Marketing ergonomics: profile of an interdisciplinary field

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1. Why should ergonomists market their profession?

The scope of ergonomics/human factors covers a broad field. In this field there are many qualities that may contribute to better work and working conditions, better products, greater productivity and so on. Ergonomics is human-oriented design of products and production systems (both materially and immaterially) taking into consideration the human capabilities and limitations. So ergonomics is the adaptation of technical parts of man-machine systems—in the broadest sense—to the human. How do ergonomists handle their field of interest? How do they present themselves, their products and their advice to clients? How is this experienced by these same clients? Is ergonomics a quality tool to use in building a profitable and well-run organization? Ergonomists think so, but often they are not very convincing or are misunderstood. Sometimes their advice seems to contradict ergonomic guidelines or regulations. They do have a way of saying 'the answer to your question depends on the situation at hand...', being not very to the point. The outside world often regards ergonomics as a melting pot of fundamental and applied research on 'human factors' with a substantial amount of common sense added. Ergonomics is practised by, for instance, psychologists or social scientists or occupational health scientists or industrial designers or industrial engineers.

In many senses the public opinion is wrong. Ergonomics is at least an interdisciplinary approach to tackling problems in our natural and technical environments. A number of disciplines are involved. That is, one person, an ergonomist, knows something about all of them. He/she might work within an interdisciplinary design or development team. It is impossible, of course, to have a thorough knowledge of all disciplines involved. Therefore the ergonomist often uses handbooks, guidelines and other disciplinary oriented publications. Alternatively, several persons add up to a team of specialists that share their disciplinary knowledge in order to achieve a human-oriented design. One might call this a multi-disciplinary approach. For many design problems a large team of specialists is too costly. This might be one of the reasons that the use of this approach is still exceptional.

If one aspect above all others is lacking in the expertise of many good ergonomists, then it is the marketing of their profession. Marketing is hard to define both briefly and completely. Marketing is commonly defined as: all business activity involved in the moving of goods from a producer to a consumer, including selling, advertising, packaging, etc. A common opinion is that marketing has only to do with selling consumer products. Although the development of marketing has its origin in that area, an increase in the application of marketing techniques in the service industries can be noted.

The problem with ergonomists is that they generally have a good product for an increasingly interested market (a market pull), but they do not know how to trade it. The awareness of this problem is growing. The International Conference 'Marketing Ergonomics' intended to speed up this awareness; the conference focused on how to 'sell' ergonomics knowledge and skills. Though a somewhat unusual topic for this journal we are convinced it is important to exchange ideas about this uncommon issue. Ergonomics should be seen as a quality tool to be used to its full extent. Applying ergonomic knowledge or consulting ergonomists should be valued as a profitable investment. The return on investment is high, isn't it?

2. Marketing ergonomics

Five years ago Glenn Gallaway presented a paper 'Marketing ergonomics: influencing developers, managers and customers' at the IXth Congress of the International Ergonomics Association. He tried to convince other ergonomists that 'doing fantastic technical work is of little benefit to anyone, if others don't have a need for, know about, and use the information developed'. He also stated that: (1) ergonomics professionals should pay more attention to *marketing* the value of their ideas and services; (2) that they have the basic behavioural skills to do a superior job at *marketing* their professional skills; and (3) improvement can be made by learning to express engineering data in terms of benefits'.

Some officers of the Nederlandse Vereniging voor Ergonomie picked up Gallaway's idea. In view of the fast-growing interest in ergonomics in society, they decided that the time was right to organize an international meeting where ergonomists could discuss how to make more of their profession, and in which way their clients could profit. The conference 'Marketing Ergonomics' took place on 5–8 June 1989 in Noordwijk, The Netherlands. It was organized jointly by the Nederlandse Vereniging voor Ergonomie (Ergonomics Society of the Netherlands) and the Ergonomics Group of the University of Twente.

It was the aim of the conference to make an inventory of positive and negative experiences—in applying human-factors knowledge—of ergonomists as well as others. How can an adequate and efficient input of human factors be achieved? Hence we tried to arrange a discussion between 'suppliers' and 'buyers' of ergonomic know-how. The structure of the conference was a mix of plenary sessions, parallel sessions (formal paper presentations, structured discussions and workshops), sessions on-site and poster presentations. Sessions on-site can best be seen as parallel sessions on an industrial/technical location with an opportunity to visit some ergonomically designed men-machine systems.

