CUSTOMER SATISFACTION IN CALL: QUERIES FROM THE USERS AND OUR FINAL IMPACT

PLENARY ADDRESS
CALICO '92 INTERNATIONAL SYMPOSIUM
“BRIDGES”
Maastricht **** Valkenburg, The Netherlands

Wilfried Decoo, University of Antwerp
Antwerp, Belgium

ABSTRACT

CALL is one of the many forms of applied science. Our research must lead to products and our aim is for these products to be used. It thus raises not only questions in the field of linguistics and informatics, but also pedagogical and commercial issues. I would like to address this last issues from the viewpoint of the customer of CALL, the one who purchases our product and is supposed to use it to learn another language.

I will draw, of course, from the experience of our research center at Antwerp University, which has been producing educational software since 1985, for language learning in elementary and secondary education, in the industry, in the public sector, but also for the home market in Flanders, the Dutch-speaking part of Belgium. This means I situate my presentation thinking mainly of these target groups, and in a European context. I hope you will bear this in mind in order not to generalize beyond certain limits. On the other hand, it is likely that many of the items I will mention are also applicable to other target groups and other countries.

I would like to tackle the subject by first of all identifying our customers—and especially our best customers. Then I will address a number of typical questions that are the usual “queries of the users.”
WHO ARE OUR CUSTOMERS?

One can distinguish between two main groups:

- language teachers within educational institutions who purchase software for their students
- home customers: private students who purchase software directly for use at home.

Within educational institutions

The first main group, situated within educational institutions, is rather varied. We could distinguish the following subgroups:

Elementary and secondary schools
On the level of elementary and secondary schools, the introduction of language courseware is still rather limited, tied to a number of potential limitations:

- the lack of sufficient equipment for large groups, for the various subjects;
- the lack of space for CALL within the lesson time tables;
- a possible lack of discipline and motivation to make the more individualized approach of CALL work;
- the lack of sufficient software matching precisely the content progression within the curriculum.

The success of CALL in elementary and secondary education thus largely depends on the enthusiasm and dedication of single teachers, who are willing to fight the traditional system and create fruitful learning environments for CALL. We should be extremely grateful for these forefront fighters and help them as much as we can. But, in view of the limitations I just mentioned, elementary and secondary schools are not our best customers.
**Colleges**

On college level, some of these limitations tend to be lifted:

- more and more colleges provide access to multimedia learning areas, often directed by specialists, thus creating a more formal and organized environment for CALL;
- the college time tables provide more room for students to work with CALL;
- college students have more discipline and motivation for individualized work;
- software matching the content progression within the curriculum becomes more available, especially if specialists within the college also develop the software needed. In fact, the history of CALL shows that the first successful use of CALL is to be found within this environment: computer-and-language freaks within the college develop courseware and make sure their students use it. The vast majority of publications and papers dealing with CALL from 1960 on—to my knowledge the year of one of the first CALL publications—confirms this situation (Skinner, 1960).

But, if the college thus proves to be a better environment for CALL, commercially spoken they do not rate very high—I am still referring to our European experience. Their purchasing conduct is often slow and bureaucratic and the funds are limited. The internal production of software is valued more, since it also provides academic output in terms of publications and conference papers. It could also be that colleges find little of value to their own situation on the market.

**Adult language learning centers**

A third subgroup within the educational system is comprised of adult language learning centers, either in the form of commercial language institutes, which by the way are booming in Europe, or tied to training centers of the public or private sectors. At the present time, from our experience, this third subgroup counts the best customers within the group of educational institutions.

In the public sector we thus have the training centers of the army, of the Civil Servant Services, of the Employment Offices. In the private sector we have the training centers of the larger enterprises. Both turn out to be excellent and satisfied customers, *if a number of criteria are met*—to be discussed in this presentation.
The home customers

In our experience, the private purchase of software directly for use at home has been skyrocketing. In just a few years, at our Didascalia center, we have seen a shift from 15% in 1986 to 90% in 1992, for our CALL-packages sold in Flanders to the home market, compared to the other part that goes to educational institutions—now only 10%. I believe this is probably the most stunning evolution in our distribution of language software, because of the pedagogical and commercial implications and the “queries from the users” that it entails. The reasons for this shift to the home market are easy to understand:

• the booming market of the PC at home;
• the relative failure of language learning at school or the sudden need, at a certain moment in life, to refresh and expand the foreign language learned at school years before;
• the intensification of learning at home, partially explained by what is called the “cocooning culture” of the nineties, but certainly by the availability of effective home learning systems.

