

ETHICS - Experiences in e-Tendering

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Abstract : ETHICS – Electronic Tender Handling, Information & Communications System - was developed jointly by the Danish National Procurement Agency (SKI) and the IBM Business Partner, [inno:vasion]. Since 2003 the solution has been fully operational and covers all aspects of public tendering according to the EU Directives. Due to its multi-linguistic capabilities and adherence to international standards, this solution is now being offered to similar organisations in other countries in a joint effort with IBM. This paper covers technical aspects of the solution, the experiences in Denmark and from the pilot tenders run by the Portuguese Government.

1 Introduction :

National Procurement Ltd. Denmark (SKI) is owned by the Ministry of Finance and the National Association of Local Authorities, Denmark. SKI's mission is to co-ordinate procurement, perform tenders, and negotiate a framework for contracts on behalf of all Danish Public agencies according to the EU Directives on Public Procurement.

Since 1995 SKI together with the IBM Business Partner [inno:vasion] has developed and implemented ETHICS, an electronic tendering solution which has trimmed workflows, procedures and the size and complexity of the organisation involved in this process. The system has been fully operational since last year and covers planning, drafting and publication of tenders, management of all associated processes, issuing and running online tenders in a secure way using the newest collaboration technology and digital certificates; and also assisting in the final decision and award process as well as supporting team rooms for external specialists, advisors and users.

The impact of the solution in SKI has brought about fundamental changes:

Productivity has more than doubled, so that twice as many tenders are being run annually using the same number of staff.

Quality and transparency has improved with the effect that there have been no complaints or legal claims raised by vendors

The **standardisation** of the knowledge base used in running the organisation has meant that despite a staff turnover of 50% over the last 4 years, new staff have adapted to the system easily and there have been no delays or disruptions to services.

In 2003 ETHICS was nominated as one of the top 5 solutions for the eEurope contest on best practices in eGovernment. It was the only tendering/eProcurement solution in Europe to achieve this. Since 2004 SKI and [inno:vasion] has entered an agreement with IBM to market and service ETHICS on a global scale. Through this co-operation IBM Portugal has successfully tested ETHICS for 2 major tenders with the Portuguese Government and the Portuguese Ministry of Justice. A number of current cases are currently under evaluation around the World.

During the presentation we will make a brief demonstration on how to create an on line public tender using standard documents and forms from SIMAP.

2 Background

In the public sector goods and services represent considerable expenses in the total budget. If public procurement is done with care, a lot of money can be saved. However, the buying process has become increasingly complex. New tender and competition regulations are being issued constantly and increasing demands for documented quality, price, delivery, and environmental and energy controls.

National Procurement/SKI has a great commercial expertise in the many terms and conditions that complicate public procurement. We create an obvious benefit to society by ensuring that the almost 20,000 public buyers do not buy a pig in a poke, and avoid using time and efforts on making the same investigations, evaluations and negotiations. National Procurement was established with the defined goal to secure the public sector savings and benefits through better prices, safer purchases and more efficient working processes.

We want to be leading within the development of framework agreements with suppliers who sell goods and services to the public sector. Our background is a great commercial expertise in procurement as well as know-how on the special buying conditions characterising the procedures for public decision-makers. SKI aims at being a strong partner to all public buyers as well as suppliers to the public sector and offer experienced and skilled acting.

In order to achieve these goals, SKI has constantly endeavoured to trim the organisation and exploit technological offerings where it makes sense. When in 1995 the organisation was first faced with the task of making a framework for all governmental purchase of PC's and PC equipment for 3 years, the traditional way of doing public tenders almost brought the organisation to it's knees: 36 Vendors answered by delivering more than 30,000 pages for evaluation of very different quality, stressing the manual decision process.

This experience started the search for better ways of doing things. After 2 years the first version of the tendering solution was implemented with the following short term objectives:

1. It should be able to work with the existing office system selected to minimize training and conversion.
2. It should be possible to manage a number of concurrent tenders and check status.
3. It should provide buyers/specialists with all existing knowledge and documents available from earlier tenders.

In order to standardize questionnaires and criteria:

1. It should be possible to receive bids from vendors and extract answers for input into a decision process.
2. It should be an open, transparent process following the EU directive to the letter.
3. The vendors should realize that an effort was being made to simplify as much as possible.
4. Fair and open process, no complaints or legal issues with vendors (or end users/buyers).
5. The end users, buyers in the govt. agencies, should be able to influence the decision process.

When implementation started, further aspects were added. The long-term objectives of using the ETHICS – Electronic Tender Handling & Information Communications System - approach should be:

To support the Danish Governments drive towards eGovernment, - particularly within eProcurement.

