SMART PROFILE

John M. Smart - A profile of the man whose company wants to create a "global language" for the 21st century.

Written by:

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The quest for a global language

Like a famous editor of the Oxford Dictionary, John M. Smart was born in New Zealand. At an early age he moved to Australia. He completed his university education in the United States when his father was a senior diplomat at the United Nations headquarters in New York.

He holds degrees in computer science and publishing Business Management from the Rochester Institute of Technology, New York, the hometown of Kodak and Xerox.

The idea of a global language is not new. In the 1930s an eccentric Englishman, C.K. Ogden, developed an 800-word vocabulary called BASIC English. Ogden proposed that the masses could learn simplified English faster than complex English. Ogden also proposed the introduction of a 42-letter English alphabet for easier English spelling. The Esperanto movement has been another trend to a universal language.

These early efforts at language standardisation became the subject of John Smart's university thesis. After graduation, he worked for American Standard, a large US manufacturer of plumbing fixtures. To improve international sales, he suggested that company translate its American English catalogues (catalogs) and add metric dimensions. International sales improved dramatically, especially outside the non-metric USA.

Another influence in the mid-1980s, was "Artificial Intelligence". Many prominent scientists believed that computers could understand the meaning of sentences. But John Smart quickly saw the problem was insufficient computer power and uncontrolled input. To parse a simple sentence requires more than two million calculations. To analyse textual nuances requires more than seven million calculations.

John M. Smart

To exploit the growing demand for Artificial Intelligence software, Mr. Smart formed a company called SMART AI. His choice of company name proved a valuable lesson in semantics when he got calls from American farmers requesting Artificial Insemination (AI) services. The company name was quickly changed to SMART Communications and is still located in the shadow of the UN in New York City.

Enter the Caterpillar bulldozer

In the early 1980s, SMART's work in artificial intelligence brought it a contract to develop a "Controlled English" for Xerox technical service manuals. At that time, Xerox was experimenting with Systran machine translation (MT). What seemed like a viable solution to pre-edit texts for MT was abruptly cancelled when Xerox sold its computer division.

Later, John Smart had a chance meeting on a flight from New York to Chicago with an executive of the Caterpillar Tractor Company (now Caterpillar Inc.). Caterpillar is one of the largest US exporters with customers in 131 countries. Caterpillar, at the request of the builders of the Amazon highway in Brazil, was forced to develop a common technical language to write repair instructions. These instructions were critical because there was no chance for expensive heavy equipment in the middle of the Amazon jungle to be returned to a fixed maintenance base. Further, the Government of Brazil had arranged for Caterpillar to be legally obliged to employ as many Brazilians as possible. John Smart learned that Caterpillar had taken C.K. Ogden's Basic English principles and developed an 800-word technical vocabulary for civil engineering, hydraulics, heavy equipment operations, mechanical and electrical engineering.

An executive at Caterpillar advised John Smart that a recent story in the Wall Street Journal, (the top American business newspaper), had generated over 1,000 requests for the Caterpillar Fundamental English (CFE) technology. The result was that SMART and Caterpillar signed a technology licensing deal in North America, whereby SMART "mined" the 1,000 enquiries and developed Controlled English projects for Clark Equipment, Hyster Company, Cummins Engine, JI Case (now CNH), Komatsu and many others.

In these early projects, John Smart discovered that making an art form like technical authoring into a science is a lot of work. He discovered that you can

teach writers the rules and controlled vocabulary, but what is really required is an enforcement tool.

The invention of MAXit Checker.

In the late 1980s, SMART won a contract from the Unisys Corporation to develop the computer technology for the MAXit Checker. Version 1.0 of the MAXit Checker was written in the Algol language (a precursor to C/C++), but only ran on large and expensive Unisys A4 mainframes. The writers sent their texts for checking and the MAXit Checker inserted suggestions between the lines of the text. This approach was functional, but not writer friendly.

A later contract with Digital Equipment (now Compaq) introduced MAXit to the advanced DEC VAX, used in major newspapers. SMART rewrote the MAXit "grammar engine" into a text processing language called "C" and invented at AT&T Bell Labs (now Lucent Bell Laboratories). During this conversion, SMART greatly improved the parsing and text handling algorithms and added thousands of writing rules to give the writer the illusion of thinking! Later conversions allows MAXit to run on many other types of computers.

Today, the MAXit "grammar engine" is also integrated to authoring tools like Microsoft WORD, FrameMaker, Interleaf, Adept*Editor, XML and SGML content management tools.

MAXit meets MT

The next major development came when the Government of Canada awarded SMART a project to translate messages by computer from English to French inside Canada's largest computer network. From this project, SMART learned that despite the multi-million dollar efforts in machine translation (notably Systran in the European Union), the key to any successful machine translation program is vocabulary control, called a "pre-edit". Because SMART used its pre-edit tool, the English-to-French translations in Canada were functional and the project was a commercial success.

Today, SMART markets a companion tool called the SMART Translator that is limited to machine translation of Controlled English. This use of a controlled vocabulary for authoring the original language is based on the premise that the cost of a "pre-edit" is more economical than multiple "post-edits" by the translators.

Controlled English for global use

Aerospace

SMART has become the primary source of AECMA (consortium of aircraft manufacturers) Simplified English (AECMA-SE) tools and writer training. The Airbus consortium now requires companies to write all maintenance manuals in Simplified English. A key advantage of Controlled English is that the technical information is shared by 700 airlines worldwide.

Six sigma QA

Companies like General Electric, Motorola, SONY, Honeywell advocate a quality assurance program called six sigma. Tests show that the same six sigma principles can be successfully applied to technical authoring to enforce a measure of quality control for user documentation.

Can Controlled English become a global language?

In October 1999, the world population reached six billion. Mandarin Chinese is now the first language of the globe, followed by English, Spanish, Portuguese and Hindi. The explosive growth of the Internet, telecommunications and globalisation is forcing 21st century companies to reach customers and technicians on a 24 hours a day, seven days a week basis (the abbreviation 24/7 is suddenly appearing everywhere). These companies need to communicate with semantic precision, often by web-enabled customer support programs. According to Gartner Group studies, 42% of the internet is in English. Microsoft claims that a personal computer is purchased every three seconds somewhere in the world.

John Smart is convinced that globalisation via the internet will force a common language that will probably be "global" English. Evidence of this fact is the recent government debate in Japanese parliament on the adoption of English as Japan's second language. John believes that the emerging science of Controlled English will become the next lingua franca. He predicts that, by 2003, service technicians will receive service instructions on their mobile telephones (cellphones). The £35 billion in fees paid in a Government auction in early May for mobile telephone rights in the UK confirms he may be "right" - or is that "correct" in Controlled English. He also reminded me (I was about to take a transatlantic flight) that if the flight is on an Airbus A340 or Boeing 747 I would probably be flying on top of one million pages of Simplified English maintenance instructions.

Does John have any spare time, I wonder. Every time I have spoken to him (our acquaintance goes back over ten years) he is always fizzing with ideas and projects, and it is not unusual for him to fire off emails to me at 7.30 in the morning. But living as he does on the island of Manhattan, he reckons to make the most of its wide range of cultural activities. Other leisure enjoyments are travel and golf, but the mainspring of this existence remains crusading for Controlled English as a global language. He welcomes questions on Controlled English at the company web site www.smartny.com. ■