It is obvious that a large part of the “queries from the users” stem from this new situation. It is also a challenging situation, because of the drop-out factor: how many home-learners persevere in the program they set as a goal?

Tangents between the two major groups

When discerning between the two major groups, educational institutions and home users, we should not be blind for some tangents between the two:

• language teachers may encourage students to purchase software for use at home, and even act as intermediary in the purchase;
• private students may purchase software for use at home, but to improve their work at school, and they may or may not tell the teacher.

As we shall see, these variables in the purchasing conduct will also affect the queries from the users.
FIVE BASIC “QUERIES FROM THE USERS”

I will discuss five basic questions we often hear from potential customers. The first question will be dealt with quite extensively, as it is the most important. The other four will be dealt with more briefly.

Does it answer my needs?

This is the foremost and indeed crucial question. It comes from the students and teachers or trainers in educational institutions as well as from the individual at home. “Does answer my needs?” These needs are extremely varied. We may have the pupil in fifth or sixth grade in elementary education, who starts to learn his very first words in a foreign language. We may have the college student in an advanced language program, looking for software to sustain his endeavors. We may have the adult who learned a foreign language long ago and wants to use his computer to refresh and broaden his general language knowledge. We may have the employee in a specific function who needs LSP (language for special purposes) sometimes even tied to language specific to his enterprise. Customer satisfaction will depend on how we answer these needs.

Two major directions in needs analysis

It seems we can discern two major directions in needs analysis:

Specific needs direction
This pertains to needs which can be identified precisely beforehand. Pupils or students working with an existing language method, where the lexical and grammatical content is well defined, need software that matches exactly what they are learning or that expands it appropriately, so CALL becomes a major asset in the learning process. The teacher can refer his students to courseware, for general or remedial practice, or even for more broadening learning experiences. The home user, if also still a pupil or student working with an existing language method, will enjoy at home the possibility to prepare well for tests and examinations.

From our experience at Didascalia, customer satisfaction is very high in the use of CALL that matches existing textbooks. For example, we developed software to match the French language learning series Eventail, used by most elementary and secondary schools in Flanders. These CALL-packages are our top-sellers, going for 95% to the home market in the already mentioned tangent between home-using for school application. Moreover, and this is an important aspect, the impact through continuous
use is also very high. Since the Eventail software contains material for six years of language study, matching the various volumes of the textbook series, our young customers work with the same software package weekly, if not daily, for a period of six years.

The same principle applies to any CALL-package developed for specific purposes, matching a precise public and their specific needs in terms of content and didactic formatting. To develop such packages, intense previous research is needed. For the European Communities COMETT-project Calliope we have been developing a number of CALL-packages for specific industrial target groups, such as metallurgy and telecommunication. For each sector we need approximately two man-years of research to identify and format the contents in various languages.

However, in many cases outside this example, the specific needs are not met. Teachers or trainers often use, aside from the textbook in the classroom, commercially available courseware, which has not been developed specifically for their peculiar situation or tied to the specific method or handbook. The consequence is an often serious lack of correlation between the content of the courseware and the specific learning situation. Pupils or students using these programs will face unfamiliar words and structures and deviant methodologies, or they will have to work with items that are too challenging or not challenging enough, according to the level they have already reached.

Especially in the early phases of foreign language learning, this lack of correlation is quite disturbing, because unsystematic and problematic approaches to language cause more language errors which require unnecessary correction time and remedial practice. It also gives more uncertainty to the learner, and may lead to discouragement and a quick giving up of using the software. There will be little customer satisfaction and the impact will be low.

**General needs direction**

Within the vast group of individual students at home, mostly adults, who are not tied any more to an educational institution, the language needs will often be very general: “I just want to learn French,” “I would like to brush up the German I learned,” “I have some basic knowledge of Spanish because I lived there, but now I want to get a better basis.” The group of people with these kinds of requests is very large, especially in countries with a minority language as mother tongue and where the need to master one or more foreign languages is a professional requirement, often surfacing only in the job itself.
Typical for this group of people is their inability to define their language needs more precisely, let alone set up didactic guidelines for themselves. But, on the other hand, their final aim is clear: be able to understand, converse, read and write a foreign language at a general threshold level, above survival, and without major frustrations. The CALL-package thus requested must be very broad in scope and content, starting from elementary level up, constantly systematizing the learning process, and enabling the learner to move forward in many varied ways according to personal content preferences and didactic strategies.

