



CELAN WP 2 – DELIVERABLE D2.1 ANNOTATED CATALOGUE OF BUSINESS-RELEVANT SERVICES, TOOLS, RESOURCES, POLICIES AND STRATEGIES AND THEIR CURRENT UPTAKE IN THE BUSINESS COMMUNITY

ANNEX 3 TYPOLOGY OF LANGUAGE INDUSTRY (LI) PRODUCTS AND SERVICES

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Abbreviations

AT authoring tools

CALL computer-assisted language learning

CAT computer-assisted translation CBT computer-based training

CD-ROM Compact Disc Read-Only Memory

CLIL content and language integrated learning

CMS content management systems

CT corpus technology
DTP desktop publishing

ICT information and communication technologies

LCR language and other content resources

L10N localization

LI language industry LS language services

LSP language service providers

LT language technology
LTT language technology tools
LT&T language teaching and training

MT machine translation

OPI over the phone interpreting

SDO standards developing organizations

ST speech technology STT speech technology tools TD technical documentation

TEL technology enhanced learning

TM translation Memory

TMS terminology management systems

PwD persons with disabilities

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Deliverable D2.1 ANNEX 3

CELAN Typology of Language Industry (LI) Products and Services

Background

This CELAN Typology was developed as a result of extensive consultations with LTT and LCR developers, LSP and researchers in academia. These consultations were carried out on the basis of the CELAN Language Industry Mind Map (see D2.1 Annex 3) conceived as a starting point of investigation for the deliverable D2.1 "Annotated catalogue of business-relevant services, tools, resources, policies and strategies and their current uptake in the business community". The Typology reflects the dynamic development in terms of diversification and is only indicative of the quantitative development as well as of the integration tendencies taking place on the market.

- 1) Major subdivision (highlighted yellow)
- 2) Second level sub-division (highlighted green)
- 3) Second level sub-division (highlighted blue)
- 4) Information on success practices: examples, links to portals etc.

1. Language technology (LT) & language technology tools (LTT)

- a. Translation technology
 - i. Machine translation (MT) systems
 - ii. Computer-assisted translation (CAT)
 - iii. Localization systems
 - iv. Translation/localization project/job management systems
- b. Text technologies
 - i. Authoring tools (AT)
 - ii. Technical documentation (TD) systems/tools
 - iii. Corpus technology (CT)
 - iv. Desktop publishing (DTP) systems
- c. Terminology management systems (TMS)
- d. Speech technology (ST)and speech technology tools (STT)
- e. Some kinds of content management systems (CMS)
- f. Language teaching/learning systems

2. Language and other content resources (LCR)

- a. Terminological data and similar
- b. Lexicographical data and similar
- c. Other kinds of structured content online
- d. Unstructured content

3. Language services (LS) & language service providers (LSP)

- a. Text creation, editing, re-purposing
- b. Translation services
- c. Interpreting services
- d. Localization (L10N) services
- e. Desktop publishing (DTP) services
- f. Language teaching and training services
- g. Language industry consultancy services
- h. Communication services for persons with disabilities (PwD)

