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ORGANIZATIONAL REVIEW

Replacement of the Organization's accounting, financial and budgeting systems by an Enterprise Resource Planning (ERP) system

Submitted by Brazil

SUMMARY

Executive summary: This document comments on the information provided by the Secretary-General in document C 89/11/Add.2 and draws the Council's attention to the weaknesses of the ERP system solution being proposed.

Action to be taken: Paragraph 8

Related documents: C 89/11/Add.2

1 The annex 1 to this document comments on the ERP system being proposed by the Secretariat and clearly shows that the ERP system is highly costly, complex, very difficult to implement and not appropriate for Organizations like IMO.

2 Regarding the procurement process, it should be noted the short period given (two weeks) for the invitation for pre-qualification for eventual bidders to submit their complete proposals. The time given was clearly insufficient and certainly precluded the participation of other interested firms, including some from Brazil. (Request for proposals dated 19th July 2002, proposals to be submitted by 12 noon on Monday 5th August 2002).

3 That process started by requiring a specific type of solution, namely a ERP system, instead of stating the problem to be solved and asking for solutions to be presented for analysis, which prevented the consideration of other proposals that could be more suitable to the case.

4 The analysis presented in annex 2 of doc C 89/11Add.2 concerning the Brazilian proposal is superficial and inaccurate. Regarding the risk management requirement, for example, contrary to what was stated, the system proposed by Brazil has been tested successfully in the Brazilian Navy for many years, running a budget and a financial planning systems much bigger and diversified than IMO.

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5 The maintenance of the system was also pointed out as problematic, based on the assumption that the IMO would have to rely on ongoing support from the development team or it would have to develop its own in-house capability. Brazil stresses that the support and maintenance can also be included in the Brazilian offer and the related costs will certainly remain far below the SAP ones.

6 In summary, although rejected by the Consultants before the 88th session of the Council as unsuitable, they reveal that since that time and up to now the Brazilian proposal is still not known to them and that they did not seem to have made an effort to get to know it either, despite the fact that the Brazilian Government was available to answer any questions and provide any demonstration required. While reading the complete analysis presented by Deloitte & Touche to the Secretariat, which constitutes annex II to the current document, we get the impression that, from the beginning, only a ERP solution offered by companies close to the IMO location would be considered (Annex II page 3 – “Uncertainty about arrangements for support :...This arrangement would then need to cover UK hours and long-distance travel if required”).

7 As a final comment, the capacity for dealing with IMO’s main problem, i.e. the broad spectrum of planning and programming different subjects in several areas of interest and its subsequent budgeting and controlling, allowing for the follow up by its Governing bodies and Member States, was not demonstrated for the proposed ERP system.

Action requested of the Council

8 The Council is invited to carefully consider the comments in this document, taking into account the lack of certainty regarding the selection of an ERP system as the only possible solution to the IMO needs, particularly with regard to the planning and programming mechanism and to compare the investment required for different solutions, and decide as appropriate.

ANNEX 1**COMMENTS ON THE SECRETARY-GENERAL'S NOTE IN ITEM 11 OF THE
AGENDA FOR THE 89TH SESSION OF THE IMO COUNCIL****Main text**

The document tries to build up a case for the adoption of SAP, a widely known market solution for ERP. The comments were prepared following the document's sequence.

In paragraph 4, the ERP is presented as the solution to many IMO problems, such as multiple data-entries, multiple data-storage, etc. If an ERP system can solve those problems, any custom-built solution can do the same, as long as the user requirements are carefully established and implemented. Also, in paragraph 5, the document states that "The key to the selection of the preferred ERP supplier is therefore its capability to use best practices in process design..." This should be the key for selecting any supplier, be it ERP or not. The Brazilian Navy, as a responsible organization, demands such requirements for every system it develops or acquires.

Paragraph 10 states "One of the key elements in the success of the ERP solutions is in the involvement of all users to engender a sense of ownership and commitment to the new work flows and processes." Actually, this has also been the reason for unsuccessful ERP adoptions, as it demands huge changes in the organization. An adoption of an ERP system precludes organizational changes, since the packaged systems cannot be fully adapted to the organization's needs.

Paragraph 14 shows a basic cost of approximately £2m. Yet, this does not include either HR or payroll. This value is well above the one presented by the Brazilian Navy to deliver a custom-built system (£0.7m).