This brings us immediately to another, vital point to answer the needs of our customers: the need to fill our software with massive contents.

**The content challenge: moving towards multi-content packages**

Multi-media are in and we are all for it. But sometimes we have more media than content.

At the present time, at Didascalia, we have 15 people working full-time on the production of CALL. Thirteen of them are working only on content development, 2 are programming, with also some sidework on content. In other words, the ratio is approximately 7 to 1: 7 for content, 1 for programming, in terms of time-investment for CALL-production in our situation. It should be noted that we do not work with authoring systems: all our software is written in programming languages from the bottom up. And still the ratio is 7 persons working on content to one programmer.

I am afraid that among some producers of CALL the development of content is one of the most neglected aspects. We are working with one of the most powerful media ever developed: the computer. Even a simple PC has already the power to contain millions of lingual items, that can be organized into databases with multi-accessibility. It is this power we must learn to use to its full extent, meaning that most of the CALL-production energy has to go into large scale content development. We should never be satisfied with courseware packages, even in spectacular multi-media, if the content in the package is so limited that you can hardly work one hour with it—and sometimes much less. We need the next steps, whereby this package realizes its full potential in terms of content.

The want for large contents within one package pertains to both needs directions:

- In the specific needs direction, it is the easiest to develop because, in most cases, we can draw our content from existing language methods. I believe the absolute minimum content per software package should be for one year of language learning,
usually tied to a textbook. But it is very well possible to put on one 3.5” disk the material for several years of language study: customer satisfaction, as we shall see further, also stems from this richness of content for the price paid.

- In the general needs direction, the development of large scale content is more complex and challenging. At Didascalia, we use two major, complementary ways to ensure this development:

**Systematization**

Foreign language learning, especially in “communicative” methods, is often characterized by a lack of coherence and systematization: pupils or students are confronted with material, whereby words and structures are learned according to their casual appearance. The action of the teacher is dictated by this linguistic casualness and by the unexpected problems of the learner. Not only is this procedure cumbersome and time-consuming, but no guarantee is given that all unknown elements are duly explained and integrated. Weaker students may drop out of the leaning process.

We conducted computer-aided evaluation of existing materials, allowing us to analyze the patterns of lexical growth and reiteration of these words in foreign language textbooks which were composed manually (Decoo, 1990). To this effect frequency and morphological routines were developed to scan texts and to determine the first appearance and the reoccurrence of each lexical item, and also to compare the results with lists of fundamental French. A number of French textbooks for initial years were analyzed in this way. The results reveal major weaknesses in the selection and organization of learning material.

CALL-packages, especially for the general needs direction, thus should systematize contents. For example, a lexical program should aim at the systematic built-up and the concentric development of all semantic fields of the threshold level, so as to ensure graduality and completeness in communicative vocabulary acquisition. Moreover, the distribution of lexical items over the different lessons should be implemented in such a way that each lesson contains a balanced number of each of the various word classes.

Thus a major asset of CALL lies in long-range learning programs, especially because one of the weaknesses of most language programs is the breach between the elementary level, in which the lexical growth is somewhat controlled, and the sudden introduction, in subsequent years, of authentic material of much higher degrees of difficulty. Teachers often are not aware of the gap students have to overcome. Computer-
controlled graduality of the learning process helps to eliminate this handicap.

**External versatility**
In order to increase didactic efficiency and customers satisfaction, we need to have systems that adapt themselves easily to the situation of the user. In a school environment, this means adaptation to the student, to the teacher, to the curriculum, to the textbook and to the available hardware. In a company environment, it means adaptation to job profile, time management and the existing training curriculum. In a home environment, it means adaptation to the individual needs, learning tastes, and time possibilities.

In order to guarantee this complex adaptability within one package, we have worked out a set of criteria, bundled in the principle of external versatility (Van Elsen, 1991). External versatility stands for the immediate and precise adaptation of a system, which exists as an internal entity, to the external needs of every individual end user.