4. Standardization, certification and language policy

- a. Standardization
- b. Certification
- c. Language policy

Top level 2 nd level		3 rd level	Information on success practices
Language technologies (LT) and lang LT provide software products – and to such as those related to: - Translation technologies - Text technologies - Terminology management systems - Speech technology (ST) and speech - Some kinds of content management - Language teaching / learning system	(TMS) technology tools (STT) systems (CMS)		(1) Most of the large international car makers and other highly globalized industry apply all categories of language technologies (LT) and language technology tools (LTT), use different content management systems (CMS – incl. their own content) and have in-house language service departments or outsource all language services or use a mix of own language experts with external LSP.
Translation of Translation to a text in a give similar text in technologies - Machine translation - Computer-a - Localization	chnologies schnologies have been developed in order to render ven language (source language) into a semantically in another language (target language). Translation mainly comprise: inslation (MT) systems ssisted translation (CAT) tools/systems (Icalization project/job management systems (or automatic translation systems) for fully interactive MT, shallow-transfer MT, for cont There are rule-based, statistical or, increas systems. The more the source language texts and the more text volumes are available, the b MT.	ent scanning etc. singly, hybrid MT are "standardized"	(1) A large LSP provider uses all kinds of translation technology in-house and in the relation with external collaborators with the assistance of tools to ensure that no data corruption occurs in conversion processes. (2) In order to save costs (in terms of labour and work organization) a company having large amounts of technical documentation of all sorts uses machine translation (MT) in combination with CMS for providing content and CMS for checking customer satisfaction in social media to produce/adapt technical documentation for a product on the one side and a project/job management system for managing all workflows in this connection; performance gain was 40% by simultaneously improved quality of the output in dozens of languages. (1) Many patent attorneys use machine translation of some kind or other (primarily for information gathering and analysis) either provided externally or by using highly developed computerassisted translation (CAT) systems. (2) A large manufacturer having a language policy also comprising the use of "controlled language" uses a machine translation system and trained post-editors for the revision process thus saving cost and improving quality.
	Computer-assisted translation (CAT) tools/sy cover a range from comparatively simple CA complex translation work-benches comprisi memory (TM), a terminology management symbol modules up to Translation/localization project systems.	T tools via highly ng a translation system and other	(1) A world-wide leader in high-voltage testing and measurement devices started professional localization assisted by a translation tools developer in 2006, localized into 17 languages in 2007, and into 22 languages in 2008. (Source: http://kilgray.com/files/case-studie/BAUR case study.pdf (2) A company having distributors in different countries and producing high-end consumer goods with many models and variations uses a CAT tools in order to check the consistency of the translations of product descriptions done by the distributors for their own home market. The CAT tool (incl. a translation memory module) adapted for this purpose shows all variations in the descriptions for all products used so far I all languages, which is also a support for future translations/localizations.

	Localization (L10N) systems here refer to the adaptation of a product or service to a communion of speakers with respect to cultural, linguistic, legal, political are technological aspects. L10N systems have emerged out multilingual technical documentation (TD) and translation service using a higher level of language technology tools from the outset	also time-to-market while at the same time improved the overall quality of the localization. (2) A woodworking machine manufacturer exporting into more
	Translation/localization project/job management systems can manage large-scale projects of translation services localization services. They allow translation service providers structure complex translation projects, assign the various tasks different people, and track the progress of each of these tasks.	(1) Every larger translation or localization company today uses some kind or other of Translation/localization project/job management systems in order to keep full control over all – sometimes highly complex multilingual – translation/localization
today they incorequirements. The well as more software. Today - Authoring too - Technical doc - Corpus technical control of the control of th	chnologies were monolingual applications, but breasingly have to comply with multilingual hey provide more features and functionalities as security against data corruption than office text technologies mainly comprise:	(1) A global professional services firm and a pioneer in linking learning to business objectives and performance improvement using has delivered programs in several languages to nearly 4 million people in dozens of countries. (Source: http://www.opentext.com/2/global/customers/successstories.htm **Sys action=show&id=860) (2) Belgian Railways manage all forms of content in multiple (and multilingual) business processes with the assistance of a large software provider with the following result Progressive paper cost reduction strategy – estimated EUR 3 million annual savings All documents integrated to business processes and accessible from multiple user interfaces Agility to meet evolving customer demands Compliance with demands for traceability, conformity, and safety certificates