Since the IMO has its own IT Division, there seems to be no need for contracting external consultancy to verify the execution of the project. This should be the responsibility of the IT Division, as it is in most government and private sector contracts. No one should know better the impact of any project decision on the organization than its own personnel. By the same token, no one should be more concerned with the project success. It is almost a contradiction for the organization to claim total commitment and, at the same time, hire an external consultancy firm to verify the execution of a project in the Organization itself. Are the personnel going to reach a level of commitment that will not allow for the monitoring of the project? Besides, there is an added complexity brought by this approach, since IMO would have to deal with three separate organizations, i.e., the management consultancy, the implementation consultancy (Fast-Track) and SAP. [SKOK2001]

The UN-specific HR presently being developed by SAP is as abstract as a custom-built system may be. IT is still only a promise, and a pretty "futuristic" one. If, half way through 2002, a HR package, is promised for the beginning of 2004, it probably does not exist, and its development is yet to begin. It is important to note that paragraph 15 accounts for a "...certain amount of consultancy..." required to support the implementation of this promised package. Since it does not exist yet, it would be more correct to say that an uncertain amount of consultancy would be required.

Paragraph 16 says, when comparing the ERP option with the Brazilian offer, that the Brazilian offer would be a "...more-custom-built approach...". There seems to be some kind of misinterpretation there, since an ERP, like SAP, is not custom-built, but an off-the-shelf solution, that requires a great effort in its adaptation for a specific organization.

While paragraph 19 stresses the successful implementation at UNICEF and WFP, there are many cases of failure or troubled implementations in the literature, such as Hershey Foods (accounted for a US\$ 120m loss), Fox-Meyer and Dell Computers [SKOK2001].

Annex 1

The business case for the investment on an ERP system is also a business case for investing in a custom-built solution. However, some remarks are necessary on the arguments presented.

Paragraphs 6 and 8 can give the impression that ERP would be the best solution, saying: "...continue reliance on a number of small providers for systems increase the risk..." While this can be true, it is also true that the reliance on one, and only one, system poses a great risk to the organization [VOGT2002]. Also, while the departure of a supplier's key staff can be a problem, the reliance on a single one can be just as bad. The adoption of a custom-built solution provides the possibility of integrating small systems, which attend to specific activities, with a core custom-built system, this way reducing the overall risk. It should be noted that integration is a key area in IT today, and many companies deliver excellent solutions for systems integration, e.g., IBM with its WebSphere/Tivoli technologies and IONA with ORBIX, a leading CORBA tool. Also, attention should be drawn to personnel. While concerned with the departure of a small provider's key staff, IMO runs the risk of seeing the departure of its own personnel. As found in Chang et al. research, 56% of SAP customers complained of issues regarding knowledge management, i.e., difficulty to retain people with SAP skills due to market pressure. [CHAN2000]

While in paragraph 11 the ERP investment is said to break-even in 5-10 years, a broad time range, this can only be true if the implementation/deployment is successful, and after it is completed. It is also important to realize that the implementation/deployment may be delayed, since findings from the Gartner Group show that 32% of ERP projects run late [SKOK2001].

The best practices implemented by ERP solutions, as said in paragraph 12, are quite risky. There are a number of articles that present the problems associated to this path, such as "Cultural Fits and Misfits: Is ERP a Universal Solution?" [SOSI2000], where the case for cultural problems is set. This aspect should be given very special attention by IMO, a tower of Babel by its own nature, since its body is filled with personnel originated from diverse cultures and backgrounds. Skok and Legge also draw comments on this issue, in the context of a real ERP implementation in a British company, where cultural differences arose mainly because SAP is developed by a Germany based company, and therefore carries best "German" practices, which are different from its British counterparts.

The financial benefits of using ERP that are presented in paragraphs 13 and 14 are somewhat questionable. How could a financial gain be established on Table 1, if, in the same paragraph, it is stated that there were no metrics set? Besides, if it is possible to agree upon the figures presented, they should be the same as in the case of a custom-built solution, tailored to the exact IMO requirements. Still on the financial benefits, how can the amount needed to upgrade and integrate the systems presently in use be so high and not improve the way the

Organization works? Surely, the adoption of an ERP or a custom-built solution would save the money that would be needed to upgrade and integrate the legacy systems. But, on the other hand, if the decision was to keep the legacy, and upgrade it, there would be benefits to IMO also, although in a smaller scale.

Under the title “Quality Improvements and Unquantifiable Benefits”, the improvements and benefits described shall also occur in the case of the adoption of a custom-built system. As an example, if the Brazilian Navy Planning and Budgeting system does not provide a tight control on transactions, how can the Brazilian Navy budget planning and execution be done?

