BUSINESS PLAN

ISO/TC 29
Small tools

EXECUTIVE SUMMARY

From hand tools, like pliers and nippers, to tools used on machines, abrasives and tools for pressing and moulding, the market addressed by ISO/TC 29 is worldwide and various.
The total market size is estimated at 20 billion USD.

This market covers : equipment for presses, machine tools, hand held machines ; cutting tools in high speed teels and their attachments, grinding wheels and abrasives, tools for pressing and moulding, tools with cutting edges made of hard cutting materials, tools for wood processing, assembly tools for screws and nuts, pliers and nippers.

Due to its wide collection of standards, a lot of benefit as been realized through the use of TC 29 ISO standards in terms of tools interchangeability and production rationalization (reduction of references) mainly for machine tools, but also for hand tools.
A part of ISO/TC 29 mission is to maintain up to date this collection.

But due to constant technological progress, the other part of the work realised in ISO/TC 29 is the creation of standards that help nowdays way of producing and using tools for mecanical applications. This is done, for instance, by developping computer aided tool library standards.

In a sense, ISO/TC 29 standards can be seen as the cornerstone of productivity improvement. This objective comes with today's concerns : safety enhancement and environmental protection.

These are the priorities agreed and followed among the 18 P-members and the 28 O-members of ISO/TC 29.

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 prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

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 140 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 International Workshop Agreement (IWA) 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 IWA 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 and social 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:

The market covered by ISO/TC 29 is a very wide one: from hand tools to tools used on machining centres. Tools are the basis for the manufacturing of any kind of products and are used by any kind of industry. The range of products comprises highly sophisticated tools (high speed) down to "simple" ones (hand tools). That makes the market of ISO/TC 29 very broad.

The field of standardisation carried out is also very wide. Among the some 300 standards prepared by ISO/TC 29, the following types are required: terminology, dimensions, testing, technical specifications, …

The market of tools is global and world wide; consequently standardisation work is done primarily at the ISO level.

Major product categories falling in the field of ISO/TC 29 are: drills, reamers, milling cutters, milling machine accessories, screwing taps and dies, grinding wheels and abrasives, tools for pressing and moulding, tools with cutting edges made of hard cutting materials, assembly tools for screws and nuts, pliers and nippers.

Tool manufacturers range from worldwide companies, e.g carbide tool manufacturers, to small and medium size companies for some specific tools.
As mentioned previously, small tools can be used from “Do It Yourself” (hammers, drills,…) to big industry: automotive, aerospace industries and mechanical engineering, etc.

The following list indicates some aspects which may have an influence on the development of the market :

<u>Factors related to suppliers</u>

- development of new technologies (e.g high speed)
- new geometry, dimensions and material for designing tools
- development of new materials to be machined
- development of e-business

<u>Factors related to customers</u>

- management of a large diversity of tools
- data exchange between computer aided systems for manufacturing
- interchangeability of tools
- optimisation of productivity

<u>Factors related to regulatory and legal measures :</u>

- tools used on machines that have to comply with local governmental regulations for health and safety (e.g high speed tools)
- safety aspects for the tools themselves (e.g for some hand tools : hammers)
- patents
- open market : necessity to suppress barrier to trade.

2.2 Quantitative Indicators of the Business Environment

Business in small tools encompasses various sectors with a range of greatly differing product groups.

Moreover, the products covered by the ISO/TC 29 are not in a single class or subgroup in both the International Standard Industrial Classification (ISIC) and the Standard International Trade Classification (SITC) of the United Nations Statistics Division - Classifications Registry.
If one take the ISIC, it has to go into the 2699 (for abrasives), 2893 and 2922 classes, but some products in those classes are not in the scope of TC 29 (e.g. articles of cutery in class).
If one take the SITC, it has to go into the subgroups 663.1 and 2 (for abrasives), 695.2 to 695.7 and group 735, but again some products in those groups are not in the TC 29 scope (e.g. anvils).

Therefore, it is almost impossible to have accurate quantitative indicators for the whole ISO/TC 29 business environment. It is estimated that its worldwide total market size is approximately 20 billions US $.