	"The benefit of this integration is that you save time finding the right documents, you reduce the cost of manipulating these documents, and you have an accuracy of the information related to specific and critical business processes within your company. (Source: http://www.opentext.com/2/global/customers/successstories.htm ?sys action=show&id=840)
Authoring tools Major types of authoring tools support the authoring/editing of scientific and technical texts, business texts, educational content, audiovisual and multimedia content as well as web content etc. Some can embed formulas and graphics; others support the layout and design of texts. Some of them are closing the gap to desktop publishing systems.	(1) Education sector has been benefited by the onset of elearning authoring tools which provide customers the opportunity to create interactive e-learning content and materials incl. a tool that builds language training for schools, colleges or universities using object animations, questions and mp3-sounds. Many educational institutions and individuals have taken advantage of these tools and appreciate their features. (Source: CourseLab http://www.courselab.com/) Daniel Gabriel (NHS IT training) It is free This is one of the easiest and most powerful software I've ever used to create eLearning materials. Even without capturing screens with a screen recorder, you can still easily create a demonstration movie using the TIME LINE feature. The Actions feature is a very powerful tool that makes it very easy to create an interactive environment. I'm really enjoying creating materials with this great tool and I think I'll be using it for a very long time". (2) The telecom industry typically has to roll out training updates on processes, technical requirements, sales and customer service at a frantic pace using adapted authoring tools for the creation of forms, formulating contracts and special offers etc.
Technical documentation (TD) systems (or technical communication systems) cover a broad range from basic tools for use by individuals via professional systems for cooperative work up to full-fledged enterprise solutions. TD systems are used to develop different kinds of documents containing product- or service-related information. Some TD systems are converging towards localization systems.	(1) An innovative rail consulting company is performing assignments within interior systems, car bodies, bogies, driver cabs and propulsion systems by using a web-based platform GoXml is revolutionising the handling of technical documentation. (TD Rail & Industry, Source: http://www.railway-technology.com/contractors/project/traveldesign/
Corpus technology (CT) systems/tools cover first of all text corpora (speech corpora are covered under speech technology). CT is applied not only in machine translation, but also in knowledge management for information retrieval, knowledge building and artificial intelligence using annotation, word sense disambiguation (important in machine translation information retrieval and parsing).	(1) On the basis of a cooperation agreement the European Patent Office (EPO) and Google will cooperate to provide machine translation of all public patent documents from several European languages into other European languages. (2) The European Patent Office (EPO) uses all kinds of highly powerful systems based on corpus technology for its internal documentation. (SDL)
Desktop publishing (DTP) systems Initially supported the creation of documents using page layout software on a personal computer. Today, they help	(1) A language service provider specialized on high-end multilingual catalogues for trade fairs uses a mix of self-developed, purchased or leased localization systems in combination with a dedicated catalogue content management

creating a professional-looking end result, with collayout and design. DTP is used for publishing at all I from small-circulation documents such as local newslett books, magazines and newspapers. Some DTP synhave been enhanced by translation technology and technology tools. Terminology management systems (TMS) have emerged as a support for large-scale terminology work in organizations or for translation services. As terminology modules of a computer-assisted translation system or localization system, they allow translation service or localization service providers to manage their terminology centrally and systematically in database form as part of a language policy. Governments and industries use TMS for harmonizing terminology as a goal in itself or for supporting translation, such as IATE (=external link), the inter-institutional terminology database of the European Union. Speech technology (ST) and speech technology tools (STT) were designed to respond to or duplicate the human voice. They are used for aiding the voice- or hearing-disabled as well as the blind, communicating with computers without a keyboard, marketing goods or services by telephone, enhancing computer games etc. They comprise speech recognition and speech synthesis tools, high-speed speech	(2) An advertising agency uses DTP systems in order to make its documents look professional. When having the texts translated, the layout can quickly be redesigned and adapted to the layout if necessary, e.g. if translated text is shorter/longer than the original text, written in a different script or writing direction. (1) Bosch required a web-based portal which all its employees could access via the intranet in order to look for terms in several different languages. In other words, an online dictionary containing company-specific data. SDL MultiTerm and SDL Translation Management System was the chosen solution. (Source: http://www.translationzone.com/en/resources/downloads/case-studies/default.asp) (2) As a leading technology supplier to banks and governments, Giesecke & Devrient requires high-quality user documentation delivered into multiple languages for its worldwide customers. To help improve content quality and consistency, they turned to SDL and implemented a terminology management system. (Source: http://www.translationzone.com/en/resources/downloads/case-studies/default.asp) (3) The Canton of Bern, chose MultiTrans as their translation and terminology management solution. This Office understood that for the kind of translation that they perform, the audience is important. When it is made up of the voting public, politicians, and other governments, the need to quote prior documents exactly becomes more important than controlled source. This is a matter of legal security, and cannot be viewed lightly. (Source: http://www.multicorpora.com/en/resources/case-studies/) (1) A company that produces mobile phones implements speech technology into its devices and thus makes them more attractive for the users as they can communicate with their phones more easily. Additionally, the user group is broader as persons with disabilities (e.g. visually impaired people) can use those mobile phones, too. The company sells more phones as usually and thus increases its income.
transcription and dictation tools, speech compression and manipulation, voice access to information, up to innovative systems, such as video rewrite and other dubbing systems.	(Apple)
Some kinds of content management systems (CMS) are used to store and subsequently find / retrieve large amounts of data. Originally not designed to synchronize content of translation services and localization services, many became partnered with globalization management. CMS can also be used for procedures in order to manage information and workflows in a collaborative environment. Some of them are built on top of separate content management frameworks, or	 (1) A very large LSP uses virtually all kinds of CMS to handle various types of content for different purposes in such a way that that a number of heterogeneous systems is integrated by a software platform. (2) Throughout the pharmaceutical industry, sophisticated centralized document management systems are utilized to store, track and secure organizational documentation, some of which have a variety of new applications, such as providing the primary interface to an information sharing portal for the clinical