On “Platform for Ongoing Improvement”, the same question arises again, i.e., where is an ERP solution different from a custom-built one? If any, the difference could be perceived from paragraph 21 itself, where SAP is said to be constantly updated. While this may seem wonderful, it brings together several terrible implications:

- Being the system constantly upgraded, IMO would be trapped in a life- time maintenance contract (cost!!!) and, even, sometimes would be forced to change its SAP version due to the discontinuity/obsolescence of the one in production. If this may look like a simple and regular process, one should remember that to meet the Organization’s needs, SAP should be all customized, and so, at each big upgrade the customization would have to be redone.
- A study about ERP implementation in the Public Sector [CHAN2000], noted that 52% of the respondents said SAP’s high frequency of upgrades put a “*large burden on system maintenance.*”
- Many companies, now using ERP, are getting ready to move to ERP II, the new “standard”. This change, besides its associated high cost, will demand a severe increase in personnel workload.

Annex 2

Annex 2 starts with a doubtful assumption. It says that the Council requested a thorough analysis of the Brazilian offer, to check whether it meets IMO requirements. And then, names it “Analysis of Alternative Means of Delivering ERP Functionality”. This seems to be an enormous misinterpretation. The Brazilian Navy has never offered an ERP solution, nor believes it is the best choice for IMO. Instead, it has offered to provide a custom-built solution, whose development would be based on and derived from a well tested and tried system, that has been in production, considering its upgrades, for more than 10 years, and is itself based on a budgeting and planning procedure established, evolved and successfully used by the Brazilian Navy for more than 20 years. Its success can be realized by noting that the system and associated procedures have been adopted by the Brazilian Air Force, and was the basis for the development of a similar system for the whole Federal Government. It, then, continues on paragraph 3, trying to underestimate a custom-built solution, comparing it with a “...standard, tried and tested packaged ERP ...” This leads to several questions: How can an ERP system be standard, since there are, just to mention the most important ones, competitors like Baan, J.D. Edwards, Peoplesoft and Oracle in the same arena, making their specific implementations? Is it possible to try and test an ERP solution, which is integrally customized to each specific customer, since the standard package is committed to flexibility, before it even exists? Or, would an Organization run more risks when implementing ERP than a regular, well-known, development process? It is possible to consider Skok and Legge findings that “...*It is clear that an ERP project is far larger than the biggest IT project.*” [SKOK2001]. This subject is again analyzed in the next paragraph, where a comparison table is drawn. Without any substantive evidence, the custom-built solution

is said to be more risky. That is understandable, if the response from the Fast Track/SAP, in the next cell, is read: “Standard, packaged solution requiring a degree of configuration...” It lacks, though, a better qualification of the degree. A qualification can be found on Vogt’s paper: “*As ERP systems are built to serve many different companies, they are poorly customized to any particular one...History has shown more than once that customization of ERP software typically involves much effort, often far more than originally anticipated.*” Yet, it shall be taken into account that an ERP system is an evolution of the MRP (Manufacturing Resource Planning), which is clearly a kind of system targeted on large enterprises, usually involved with manufacturing or sales. IMO, with its 300 staff and a relatively small budget does not seem to fit this profile. Actually, as shown before, the IMO profile, with its very specific characteristics, is more tailored to a custom-built system that can be adjusted to its exact needs, than to an ERP, that would require an enormous effort for its adaptation, since it is not originally targeted on this kind of organization.

The comparison, then, continues, stating that the Brazilian offer would be more expensive than configuring an existing system. The author is probably talking about the configuration of another type of system, not an ERP, since the values presented for each solution, in the same document, prove just the opposite.

The biased analysis continues, saying that the Brazilian Navy has no experience in developing ERP solutions. Well, this has never been proposed. Worst still, it over evaluates ERP, virtually showing only its cases of success, and forgetting the unsuccessful ones. Even worst, the successful cases cited are “widely in the non-profit sector.” Would such success have been achieved if there had been tighter control on expenditure? As InfoWorld informed in October 29, 2001, the failure rate of ERP projects was in the magnitude of 70%. [INFO2001]

Since risks and maintenance have already been discussed on other sections of these comments, it is better to skip to Annex 2 conclusions.

Since the topic is conclusions, this section shall comment on the Annex conclusions with a conclusive question: “How can such a complex implementation as SAP, with so many hidden costs, like the ones cited by Vogt [VOGT2002], be more controllable than a regular software development, based on widely adopted standards and best practices?”