In order to better show the magnitude of the market covered and also the standardisation needs, a matrix has been elaborated where :

- in the columns, standards are grouped in the following main types: Terminology, representation of tool data, dimensional specifications, technical specifications, test methods and safety aspects.

- the rows of the matrix cover broad categories of tools including those tools not yet dealt with by ISO/TC 29 but being potentially within its scope:

Interfaces tool/machine
- **Equipments of machine tools**
- **Equipments of hand held machine**
- **Equipment of presses**

Tools for processing metal, plastics and similar
- **Machine tools**
  - *drills*
  - *reamers*
  - *milling cutters*
  - *screwing taps*
  - *screwing dies*
  - *turning tools*
  - *saw blades*
  - *grinding wheels*
  - *coated abrasives*
  - *press tools*
  - *moulding tools*
  - *forming tools*
- **Hand tools**
  - *reamers*
  - *screwing taps*
  - *screwing dies*
  - *saw blades*
  - *abrasives*
  - *files*

Tools for wood processing
- **Machine tools**
  - *milling tools and cylindrical tools*
  - *saw blades*
- **Hand tools**
  - *bits*
  - *saw blades*
  - *planes*
  - *chisels and gouges*
  - *files and rasps*

Tools for processing stone and building materials

Assembly tools for screws and nuts
- **Machine tools**
  - *screwdriver bits*
  - *sockets*
- **Hand tools**
  - *screwdrivers*
  - *wrenches*
  - *socket wrenches*
  - *torque tools*

Other hand tools
- **Pliers and nippers**
- **Tools for hammering**

This matrix is given as an annex of this business plan.
This representation should also enable a better understanding of the activity of the TC and interrelation of items.

3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC

International standards serve as the preferred basis of agreements and contracts in bi- or multi-lateral business relationships throughout the world and are therefore of particular importance for an expanding global market. For small and medium enterprises, it is important that reliable standards are available. Clear characterisation of products facilitates the negotiations with the customers and avoid arguments.

Small, medium and world wide enterprises (manufacturers and users) also need clear and uniform terminology, dimensions and test methods for **interchangeability** of products between workshops and improvement of **productivity**. Interchangeability is fundamental for small tools and all the main sectors of the TC have this need as a priority.

Manufacturers and users of small tools need also standardized dimensions to manage a **smaller number of references**.

4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC

4.1 Countries/ISO members bodies that are P and O members of the ISO committee

4.2 Analysis of the participation

All major manufacturers, suppliers, end users and test laboratories are represented in ISO/TC 29. The main importing and exporting regions containing the major market forces are Europe (Western and Eastern), North America, Asia and Middle East. Therefore they are all "P" or "O" members of the TC and/or SCs.

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

5.1 Defined objectives of the ISO/TC

We can dissociate the objectives into two main aspects: the improvement/development of existing standards and the emerging needs.

Concerning the first aspect, the work programme should follow two main paths :
- permanent updating of the body of standards so that they reflect current economic and industrial life, in order to have standards which always include up to date reference data facilitating trade between manufacturers and users;
- enrichment of the body of standards in order to take into account products not yet dealt with and new products appearing on the market or to supplement existing standards with additional specifications.

Concerning the second item, emerging needs are today the following:

- elaboration of standards in order to ensure a better safety

- elaboration of standards in order to obtain a better productivity

- elaboration of standards in order to ensure computer communication capabilities.

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

As the market for small tools is very wide and divided into different sectors, the technical committee is structured in six sub-committees, covering these sectors :

SC 2 cutting tools in high speed steels and their attachments
SC 5 grinding wheels and abrasives
SC 8 tools for pressing and moulding
SC 9 tools with cutting edges made of hard cutting materials
SC 10 assembly tools for screws and nuts, pliers and nippers

The TC itself shall ensure the coordination between all these areas. Therefore all transverse items (concerning several subcommittees) are dealt with directly by the TC.
The creation of Working Groups is a dynamic process. Indeed, when no work but maintenance of published standards is under way, this is directly done under the SC responsability. On the other hand, some of the SCs have created working groups with technical experts to deal with special subjects.
Some Working Groups are also directly under the responsability of the TC. One of them, the WG34, is dealing with the task to draft standards that will ensure computer communication capabilities for cutting tool data.