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	application programming interfaces for creating a customized CMS. Language teaching / learning systems: comprise many kinds of information and communication technologies (ICT) systems supporting language teaching and training, such as specific media to implement the learning process, web-based learning, computer-based learning, virtual education opportunities, digital collaboration and computer-based training (CBT). eLearning or technology enhanced learning (TEL) systems are used for computer-assisted language learning (CALL) or support content and language integrated learning (CLIL). The integration of the teaching / learning aspects to the respective technologies gave rise to educational content authoring tools, learning content management systems (CMS), language learning content	development organization, as well as sales and marketing, ensuring consistent, fast information access about compounds and commercialized products. (LiquidHub;Source: http://www.liquidhub.com/byind_doc.html) (1) Large language online language learning system developers use tools, which will enable users to create media rich webpages for language learning with automatically link to a bespoke dictionary interface placing online dictionaries in +100 languages at the user's disposal, thereby enabling them to interrogate the text at their own pace and according to their own personal need. Some of the tools have also been optimised for mobile devices (e.g. iPads, smartphones etc.) thereby ensuring that content can be created and enjoyed on the move. (TOOLS; Source: http://www.languages.dk/tools/index.htm) (2) A language learning environment features numerous tutorials at various entry levels, where courses are not monitored but chat rooms and forums for questions are available. The tutorials feature audio files for the improvement of listening
	resources etc.	comprehension and pronunciation. Interactive assessment tests are also available. (Source: http://ec.europa.eu/languages/documents/doc527 en.pdf) (3) Radio and TV broadcasters have developed systems for interactive learning opportunities for several languages, such as Italian, French, Spanish and German. Such a self-study environment features a variety of exercises and materials: basic language courses based on broadcasts from the BBC Learning Zone and available for download, accompanied by a work sheet. Listening comprehension and reading materials are also provided. (Source: http://ec.europa.eu/languages/documents/doc527 en.pdf)
electronic form: in databa	tured content published or accessible in ses, on CD-ROM or dedicated devices (e.g. on the Internet through online access. The tent resources comprise: Online Online	A language technology tool (LTT) developer integrates different kinds of language and other content resources (LCR) in its tools so that they can be used right away (incl. the provision of default settings for managing different kinds of content).
	Terminological data online Terminologies are major means of communication between experts, knowledge representations at a basic level and accessing scientific-technical information and knowledge. They are indispensable for translation services, interpretation services, localization services and technical documentation as well as information, knowledge management and content management. That is why collections of terminological data online abound in the Internet. Among the richest terminological data	(1) A manufacturer of medical devices adds standardized terminology as well as pertinent legal terminology to the dictionaries available under its office automation software throughout the enterprise as one of the measures to reduce variation in wording in its technical documentation. (2) An international standardizing organization provides free of charge access to all its standardized terminologies to help standardizing committees to strive for consistency throughout standardization and as a means to promote standards, e.g. in technical universities or vocational trainings.