Conclusion

As shown above, ERP is not the silver bullet as some may wish. Actually, there are many important issues regarding ERP adoptions that were not touched in the document, such as:

- *An ERP system is more than the use of a stand-alone pre-written software. It is a change management initiative, which encompasses a review of processes across the whole organization, requiring careful management. [SKOK2001]*
- *ERP is often viewed as a new paradigm for information systems development, because of the following differentiating factors:*
 - *The number and variety of stakeholders in any implementation project*
 - *The high cost of implementation and consultancy*
 - *The integration of business functions*
 - *The consequent configuration of software representing core processes*
 - *The management of change and political issues associated with BPR projects*
 - *The enhanced training and familiarization requirement [SKOK2001]*

Potential problems like reliability, overeager customization and cultural hurdles, and hidden costs, such as having to assign the best people to the project, due to its complexity, delayed ROI and prolonged schedule have to be carefully analyzed. [VOGT2002].

The complexity of such an implementation, the nature of IMO's activities, its nature, background and size, and the present status of IMO automation recommend that a more conservative approach be taken. Adopting a custom-built solution would drastically reduce the impact of systems' changes on the Organization, while providing the opportunity to gradually change its operating standards and leveraging the Organization effectiveness. It shall be also emphasized that the Brazilian Navy proposed solution is much more than just an information system, but the implementation of a planning and budgeting execution and control process, well tried and tested for at least 10 years, in its current IT version, and for more than 30 years since the conception of its structure. Indeed, this is a crucial aspect of the Brazilian Navy solution: instead of Adapting IMO to the "best practices" of an existing system, it proposes a process reengineering, adapted to IMO's pace, and the adaptation of a real system to support IMO's new operation standards.

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ANNEX 2

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30 October, 2002

Dear Mr Jones

Brazilian proposal to 89th session of the IMO council

Further to the Secretary-General's request made at the 89th Session of the IMO council this letter sets out Deloitte & Touche's analysis of the Brazilian proposal to:

"supply and implement not only a budgetary control system but an integrated accounting, financial and budgetary control system at a forecast cost of US \$1m, within a timeframe of delivery before 1 January, 2004".¹

This letter is structured as follows:

- background to the Brazilian proposal;
- analysis of the proposal;
- conclusions.

1. Background to the proposal

As set out in our report on strengthening the organisation and systems for finance and budgeting in the IMO:

"the existing information systems...are inadequate to support the organization's reporting needs. Further, it will not be possible to effectively delegate responsibility for control of financial resource budgets without a significant improvement in the level of financial information available, and this is not possible within the existing system framework. The existing systems framework requires a significant level of duplication of effort and increases working inefficiencies in the organisation as a whole.

We would also note that continued reliance on a number of small providers for systems increases the risk to the organisation as a whole that a key system will not be supported or properly developed in the future."

Building on this conclusion we conducted an options evaluation based on our knowledge of the IMO's systems, its processes, its reform objectives and the current market for financial packages. This work was supplemented by visits to comparator UN agencies in Geneva and a visit to Brazil to review the SIPLAD system which had been offered to the IMO by the Brazilian government. Our conclusion to the options evaluation was that:

¹ Official Summary of Decisions from the 88th session of Council
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“IMO should embark on the procurement and implementation of an Enterprise Resource Planning (ERP) system. This offers IMO the opportunity to significantly improve efficiency and effectiveness by acting as a change-driver to help:

- eliminate multiple data-entry, and multiple data-storage/management;
- implement re-designed processes using modern technology such as work-flow and electronic authorisations;
- strengthen financial controls;
- improve the quality, flexibility and timeliness of reporting;
- delegate budgeting;
- develop real performance management”.

We wrote that:

“Although such an option will be more expensive in the short term, with higher implementation costs than investment in a narrower financial system in particular, it offers a number of advantages, the most important being:

- an integrated solution for all IMO information requirements;
- a scaleable solution, able to grow and change with the organisation;
- the opportunity to include additional areas of functionality in the future as required, including more detailed project management and HR functionality;
- a reliable, tested product from a major supplier with sufficient resource to meet support requirements;
- a user-friendly interface and technology such as workflow to support process change;
- a ‘single version of the truth’, single data source for all financial information;
- consistent, if not lower ongoing maintenance costs”.

In response to the presentation of Deloitte & Touche’s work to the 88th session of council, Brazil made an offer to supply and implement an integrated accounting, financial and budgetary control system at a forecast cost of US \$1m.