Emphasis was put on maximizing the time available for group discussion and for informal exchange of experiences among participants. About 110 participants joined the meeting and discussed the marketing of the ergonomics profession. We aimed at the participation of managers, designers, occupational health officers, safety engineers, development and engineering staff, representatives of employers' and labour organizations and ergonomists. The response on the call for papers was high (about 80 contributions) and of good quality. However, the marketing of the conference and its aims to potential participants proved to be difficult, especially with a limited budget. We tried to find and contact international organizations of the professions mentioned above. Ergonomists are relatively well organized in the International Ergonomics Association. For the other professions (except designers) it proved to be difficult to find

the right sources of information, the right journals to publish announcements in and to establish cooperation. Nevertheless, we ended up with a stimulating mix of ergonomic researchers, human-factors consultants, manufacturers, project managers, some marketing specialists and occupational-health-care officers. All of these were highly interested in discussing the conference subject. There were numerous interactions between participants even outside the session rooms.

3. Ergonomics and marketing

There seems to be a lack of case studies on the benefit of ergonomics in design, implementation and evaluation of products and production systems. Moreover, we have the feeling that misses in the early stage of the design process are seldom critically discussed. Not every project manager, safety manager or other person in an organization is allowed to speak freely about it. These failures and decision errors, if well identified, are a good starting point for ergonomists as well as for others in new and comparable projects. Nevertheless, we think that the papers in this issue are good examples of what is going on in the field of ergonomics. Chapanis reflected in his keynote address (Part I) on the history of ergonomics. We cannot deny that a great step forward has been taken in the tradition of good research. Ergonomists are, in essence, providing services. Service organizations can no longer take it for granted that people will ask for their products. Nowadays there is a need for a 'professional' approach from service groups. In offering service one has to deal with aspects like: How long does the execution of the service take? What does it cost? and What are the benefits? Such an approach may not be expected as a natural habit of, say, an ergonomist. Still, such a person may realize that the application of marketing principles can ultimately lead to:

- (1) greater satisfaction of the clients; they know what they may expect from your submitted quotation and can easily compare the actual outcome with promises in the offer;
- (2) more efficient approach to the market; your offers are well specified and communication lines remain relatively short;
- (3) the service officers receive well-defined tasks and responsibilities, so internal communication lines are better specified; and
- (4) exceeding of time bounds is detected earlier and can probably be better managed.

Marketing and entrepreneurship do not belong to the work style of the majority of ergonomists, at least not yet. When adopting a marketing attitude some novice mistakes might slip in. Not presuming to be experts, we can think of several problems.

- (1) Many ergonomists insist on using their scientific knowledge rather than meeting the actual, practical, needs of the customer.
- (2) If ergonomists are human-oriented designers, then a customer-oriented approach should be easy to realize, right?
- (3) Ergonomists are easily apt to work from the principle of technology push, instead of from the approach of customer pull.
- (4) The ergonomist becomes a salesman of services that look alright on paper, but cannot be supplied within deadlines set by the customer.

Hence, how do we guard the quality tools of the ergonomics profession? These, and many other issues, are discussed in the contributions to 'Marketing Ergonomics'.

4. 'Marketing Ergonomics' and Ergonomics

This, and the subsequent two issues of *Ergonomics*, have been given over in their entirety, to presentations at the conference. This issue contains Parts I–III; the April issue Parts IV–V; and the May issue Parts VI–VIII.

Part I contains the opening sessions of the conference. The opening statements, keynote addresses and statements by representatives of sponsoring companies were aimed at supplying some controversial thoughts on marketing and buying or selling ergonomics.

In Part II the topic of buying and selling ergonomics is elaborated by consultants and buyers of ergonomics expertise. The last contribution within Part II summarizes the session on-site at Netherlands Railways. Part III contains six papers from the area of occupational health care. The summary and prospects paper by Nordin and Dul, presented at the end of the conference, concludes Part III.

In Part IV McClelland introduces and reviews nine contributions on industrial design and engineering from a marketing perspective. Stewart does the same for the six papers on information technology in Part V. These evaluative contributions of McClelland and Stewart were also presented in the summary and prospects session of the conference.

In Part VI the role of ergonomists in the design of products and production systems is discussed in six papers and a report of the session on-site at Hoogovens (Ingredients of Ergonomic Intervention: How to Get Ergonomics Applied).

Finally, Part VII 'Integrating Technical and Organizational Design; Methodological and Managerial Aspects' is a compilation of conference papers, a workshop and the session on-site at the Esso Refinery Rotterdam.

5. Organizing marketing ergonomics

Organizing a conference, especially one titled 'Marketing Ergonomics', leads to a few observations. There were about 20 participants when Glenn Gallaway presented his Birmingham paper in 1985. One of them, Ernst Koningsveld, initiated organizing this conference. Four years after Gallaway's presentation 110 participants were convinced of the usefulness of an international meeting on marketing the ergonomics profession.