In order to minimise travel costs, clusters of meetings are organised. The frequency for TC plenary meetings is planned to be every two years, for SC plenary meetings every year, and for working groups twice a year for those with a high activity. When they have common experts, some working groups meet jointly. TC 29 also uses the ISO web site (Livelink) in order to ease the availability of all the documents. This system has been expanded for the WG 35 and 36, and using the DIN LiveLink for the SC5, SC9 and SC10.

The TC itself as well as its subcommittees needs cooperation and internal and external liaisons with other ISO committees as well as international organisations (e.g CIRP " International Institution for Production Engineering Research"). As tools may be used on various machines for different industries, several liaisons are necessary with other committees :

- those involved in standardisation of machines on which tools are mounted (ISO/TC 39 "Machine tools"),
- those responsible for integration of the multiple technologies for discrete part manufacturing (ISO/TC 184 "Industrial automation systems and integration").

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

If the technical committee is not able to answer rapidly to the increasing need of tool data exchange, the risk is that some answers may be given by experts in data modelling instead of experts in cutting tools. Therefore because of a lack of knowledge, tools may be described in a way that is not totally satisfying.

Technologies evolve rapidly in this area. Therefore ISO/TC 29 needs expertise to be able to develop standards including these new technologies and to avoid de facto standards.

Sometimes it is difficult to find the five actively participating members which are stipulated by the ISO Directives for acceptance of new work. Especially for ISO/TC 29/SC 8 " *Tools for pressing and moulding* ", even if the market is world wide and if ISO standards are necessary, the number of participating countries is not suffisant and some important standards can not be developed.

7 STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC

This section gives an overview of the ISO/TC's structure, scopes of the ISO/TCs and any existing subcommittees and information on existing and planned standardization projects, publication of the ISO/TC and its subcommittees.

7.1 Structure of the ISO committee

7.2 Current projects of the ISO technical committee and its subcommittees

7.3 Publications of the ISO technical committee and its subcommittees

Reference information

Glossary of terms and abbreviations used in ISO/TC Business Plans

General information on the principles of ISO's technical work

Annex to ISO/TC 29 business plan

Scope of ISO/TC 29 "Small tools"

Note : The figures shown in the table are the references of ISO standards

Type of standards / Type of tools			Terminology Vocabulary	Representation of tool data	Dimensional specifications	Technical specifications	Test methods	Safety aspects
Interfaces tool/ machine	Equipement of machine-tools		4248		238 240 839-1 and 2 2402 2780 2940-1 3936 3937 4202 4203 4247 4248 5413 5414-1 and 2 5415 10889-1 to 8 10897 12164-1 and 2 12164-1 and 2 15488	10897 15488		
	Equipements of hand held machine				239 1180 10887 10888			
	Equipements of presses				10242-1 to 3	10242-1 to 3		
Tools for processing metal, plastics and similar	Machine tools	Drills	3002-1 to 4 5419		235 494 866 2306 2540 2541 3291 3292 3293 3294 3314 3438 3439 4203 4204 4205 4208 7079 9766 10898	10899		
		Reamers	3002-1 to 4 5420		236-2 237 521 522 2238 2250 2402 3466 3467 4203 4206 4207 4208			
		Milling cutters	3002-1 to 4 3855	7755-1 11529-1 and 2	240 1641-1 to 3 2296 2584 2585 2586 2587 2780 2940-1 and 2 3337 3338-1 to 3 3859 3860 3940 5413 6108 6262-1 and 2 6462 6986 11529-1 and 2 7755-2 to 12 10911 10145-1 and 2 12197		8688-1 and 2	15641
		Screwing taps	3002-1 to 4 5967		237 529 2283 2284 8051	2857 5969 8830		