To support the EU eGovernment initiatives.

Implement secure on-line tendering using the EU directive on digital certificates.

Leverage contacts and linkage with initiatives for on-line procurement in local government as well as on the national level.

3 Implementing ETHICS

When the initial development was started, it was stated that the ease-of-use of the system also meant that the training program needed to bring the buyers/consultants as well as the managers on to the system had to be limited. The first version of the system was developed and presented in 1998, and following a demonstration and a half day introduction, the employers accepted the system and used it. The incremental implementation model proved successful, and the same experience was realized when the Online secure tender room was first opened to vendors for participation during a SW bid in the autumn of 2002: Only a few email questions and everybody was on board, even if the use of digital certificates at that point was completely new to all participants.

Only when we started to launch the online tender modules did we realize that it would be worthwhile for our peer organisations to study our approach and best-of-breed solution, and so we decided to go for more publicity. In this respect we were helped by the EU-sponsored analysis on eProcurement systems in place in Europe, that was performed in the spring of 2002 and which pointed towards ETHICS as one if not the only one of it's kind in Europe. Later in May we were invited to New York to present the experiences of ETHICS to a large community from a number of countries under the World Bank leadership. Since we signed an agreement with IBM to assist us in marketing the solution internationally, we have had a number of visitors from various countries and many are at this moment evaluating how they should start pilots.

The reorganizing of the back office is a must in most cases, like in ours, where the major benefit of mapping out procedures and processes is to build on the strength of the employees and extract the best available local knowledge and get rid of individual ways that may not be very helpful to colleagues nor very productive qualitatively or quantitatively. During the implementation phase we tested each step separately, first simply publishing information on the web, then making it possible to download diskettes with questionnaires, and then taking the final step and opening up the Online, web-based tenders.

We believe the solution is extremely innovative, it was one of the very first to demonstrate clearly the use of PKI in practice, it is the first to demonstrate use of secure virtual team rooms, it is one of the first to demonstrate how Intelligent assessment tools can be used to reduce the complexities of the decision process and one of the first to solve the problem of multilingual support. Managing eGovernment implementation the way we managed the implementation of ETHICS is clearly also of interest outside the narrow scope of eProcurement.

ETHICS helps to coordinate the tenders between different levels of government and between agencies. The requirements collection phase and the market research phase make it possible to share the knowledge with key users or user groups before starting to draft the call for tender. Directly and indirectly ETHICS helps towards removal of barriers to pan-European procurement services, partly because of standardizing the EU directive in an easy-to-use way, partly because the communication/publishing of tenders are made automatically, and partly because of the multilingual possibilities offered. This will help attract vendors to major bids across the old borders of Europe. By implementing ETHICS, the role of the buyers/specialists in the organisation has become much more visible, and delegation of authority has led to job enrichment for these specialists. This has, on the other side, also led to the point where some of the former, traditionally oriented public servants preferred to step down, as their job content changed considerably. This is a challenge and a careful balance has to be demonstrated by management.

Risk management is of course of great importance when working with major bids, some of which are very strategic and all of which are very visible. Even if Denmark has a very fine reputation of no fraud and a transparent administration, it is the key decision point for the success of any tendering system that it is completely transparent in all aspects, that decision criteria are clearly published and clearly and demonstrably used in the evaluation based on the original input from the vendors. Since the introduction of the first tender based on diskettes & templates, we have had no complaints from any vendor, as results and reason for results in all cases could be clearly demonstrated. This has further increased the belief in a well managed, neutral and efficient organisation.

4 Technology

The ETHICS solution was developed over a period of five years as a result of a very productive co-operation between the technical specialists, a small IT service company called [inno:vasion], the specialists in SKI and the experts in the various fields of procurement. The assistance of and review by the Danish official legal advisor was built into the final solution. The combination of skills and the commitment by SKI management as well as the SKI Board, was also an extremely positive factor, as it enabled management and developer to discuss possible changes in procedures and traditions, leading to a business process redesign that went hand in hand with the systems implementation. Thus the system is designed to fulfil needs of management, specialists, end users, vendors as well as controllers and auditors. This makes the ETHICS solution quite unique.

The ICT platform selected was centred around the IBM Lotus/Domino solution, as it contained a lot of the required basic functionalities for different views across multiple databases, support for workflows as well as for locking and protecting data, using encryption

where needed, and also because Domino has the capabilities of producing a webservice both for intranet users and for external internet users through adequate firewalls. In the case of SKI the organisation was already using Microsoft outlook for normal document handling, emails, letters etc., and the standard documents produced in this way were easily transferred to the databases controlled by Domino. The internal users simply open a browser window to access ETHICS. This means that no special hardware requirements are put on the workstations as long as they are equipped with java enabled browsers.