The organizers developed a model of how a 'Marketing Ergonomics' conference should look. A conference should be adapted to its 'users'. Amongst others we gave feedback as much as possible to contributors and programmed a summary and prospects session. The final results of these activities are published in the three issues of *Ergonomics*.

We tried to design announcements, registration, accommodation, and so on, conforming to ergonomic guidelines. It turned out to be difficult to keep on this track, while it is tempting to organize a conference as it is usually done. Also, potential participants make it very difficult—about 50% had trouble in filling in registration forms, and for those delivering a paper, in reading the authors' guide. Where did the organizers or the participants go wrong?

Perhaps it sounds unfriendly to some of the contributors, but as there are some marketing aspects involved, a few observations are given below:

- (1) Some overhead sheets were copied from typewriter text, or
- (2) overhead transparencies were written in badly chosen colours; and
- (3) papers were delivered so late that they could not be included in the preprints, or
- (4) papers did not meet the specified format.

Concluding our remarks on the organization, we thank our fellow organizers who did a terrific job in keeping a good team-spirit alive and our sponsors that were very much convinced of the conference aims. Also we thank the International Programme Committee members, J. Bernsen, I. McClelland, G. Johannsen, B. Lindqvist, M. Nordin, G. E. Pfaff, J. Roukens and T. F. M. Stewart for their efforts. Finally, we thank the participants who have, despite our critical remarks, made the conference a step forward in 'Marketing Ergonomics'.

6. A general summary and prospects on marketing ergonomics

Though not admitted easily by the organizers of scientific conferences, there are a lot of conferences where you hope to find just one good presentation, the results of which you can use in your own work. We have the feeling that most of the contributions to these issues of *Ergonomics* are above 'average' and/or have a high level of applicability. If the reader of this issue has got the feeling that the close to 250 pages of text reflecting a four-day period of intensive communication is a small but true contribution to the marketing of ergonomics we have been successful in our aim.

A number of general conclusions can be drawn. During the conference there was discussion of the need for an ergonomics hallmark (see also the keynote address by Dirken). Probably there is a need, but we are not yet ready to substantiate it.

Another question concerned the registration of ergonomists. This topic is being discussed in several countries. It seems to be very difficult to give definitions of what an ergonomist is or does and, ultimately, what qualities are to be required for registration.

Ergonomists do not realize clearly enough that there is a difference between products (including its users) and production systems (human-machine systems). They should be aware of what they are talking about and make that very clear to the person who wishes to buy an ergonomics service.

Without further comment we quote Geoff Simpsons' statement (see his keynote address in this issue): 'there are *no* ergonomic problems; *you* (as an ergonomist) have ergonomic solutions for problems of management'.

In preparing the conference programme it was understood, or perhaps a goal, to include organizational design and management (ODAM) as an important issue. Closely related to this are systems design and macro-ergonomics. With reference to the last part 'Integrating Technical and Organizational Design', the importance of a macro-ergonomics approach (that is including work content and work organization in an ergonomic approach) is illustrated, as compared with the 'knobs and dials' ergonomics. It was concluded that it is now possible to apply macro-ergonomics and systems design in practice, rather than just discussing this topic. This conclusion also strengthens the need to work in what might be called 'multi-interdisciplinary' design teams as well as to market this issue. It is of great importance to keep on developing this area further. Within this context there is a strong need to use the same definitions for terms like system, system boundaries and the boundaries of our own capacities. These definitions should be clear and understood by all those involved in ergonomic activities (managers, users, ergonomists and engineers).

Ian McClelland concluded (see his introduction to Part IV): 'We ergonomists have to change'. Ergonomists have to do better in their marketing and they can start right away by spending adequate time in preparing presentations and so on. Next there is a strong need to market our approach and the benefits of it. Ergonomists know they have to speak the language of the users, but often forget to learn the language of a special group of users or participants in a multidisciplinary design team: 'managers'.

'Marketing Ergonomics' was announced as a once-only event, unique in itself. Nevertheless, it is appropriate to pose the question whether it is necessary that there should be a follow-up session to discussing this topic. The least we should do is to spread our knowledge of the conference 'Marketing Ergonomics' and to monitor progress and developments. The special edition of *Ergonomics* is a good start.

Finally, we thank all those involved in organizing this conference, the participants and sponsors for their active and valued participation in the conference. Remember your marketing and remember there are *no* ergonomic problems.