Type of tools		Type of standards	Terminology Vocabulary	Representation of tool data	Dimensional specifications	Technical specifications	Test methods	Safety aspects
Tools for processing metal, plastics and similar	Machine tools	Screwing dies	3002-1 to 4 5968		2568 4230 4231			
		Turning tools	3002-1 to 4	504 513 1832 5608 6261 10910 11255	241 242 243 514 883 3286 3364 3365 5421 5609 5610 5611 6987 9361-1 and 2		3685	
		Saw blades	3002-1 to 4 4875-1		2336-2 2924 4875-2 and 3			
		Grinding wheels	3002-5 6104	525 6104	525 603-1 to 16 2421 3919 6106 8486-1 and 2 13942		9136 9136-2 9137 9138 9284 9285 9286	6103
		Coated abrasives			666 1929 2976 5429 6344-1 to 3 8366 15635 15637-1 and 2 16057 21948 21949 21950 21951	15637-1 and 2 16057 21948 21949 21950 21951	6344-1 to 3 15636 16057 21948 21949 21950 21951	
		Press tools	8695 9182-1 to 5 9448-1 to 11		6751 6752 6753-1 8020 8977 9181 9182-1 to 5 9183-1 and 2 9448-1 to 11 10069-1 and 2 10071-1 10243 11415 11900-1 and 2 11901-1 and 2 11903 16366 16367	6752 8020 8977 9181 9182-1 to 5 9448-1 to 11 10069-1 and 2 10071-1 10243 11415		10243
		Moulding tools	12165	12165	6753-2 8017 8018 8404 8405 8406 8693 8694 9449 10072 10073 10907-1 15600	8404 8406 15600		
		Forming tools	1684 5396	1684	1651 1684 2804 5407			
	Hand tools	Reamers	3002-1 to 4 5420		236-1 237 3465			
		Screwing taps	3002-1 to 4 5967		237 529			
		Screwing dies	3002-1 to 4 5968		2568 4230 4231 7226			

Type of tools		Type of standards	Terminology Vocabulary	Representation of tool data	Dimensional specifications	Technical specifications	Test methods	Safety aspects
		Saw blades	3002-1 to 4		2336-1			
		Abrasives			603-11, 12, 13, 14 and 16 3366 13942		9136 9136-2	
		Files	3002-1 to 4		234-1	234-2		
Tools for wood processing	Machine tools	Milling tools and cylindrical tools	3002-1 to 4					
		Saw blades	3002-1 to 4 7294		2935 3295			
	Hand tools	Bits	3002-1 to 4					
		Saw blades	3002-1 to 4 7294					
		Planes			2726 2730	2726 2730		
		Chisels and gouges			2729	2729	2729	
		Files and rasps			234-1	234-2		
Tools for processing stone and building materials			6104	6104	1180 6105 5468			
Assembly tools for screws and nuts	Machine tools	Screwdriver bits	1703		1173 2351-1 to 3 3109	1173		
		Sockets	1703		691 1174-1 and 2 2725-2 and 3 3109 3317 4228	3317		
	Hand tools	Screwdrivers	1703		1173 2352 2380-1 and 2 8764-1 and 2	1173 2380-1 and 2 8764-1 and 2	2380-1 8764-1	
		Wrenches	1703		691 1085 2236 2936 3318 4229 6787 6788 7738 10102 10103 10104 10914 11168	1711-1 2936 4229 6787 6788 10914 11168	2936 6787 6788 10914 11168	
		Socket wrenches	1703		691 1174-1 and 2 2725-1	1711-1 3315 3316		
		Torque tools	1703 6789		691	6789	6789	6789

Type of tools	Type of standards	Terminology Vocabulary	Representation of tool data	Dimensional specifications	Technical specifications	Test methods	Safety aspects
Other hand tools	Pliers and nippers	5742 8979		5745 5746 5747 5748 5749 8976 9242 9243 9343 9654 9655	5743 5745 5746 5747 5748 5749 8976 9242 9243 9343 9654 9655 9657	5744 9656	
	Tools for hammering				15601	15601	