A first condition to meet these specific needs is the formatting of extensive contents. Therefore an inventory of well-defined items is made, based on frequency and disponibility research. Next these items are grouped into *didactemes*: an abstract concept underlying a concrete learning content. A didacteme can be distinguished by its distinctive features, e.g. for a lexical item:
- word class;
- semantic field;
- frequency order and “disponibility”;
- formal aspects to determine degree of difficulty (e.g. number of letters, number of syllables, degree of identity with other items, etc.);
- synonyms and homonyms;
- syntagmatic features.

Items can thus be grouped from the databases according to various criteria in relation to the didactic needs of the learner, which are “external” to the linguistic reality. One can select different distinctive features and make in this way a large number of choices. On the basis of these selections, the program tailors lessons accordingly.
At the same time, external versatility allows the selection of various didactic strategies. There should be room for formal explanation, for basic drill and practice, for more communicative exercises, for remedial learning, for personal exploration. There should be the choice between free-wheeling in the complete menu system and the cautious step-by-step progression in pre-prepared units—with all possible variations between those two extremes.

Thus effective CALL should more and more be viewed in the frame of a Multiple Environment Model. This means that the program does not work with branched systems and algorithms, but that the user is confronted with various environments which he can enter and leave at will according to his needs and his possibilities.

Indeed, we should not forget that our average customers also work with other software packages—text processing, database programs, spreadsheets, etc. of a highly professional nature. These programs, especially in dynamic and visual environments such as Windows, have changed the ways in which the computer is being used: the time becomes past where commands have to be typed in, detours have to be made to get what you want, etc. Software nowadays should allow immediate, intuitive interaction between man and machine. CALL cannot afford to remain behind in the new software environments.

**Does it work on my PC?**

A second question, asked as many times as the first, is: Can your program work on my PC?

Hardware facilities move forward at an incredible pace. Multi-media, hypermedia, videodisc, CD-ROM, CD-I, voice production and recognition, etc. oblige us to always work towards the future, to be on the front row of innovations. The poor producer who is still working on courseware for a simple PC, is looked at with some gentle commiseration. And yes, I do believe, especially at conferences like this one, that we should present and discuss the developments of the future and that we should provide our richest and most advanced customers with super-high-tech CALL for new, still exclusive hardware.

But, besides the Rolls Royce and Ferrari customers, there still is the crowd driving simple cars. There is the enormously extensive home market with basic but rather powerful PC’s, ranging into millions now all over the world; there are the thousands of
elementary and secondary schools which have purchased a number of relatively simple, basic PC’s. These people are perfectly satisfied with their machines, because this hardware answers their daily needs in word processing, D-Base application, spreadsheets, etc. One step further and they can also work in new and powerful software environments such as Windows. And many of these people would like to have good language courseware that works on their actual PC, in environments they are accustomed to, not on special machines or with extra equipment which they cannot afford or which they do not need for their other daily applications.

And so, if we want customer satisfaction and a large impact on the market, we need to also produce high quality CALL, with rich contents, for that market. If not, we will constantly frustrate the average customer whom we give a wonderful demonstration of something he cannot use at the present moment.

Is it easy to use?

The CALL “demonstration” is often an interesting experience. The producer is usually also the one who demonstrates: he knows his program backwards and forwards, he moves on very quickly and avoids automatically and often unconsciously anything that could disturb or block the program. He goes to the part that has the nicest content, slowing down at spectacular moments, and moving quickly on at the weaker parts.

Can the customer say: “Please, let me do it. Just tell me the basic keys. Only help me when I get blocked. I want to test how easy it is to use this thing.”? If the demonstrator becomes nervous, or must correct constantly, or has to give explanations why the user did things wrong, something may rather be wrong with the program.

Customer satisfaction has much to do with the user-friendliness of the program. A CALL-producer should bear in mind that user-friendliness does not automatically mean conformity with his own interface habits, but sensitivity to the specific environments that our customers are used to.

Some criteria of user-friendliness include:
- extreme simplicity of the screen lay-out, automatically leaving out all information that is irrelevant for the screen-moment;
• minimization of the interface actions: identical, unique keystrokes, encouraging finger automation and corresponding to the usual strokes in most software programs, so that the man-machine interaction becomes intuitive;
• structuring of the screen lay-out for immediate and maximal visual integration;
• functional and thus minimal use of highlighting, colors and lines;
• absolute speed: a computer program should never say: “Please wait, I’m searching...”

We should be aware of the breach between some CALL-producers, isolated in a traditional, sometimes artisanal programming, and the rapidly developing highly professional environments of our potential customers.