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	repositories online that can be accessed are IATE http://iate.europa.eu), the inter-institutional terminology database of the European Union, and TERMIUM Plus (http://www.termiumplus.gc.ca), the Government of Canada's terminology and linguistic data bank.	
	Lexicographical data online A language consists of many words, compounds, collocations, metaphors etc., potentially used by everybody in a language community. Professionally they are used by "word-workers", e.g. journalists and writers of all sorts. Lexicographical data can be turned into different kinds of products, such as dictionaries for synonyms and antonyms, etymology, reverse look-up, rhyming, collocations, slang, proverbs, as well as language thesauri, lexicons and encyclopedia.	In a company-wide style-guide a manufacturer lays down the rules for formulating instructions geared towards its American and British customers and provides the respective electronic dictionaries under its office automation software throughout the enterprise (together with the proper settings en US and en UK).
	Other kinds of structured content online Cover a variety of specialized structured content resources not necessarily geared towards serving linguistic purposes. There are pictorial and visual dictionaries, collections of chemical and other formulas, different directories, lists of graphical symbols, standardized quantities and units, coding systems for names of countries, currencies, etc. These resources may be important for expert communication, technical documentation, desktop publishing, translation services and localization services, as well as for language teaching / learning purposes or for supporting communication services for persons with disabilities (PwD).	A motherboard manufacturer establishes a data repository for all its product-related data in order to ensure that they are used in a unified way throughout technical documentation and instructions in all the languages needed (including the rules for use in non-Latin written languages).
	Unstructured content online covers a broad range of kinds of semi-structured or unstructured documents (containing text more or less organized into sections sometimes comprising non-linguistic content), or other visual, audio or audiovisual content. This includes music, films etc. which often have linguistic content embedded or combined with it. Using language technology tools, content elements of unstructured content can be turned into re-usable structured language and other content resources (LCR). Increasingly, unstructured documents are used as parallel texts for translation purposes, as an online service offering text samples, or in translation memory systems, computer-assisted translation (CAT) tools/systems or some kinds of content management systems CMS).	 (1) One of the biggest free of charge provider of unstructured content is the widely used Wikipedia, but increasingly other hosts of unstructured (or semi-structured) content like patent documents at patent offices are offering their resources free of charge for information gathering (which, however, can also be used for linguistic purposes). (2) Large consumer goods manufacturers link their technical documentation systems with social media CMS so that they can survey consumer reactions while developing and localizing technical documentation.
rates. Globalization has	& language service Ing industry with high growth led to more contacts at any refield of application, which has	 (1) A large language service provider (LSP) offers not only the whole range of language services or a major part of it, but also offers consultancy services with respect to the implementation of a systematic language policy in the enterprise. (2) In preparation of a systematic approach to manage its various language related issues a large financial corporation asks several LTT developers and LSP to offer them solutions for using different kinds of LTT and language services for a right mix of in-house use and outsourcing in order to enhance efficiency

- Text creation, editir	ng, re-purposing	and quality of results.
- Translation service		
- Interpreting service		
- Localization service		
 Desktop publishing 		
	o localization services)	
- Language teaching		
	consultancy services	
	rvices for people with	
<u>disabilities</u>		
	Text creation, editing, re-purposing Some language service providers (LSP) also offer a range of writing and editing services, such as scientific writing, technical writing, medical writing, technical documentation, copywriting, ghostwriting, editing and revising, rewriting and reshaping of texts. This may go so far as to turning a text into presentational material or more or less laborious high-end publications e.g. by adding graphic design and illustrations (often comprising linguistic elements). There are even LSP only specialized on such services – using all kinds of language technology tools (LTT) available. Translation services Although the demand for literary translation has increased over the years and	An increasing number of enterprises use language services comprising all levels of text creation editing and quality revision proof-reading online editorial re-purposing of text enhancement of content for SEO (search engine optimization) overall quality of all kinds of texts of an enterprise. (1) A translation service specialized on medical and pharmaceutical translations is closely cooperating with a number
	is a substantial part of the publishing business, the demand for specialized translations has grown exponentially. This growth has enhanced the development of translation technologies to improve the performance and quality of translation. Due to increased concerns about translation quality, standards on translation management have been developed and certification schemes implemented. In the light of the professionalization of translation services customers have abolished or radically reduced their previous translation departments and switched to outsourcing. Specialization is widening (e.g. into the multimedia fields, such as dubbing/synchronization and subtitling)	of regular customers in order to guarantee a good quality of the translations thus also reducing the liability risks for the customers.
	 Interpreting services There are 3 major types of interpretation services: 1. Conference (or simultaneous) interpreting; 2. Community interpreting (medical/hospital interpreting, interpreting in the context of migration and asylum seeking, etc.) including court interpreting; 3. Business (or industrial) interpreting, using the technologies and methods of 1 and 2; they are highly depending on domain-specific competences for terminological data and terminology management systems as well as domain expertise. Also new kinds of interpretation services emerged, such as whispered 	(1) An Austrian language service provider (LSP) specialized on interpretation services not only provides experienced and professional interpreters and the technical equipment needed for conference interpreting, but also gives advice customers on to decide which type of interpreting is best for the respective event and takes care of certain conference-related activities and services.