A short summary of the technology deployed in ETHICS:

Open standards used wherever possible. The ETHICS core system can be run on NT, on Linux or other platforms supporting Domino. The clients only need to have a browser that supports Java, so in effect anybody can log on to ETHICS.

Multiple access points still have to be available for some tenders, where it will not be possible to maintain the requirement that all vendors will access ETHICS online. In most relevant tenders we aim at enforcing the use of the Internet as a requirement. For disabled persons the ETHICS system, although with an excellent graphical interface, can also be operated by blind people using audio feedback.

Scalability: The system is highly scalable, it only depends on how many hardware servers you want to install in any cluster. The intranet solution is likewise capable of supporting installations with several 100 buyers.

Open Access tools: The multilingual part most especially, has been tested extensively, and all menus, tables, standard information are table driven, which means that the choice of language in your browser will invoke which table set should be shown. In this way even multilinguistic organisations (in Belgium for instance) will be able to use the same system. Translation of the basic document, however, is outside the scope of ETHICS.

Open Source based solutions are deployed using Tomcat and Apache, both extremely well known in the Open Source Community.

Through SKI's technology partner [inno:vasion] and the relationship with IBM, ETHICS is also positioned for the new generation of Workplace software and *webservices* environment in a *Service Oriented Architecture (SOA)*. ETHICS can also be invoked as a so-called portlet in a Websphere portal environment.

Successful *use of PKI* was first tested in the autumn of 2002. This was a necessary feature to secure the communication between the individual vendor and the procurement agency during the tender, and also for the vendor to sign the proposal and send it in an encrypted version to the SKI tender box. Even if the system is designed to standard EU PKI implementation, local differences in implementation can be handled through minor modifications of the plug in needed for signing and for encryption. For special tenders, where participants' identity needs to be kept anonymous to SKI and the evaluation team, an independent third party may act as a registration authority and issue the tender specific key that needs to be associated with each vendor.

It has constantly been advocated by the SKI management, that as much as possible should be based on *standard software*, so the balance between customized/turnkey solutions and

standard solutions seems to offer best opportunities for constantly adapting the system to newest developments, including open source. The use of standard components like Lotus Quickplace, a standard Lotus tool for establishing and organising virtual meeting rooms, the use of Adobe/PDF (Portable Data Format) was chosen as a standard for the tool that has been developed for creative creation of questionnaires. The use of standard components to extract data and secure conversion to open formats, such as XML, HTML is also of great importance.

It has been a critical design point from the beginning to ensure the *confidentiality* of the Vendors material and data. This has led to our strong recommendation, that the vendor does not fill in any questionnaires while he is on line, but downloads the questionnaires, completes them and audits them within the confines of his own intranet, and finally protects them by signing and encrypting the proposal before uploading. Once the proposals are uploaded, they are kept locked until the deadline, when the tender box closes for outside access and opens for named officers, responsible for handling and evaluating. From then on, the answers cannot be changed, and all actions are logged. All personnel related information is subject to the Danish law of Data protection and logged and audited accordingly. The website itself is protected using the newest technology for firewall protection and access management using the Lotus secure system.

5 Benefits from using ETHICS

The practical, directly measurable results and impact at SKI of using ETHICS can be summarized in this way:

Productivity more than doubled as a result of implementing ETHICS: in 1996 20 major tenders were managed by a staff of 9 specialists and 20 admin employees. In 2004, 45 major tenders were handled and more than 80 ongoing frame contracts covering more than 2 billion individual articles/line items of different products or services. The tenders for frame contracts cover all sorts of goods and services, from complicated management consulting services, integrated office systems, telephony services for the public sector from mobile, fixed net to IP telephony, furniture, oil, travel, automobiles, food and beverages, stationary, paper ...

Growth in turnover has reached more than 36% year over year since 1998 indicating increasingly happy customers (the 8500 public agencies buying on the SKI negotiated contracts)

No complaints or legal issues with vendors since 1998. This is not only a soft quality measure, but definitely also a significant financial benefit, as the costs and business damage incurred if any complaints had been made, could have been quite substantial. Quite apart from the cost that would occur in most countries, where it is common practice to stop the procurement process from taking place if any vendor complains.