Am I still free?

How much freedom can we give a student? It depends on several factors:
• his ability to work with software so that he can quickly move within the environment;
• his ability to define his own learning needs;
• his maturity to organize his own learning process and evaluation.

There are vast differences between students: students, from the inexperienced computer use, not highly motivated, learning a completely unknown language, to the computer freak, highly motivated to brush up a previously learned language.

The degree of freedom we can give the student can thus not be a fixed condition of the software, but should also be a variable that can be changed at will. In other words, the same software package should present itself in such a way that it can be used with various degrees of freedom in order to ensure customer satisfaction.

At Didascalia, we developed for this purpose the so-called GUIDE-principle of user interfacing in courseware (Uyttersprot, 1990). GUIDE stands for Guided User Interface for Didactic Environments. It allows to define at will different learning contents, proficiency levels and/or strategies, immediately broadening of limiting the choices a user can make on the level of the menu system. We refer to this also as courseware navigation: the
basis is the complete range of possibilities in an extensive menu-system, but the user is only confronted with a tailor-made menu, precisely adjusted to his abilities, wants and needs. A teacher or trainer can thus decide not to give a student the freedom to choose certain paths for which he is not ready yet or which do not match the methodology chosen.

Especially in educational settings, where teachers or trainers have to set up more individualized CALL-units, we experienced that the GUIDE-principle contributes to customer satisfaction.

**What do I get for my money?**

Software can be a deceiving medium. From the outside one only sees a small disk. Unlike a book, one cannot immediately browse through it to get an idea of the organization and the density of the content. And indeed, the difference between that content in one disk and in another seemingly identical disk, can be enormous. To compare with printed material: one disk can have as its content two little pages, while the other can contain thousands of pages.

Both programs, moreover, could bear the same title, for example: “German cases.” The one disk contains five cloze-exercises with all in all 100 little sentences with Cloze-endings for German cases. The other disk contains 10,000 sentences in a multitude of semantic contexts, distributed over ten proficiency levels, providing a dozen didactic strategies, with the possibility to combine various aspects and communicative situations, and including error-analysis and the automated generation of remedial units. With the first program, a student can work half an hour and then he has seen everything. With the other program he can work for approximately 500 hours, spread over several curriculum years, constantly raising his performance level in ever richer contexts.

Let us suppose the first program, with its 5 little exercises, costs 20 dollars—seemingly a very cheap price for a software program. The other program, however, costs 200 dollars. In fact, the second program is much less expensive than the first if you take into account the *time price per hour* or TPH—a concept we introduced a few years ago to evaluate the market value of educational software (Decoo, 1989).
TPH is the unit expressing the price of a package in function of the time a target-student can work with it, at an average pace, to exhaust its content. In a simple formula:

\[
TPH = \frac{\text{Price of the package}}{\text{Working time in hours}}
\]

In our example, the first program, which costs 20 dollars, can be used for half an hour. Its TPH is thus 40 dollars. The second program, which costs 200 dollars for 500 hours of potential working time, has a TPH of 40 cents.

In other words, the 200 dollar program is 100 times cheaper than the 20 dollar program.

It is clear that the richness of content, already mentioned as a major characteristic for customer satisfaction, is also a vital factor for an attractive price setting.

**CONCLUSION**

Customer satisfaction should be the major concern of any commercial endeavor—and CALL is by its very nature also a commercial endeavor, even if only to provide new funds for research. But since we ask for money from our customers, the old saying “Satisfaction guaranteed or your money back” should also prevail in our case. Since CALL is a relatively new field with so many commercially inexperienced producers and customers, I felt it would be helpful, though this presentation, to try to identify some of the criteria that make customer satisfaction. I have only given some indications to help us along that way.

I could end by raising an ironical question: how many producers of CALL are using software themselves to learn a new language? In other words, do we know that the customer experiences?

It is obvious we should not try to make customers satisfied with our products, but should make products that satisfy our customers.
REFERENCES


AUTHOR’S BIODATA

Wilfried Decoo is professor of foreign language didactics at the University of Antwerp and director of the Didascalia Research Center, specialized in the development of computer-assisted language materials.

AUTHOR’S ADDRESS

University of Antwerp
Universiteitsplein 1
2610 Wilrijk, Belgium
Phone: +32 3 820 29 70
Fax: +32 3 820 29 86