interpretation, interpreting for the media, sign language interpreting (as one of the communication services for persons with disabilities) and over the phone interpreting (OPI) (often offered through the Internet). Localization (L10N) services Localization (L10N) is the adaptation of a product or service to other communities with respect to cultural, linguistic, legal, political and technological factors. L10N services are generally characterized by high requirements for using language technologies, including specialized localization systems and desktop publishing software, and demands on quality as well as cross-language consistency of the products or service documentation. There is quite an overlap with translation services and the related technologies are showing converging tendencies.	(1) A French software localization company offers the whole localization process to its customers. This comprises translating the source software into the target languages, adapting the dialogue boxes (e.g. size), installing and testing the target software as well as translating the help and the documentation of the software.
Desktop publishing (DTP) services Today, multilingual DTP competences are required in translation services and even more so in localization services and technical documentation, which is largely due to the challenges posed by globalization, internationalization and localization. In order to ensure interoperability between common office automation software, translation technologies and localization systems on the one hand and DTP systems on the other hand, standards-based conversion tools are necessary. Under the point of view of system integration and content interoperability, multilingual DTP services have become an important business.	(1) An Austrian company translates files that were laid out in desktop publishing formats by first exporting text from various layout formats such as QuarkXPress, InDesign, FrameMaker, PageMaker, etc.; after translation, the texts are automatically imported back into the original layout maintaining all structural and format characteristics of the original document, such as fonts, graphics, special characters, etc. in the translated target document.
 Language teaching and training (LT&T) services outside of the official educational system have tremendously developed over the last three decades. 1. The target groups for LT&T got more and more differentiated to cover different needs of individual learners. 2. LT&T methods today are offering more and more tailor-made courses; language skills and competences can be tested in various ways – but not yet on the basis of international standards. 3. Information and communication technology brought about new language teaching / learning systems and methods; language learning platforms are mushrooming on the Internet. 4. The demand on teachers for extended language teaching skills has grown. 	 Many language learning platforms of all sorts (commercial and non-commercial, such as public Broadcasting companies) are booming in the Internet and are offering formal courses and new ways of language learning to users, who cannot afford or do not want to spend time in classroom. Computer-assisted language learning, flashcards and vocabulary trainer systems, in-car and in-flight language learning and other new methods abound. A chamber of commerce is offering domain-specific language learning, such as English or Russian for civil engineers. An ICT company trains all future expatriates in the language of the target country.
Language industry consultancy services The rapid development of the language industries provides enterprises with new opportunities and innovative perspectives to expand their businesses beyond their home markets. However, since language industries are very fragmented and rapidly progressing, potential customers as well as stakeholders of the language industries need advice with respect to market	A Swiss company offers language consultancy services that comprise the following aspects: assessing the impact and overall quality of the customer's texts, producing visual aids for business presentations in foreign languages, compiling style guides for consistent and distinctive brand