ETHICS has proved that it is *preserving and re-using the organizational know-how* in a very productive way: During the last 4 years, 50% of the staff has been changed without any disruptions or delays in plans.

Among the qualitative improvement we should mention:

Easier involvement of end users/potential buyers as advisors early in the planning process.

The closer we get to correct understanding of requirements, the easier it is to concentrate on strategic items and the more business and thus savings will be generated from the contracts negotiated.

More efficient use of experts in the evaluation phase as well. The use of group/collaboration oriented technologies makes it easy to demonstrate real differences in scoring and pinpointing significant differentiators between offerings.

Efficient management control system avoids delays, secures quality of process and adherence to EU regulations.

Demonstrated *use of digital certificates* and electronic security is helping to break down barriers in attitude among private vendors competing for public orders. This again is helping to increase the internal competitiveness of the vendors, that have participated in SKI tenders.

By following the EU regulations strictly, SKI has demonstrated to other countries the value of an *open and transparent procurement policy* as well as a role model for on line tendering and publication of awards.

The *staffs' working conditions* have improved and are still improving based on the re-use of intelligence, legal conditions, questionnaires and other supporting document.

6 Lessons learned - Conclusions

The visibility of the ETHICS solution is now increasing dramatically since it has been presented in 2003 not only to the World Bank constituency and at the EU-conference on best practices for eGovernment in Como, Italy, but also in major meetings in IPPA , announced through global marketing activity by IBM, Lotus and business partners, but also because of active participation in the dissemination process by key officers in IAPSO, The UN International procurement Agency located in Copenhagen. Since last year, more than 70 major demonstrations have been performed and approximately 200 additional country organisations, regional authorities or individual authorities have heard about ETHICS.

In May 2003 the ETHICS solution was invited as one of the key items at the annual Lotus Government Global Forum in Stockholm May 4-7 for 400 key government officials from around the Globe. The solution has been installed at the IBM Government Demo Centre in Berlin since January 2004 and more than 10 countries/organisations are currently (February 2005) evaluating ETHICS.

Since 2003 ETHICS was also offered as a service to organisations in Denmark that wanted to develop and run their own tenders on the system without support from the SKI staff of specialists. This was the case for a major public tender on Document Management systems performed by the Danish National Association of Municipalities in the autumn of 2003, and during 2004 for 2 major health related bids on Electronic patient Journals. In these cases the county association of Denmark and a large Danish County used ETHICS as a tool to specify decision criteria, issue on line tenders and evaluating responses using the ETHICS methodology. In all these cases the feed back was extremely positive and the users claimed they had reached decisions much faster and more efficiently than they had expected and clearly compared to traditional processes.

During the autumn of 2004 IBM Portugal together with the UMIC organisation in Portugal, (UMIC is responsible for executing the eGovernment action plans for the country) signed an agreement to run up to 5 major tenders on ETHICS. At this point the first was concluded successfully by the Ministry of Justice, Portugal, in December, and the second tender is now in it's final phase. Especially the second tender is a major, complex tender for computer equipment covering a lot of different brands and functions. Like similar Danish bids, this will typically involve approximately a hundred vendors and we believe more than 500.000 pages of responses.

The lessons learned especially in Portugal was that a critical walk-through of the existing processes and a thorough dialogue with legal experts ended with the result that ETHICS procedures and methods were in complete compliance with Portuguese legislation – and that a special Portuguese opening procedure was possible to follow – even in an on line environment.

The Portuguese case proves that it is indeed easy and straight forward to make the necessary translation in very limited time, and that the investment in education of the specialists, buyers and technical administrators, could be fulfilled within a few weeks.

The key learning points are that the ETHICS solution is a highly transferable solution that can be adapted directly to all European countries following the EU directive and supporting also local deviations in use of the Public Key Infrastructure with minor adaptation costs. Due to its support for multiple languages, it may be well suited especially for candidate countries that want to encourage international participation in tenders for their infrastructure. But also for all countries that have to adhere to the WTO regulations for fair and open public procurement may benefit – especially also because the use of ETHICS' language facilities will ensure international participation in the tenders.

Currently we are handling requests from many countries also in the third World, where compliance with open and transparent behaviour is mandatory to obtain international financing. Apart from national procurement organisation we have found a major interest for the project in large organisations like the Defence, Police, Social Security, Healthcare - where clear regulations and transparency prevails, and we have also found interest to apply the solution in an ASP application service provider environment, where a number of small communities/cities could benefit from the imbedded skills without having to hire expensive consultants or specialists.

As such we believe that this kind of tendering will be a necessary first step towards creating value-chain integrated public procurement eMarkets on an international scale