to safety of machine tools for metal-cutting and metal-forming machines and revising the safety standards under the Vienna Agreement under ISO lead. The same approach was adopted for safety issues related to woodworking machine tools developing in subcommittee SC 4 safety standards as already done by CEN/TC 142.
- The demand for stating measurement uncertainties with any measurement led to the development of a technical report and to changes in the basis series ISO 230, test code for machine tools.

Cost savings:

- ISO/TC 39 defines test methods for metal cutting machine tools (more than 70 documents), for wood working machine tools (more than 30 documents) and presses (5 documents). These standards are used by machine tool manufacturers to define specifications, by users to order machine tools and by both parties to proof conformance with specification by acceptance tests according to ISO.
- ISO/TC 39 defines dimensions of modular units of machine tools (20 documents) and of components like ball screws, spindles and chucks (more than 20 documents), which allow to manufacture and order components according to well accepted standards. This reduces the costs for these components.
- Several national member bodies either use the ISO standards directly as national standard, or translate the ISO standards and use those as national standards. Without this ISO work (more than 160 documents) all the documents had to be produced in single companies of manufacturers and users, needing a large amount of time and money and resulting in different definitions, which would cause misunderstanding and confusion.
- Several national member bodies have stopped issuing special national standards for machine tools, but input new projects directly at the ISO level.

Technical barriers of trade:

- The standards of ISO/TC 39 efficiently have removed technical barriers of trade.

Safety issues:

- Safety issues are addressed in the sub-committee on noise, ISO/TC 39/SC 6, which produced 2 standards.
- Safety standards for metal-cutting and metal-forming machine tools are addressed in ISO/TC 39/SC 10, safety of machine tools, which already published safety standards.
- Safety standards for woodworking machine tools are addressed in ISO/TC 39/SC 4, woodworking machine tools.

Harmonisation of national and regional standards:

- If national or regional standards exist, ISO/TC 39 always tries that the ISO standard is the harmonised version of national standards. This applies to standards for acceptance tests as well as for safety standards.

4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC.

ISO/TC 39 has 21 participating members and 23 observing members.

Developing countries and countries with economies in transition are hardly presented in ISO/TC 39, because most of these countries do not have a significant machine tool business. The same is true for the countries from Africa.

Countries that are in the machine tool business are well presented both manufacturers and users. The 13 countries with the largest machine tool export in 2013 are presented in the TC.

ISO/TC 39 has a very active liaison with

- CECIMO, the European machine tool manufacturers association
- CIRP, the International Institution for Production Engineering Research

ISO/TC 39/SC 4, woodworking machines, has an active liaison with EUMABOIS, the European Federation of Woodworking Machinery Manufacturers.

5 OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT.

5.1 Defined objectives of the ISO/TC.

ISO/TC 39 provides the machine tool industry, both manufacturers and users, with up-to-date standards

- for testing machine tools,
- for dimensions of components,
- for safety of machine tools and for noise measurements,
- for definitions.

The existing standards are frequently revised in order to address changes in machine tools, methods and equipment.

New areas, which are requested by industry, are covered in the work programme:

- machine tool safety for metal cutting and woodworking machine tools,
- numerical compensation of machine tools,
- determination of measuring performance of machine tools,
- evaluation of spindle vibration,
- environmental issues for machine tools.

5.2 Identified strategies to achieve the ISO/TC's defined objectives.

Revisions and new standards developments in general are carried out by working groups or project teams. In almost all cases the results are agreed on by all members of the working group or the project team. Therefore the stages to CD/DIS/FDIS do not result in principal comments, but just in comments to improve the document.

Most new work item proposals are accompanied with worked out documents, which would fit the requirements for a CD, sometimes even for a DIS.

Deliverables are not only standards, but also technical reports, where applicable.

For the safety of machine tools ISO/TC 39/SC 10, safety for metal-cutting and metal-forming machine tools, and ISO/TC 39/SC 4, woodworking machine tools, work in close cooperation with CEN/TC 143, respectively with CEN/TC 142.

The structure of the TC is defined by the technical content: separate subcommittees deal with metal cutting machine tools, wood working machines, noise, spindles and chucks, safety. Within the subcommittees and the TC working groups or project teams deal with technical subtopics. This allows an effective allocation of experts to the work of their expertise and interest.

6 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME.

The liaison with CIRP, the International Academy for Production Engineering, which includes practically all university professors in the field of production engineering, has been intensified, in order to have a closer connection to the research and teaching community.

7 STRUCTURE, SCOPES AND WORK PROGRAMME OF THE ISO/TC.

This section gives an overview of the ISO/TC's structure, scope, projects and publications. All of this information is updated regularly and is available on ISO's website, ISO Online

The link below is to the TC's page on ISO's website:

[http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=48354;](http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=48354)

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Secretary, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

Reference information

[*Glossary of terms and abbreviations used in ISO/TC Business Plans*](#)

[*General information on the principles of ISO's technical work*](#)