development up to the formulation of language policies/strategies. Thus consultancy services concerning language technologies, language services, content management, standardization and certification up to comprehensive language consultancy services, are gradually emerging. Some consultancy services also include aspects of communication with persons with disabilities (PwD).	positioning, establishing the linguistic suitability of the customer's promotional material (product names, slogans, etc.) for consumers and clients in respective target markets, implementing and optimizing translation and terminology workflows to meet multilingual communications requirements, procuring and evaluating language service providers for specific projects/language pairs, performing language and terminology-related tasks on an adhoc basis to overcome temporary personnel shortages in the customer's company.
Communication services for persons with disabilities (PwD) The needs of PwD are increasingly taken care of by many of the language technologies (e.g. by applying assistive technologies), language services (e.g. in the form of sign language interpreting) and language and other content resources (e.g. in the form of sign language repositories). They have become a topic of legislation, are dealt with by standardization, are subject to certification and should also be mentioned in language policies.	(1) British TV broadcasters provide subtitling, signing and audio description for persons with disabilities. (Source: Ofcom - independent regulator and competition authority for the UK commun ications industries) (2) The growing assistive technologies industry develops tools for persons with disabilities (PwD).
Standardization, certification and language policy The rapidly growing market of the language industries has led to a differentiation of demands on the customer side, and language industry products and language services offered by the language industries. This and the general demand for system integration and interoperability have triggered the need for language policies, standardization, as well as for quality assessment systems (see: certification). This development has also had a great impact on the competences and skills taught at higher educational institutions (including the respective academic certification systems) as well as on the language and other content resources and on the language teaching and training services.	(1) A national standardizing organization tying up with a certification authority implements a "certification policy" for standards-based certification as a service for industry thus increasing their customer base.
Standardization Technical standardization – whether carried out in the framework of formal standardization organizations (such as ISO and IEC and their national member bodies) or by other standards developing organizations (SDO) – is also considered as a service to industry and society at large. The standardization of a "product, process or service" in a broad sense covers any material, component, equipment, system, interface, protocol, procedure, function, method or activity. Thus, in the language industries standardization can apply to all kinds of aspects of suitability of systems and tools, the methods and quality of services, the quality and interoperability of language and other content resources, as well as	(1) A manufacturer of mother-boards implemented standards-compliant software for a standards-based multilingual product classification scheme to reorganize purchase of investment goods and its parts administration which not only reduced the costs for parts administration, but also improved communication between the production plants in different countries. (2) Next to 2 million "travelling learners" a year benefit from standard EN 14804:2005 Language study tour providers – Requirements defining minimum requirements for the language course providers and the language travel industry; more and more such providers get certified on the basis of this standard. (EN 14804:2005 Language study tour providers – Requirements)

to the assessmen	t and certification schemes based on standards.		
Certification As quality is an indefined as a product as a product assurance that a specified require pertaining to the I the standards conservice, language successful impler implementations of for instance LIC	nportant cost, image and market success factor, certification cedure by which a first, second or third party gives writ process, product, service, skill or competence conforms ments. If these requirements are specified in a standanguage industries (LI), the certification process would assempliance of the respective language technology tool, language and other content resource or skill / competence. Even mentation of a language policy could be certified. Success of pertinent standards-based certification schemes in the LI see, the Language Industry Certification System (www.lice) and ECQA, the European Certification and Qualification	can thu implement to (2) Question of the (3) profit of the care can th	A large insurance company requires that only certified LSPs in bid for tenders concerning outsourcing language services us reducing the overall effort in selecting their LSPs and proving overall quality at the same time. Through the cooperation of the European Competence palification Association (ECQA) with the Language Industry ritification System (LICS) affordable certification schemes are fixed to LSP and experts carrying out different kinds of reguage services. The national health services of a country got rid of a serious oblem concerning the validity and credibility of interpreting in spitals by means of the successful development and plementation of a vendor-neutral certification programme with a assistance of the Certification Commission for Healthcare erpreters.
Language policy A language policy pane. Enterprise implement a lang others. Such a h among others: - language polic - the extent to w - the kinds of la - the kinds of la - whether – and - whether certifi - whether – and to the enterprise teaching and t - whether – ar	1 37	on ham ma lan poi con use (Sc Lan "Hic sig ow Re httl ns	Since globalization for Danish companies means that they we to communicate in the language of their business relations, any of them have developed a strategy for managing aguages competences at different levels. Furthermore, at the int of this study, between 10 and 20 of the largest Danish mpanies had implemented a language policy focusing on the e of the national language. ource: Language policy in Danish companies, Anne Lise ursen) ow an economy approaches its language policy can have a gnificant impact on how it conducts business, both within its in borders and with its neighbors." (Source: APEC Human esources Development, Wiki p://hrd.apec.org/index.php/Business Language Policy#Lesso Learned