2. Analysis of the Brazilian proposal

The Brazilian proposal has to be seen in the context of a well-developed and mature global market for Enterprise Resource Planning (ERP) systems. ERP systems were first developed for manufacturing companies but over the course of the last 20 years they have developed considerably and are now used by private sector companies and public sector organizations across every industry sector. The United Nations and national governments are both major users of ERP systems. Within the United Nations family many organizations, including specialist agencies, have either implemented or are planning to implement ERP packages.

The ERP market-place is highly competitive with three major products aimed at larger organizations and around ten products aimed at medium-sized organizations. These leading products are implemented by a much larger number of companies. Companies and organizations in both the top and middle tier have invested many tens of millions of dollars in developing their products and the companies that implement these products have experience of hundreds of implementations. During the current down-turn in IT expenditure the ERP market is also extremely competitive.

A decision by the IMO to accept the Brazilian offer to develop an integrated financial accounting and budgetary control system would expose the IMO to a large number of higher risks than following the commercial ERP package route. These risks are summarised below:

| Risk | Impact | Probability | Probability if commercial ERP package |
|---|---|---|--|
| System might not meet current requirements | High – the IMO could spend one year and US \$1m developing a system that may not meet critical requirements. | High – the Brazilian offer was made prior to publication of the IMO's requirements. To the best of our knowledge the proposal is to develop a new system. This means the system on offer does not currently exist. Our understanding is that the Brazilian government has no record in developing ERP systems and we have no knowledge of what personnel would be made available to work on the project. We are not aware of any bespoke Brazilian ERP systems being used in UN specialist agencies. By their nature ERP systems are complex and integrated. IMO's current system requirements include financial accounting, financial reporting, budgeting, procurement, publication sales and project management. | Low - commercial ERP vendors are required to demonstrate that their software meets requirements prior to contract and financial commitment. |
| System might not meet future requirements | High – the IMO could spend one year and US \$1m developing a system that would not meet Human Resource Management, Event Management and Performance Management requirements. To meet these needs would require either further development work or the implementation of separate systems. | High – the Brazilian offer is for the development of a new system. We understand this might build on the Brazilian navy's knowledge of developing budgeting and project control systems like SIPLAD and the federal government's knowledge in developing SIAFI. We have no knowledge of the Brazilian government's track record in developing Human Resource Management, Event Management or Performance Management systems. The probability of this risk materialising is also high unless the Brazilian government is planning to establish itself as a supplier of ERP software. | Low - research can establish if ERP systems can meet likely future requirements. Most ERP systems have modules which deal with these areas and can be provided at no extra license cost. |
| System might be delivered late or not at all | High - the existing systems at IMO are not meeting current requirements so any late delivery or non-delivery would have a detrimental impact on the IMO's ability to improve reporting or to improve internal controls or to introduce reforms such as more delegation to managers. | High - to the best of our knowledge the Brazilian government has no expertise in producing ERP systems for an organization like the IMO and might find it has other priorities for limited resources. | Low – procurement should ensure selection of implementation partner with track record of delivery. |

| Risk | Impact | Probability | Probability if commercial ERP package |
|---|--|---|---|
| Uncertainty about arrangements for support | High – failure to support the system could lead to a business critical failure. | High – to mitigate this risk the IMO would either need to make arrangements for building support capability internally which is likely to be expensive and hard to replace. Alternatively the IMO would have to enter into a long-term contract with the Brazilian government. This arrangement would then need to cover UK hours and long-distance travel if required. | Low – IMO would enter into a commercial agreement for support. The cost of this support would be covered by the entire population of users and would be available from Europe. Internal support skills would be easier to source as they will be available in the market-place. |
| Uncertainty about arrangements for ongoing development | High – failure to develop the system on an ongoing basis would risk it becoming superseded. | High – to mitigate this risk the IMO would either need to make arrangements for building development capability in-house or it would have to enter into a long-term contract for development. Unless the Brazilian government was committed to the project this resource might in future be withdrawn. | Low – IMO would benefit from regular updates and enhancements to the selected product. The cost of these would be spread between the whole user community. Development skills are more likely to be readily available in the market-place. |
| System might not be delivered within budget. | Unknown - depends on level of over-run. The IMO would have to fund any over-run either by seeking additional funding from Members or reserves. | Unknown– we have no knowledge of any detail behind the proposal: for example who will be doing the work or who will bear the risk of any cost over-run. The Brazilian government did not respond to the Request for Expressions of Interest and the proposal was made prior to the publication of requirements. These are more extensive than an integrated accounting, financial and budgeting control system. | Medium - can be reduced to low probability with strong executive leadership, clarity about objectives and strong project management. All commercial ERP bidders have responded to detailed Requests for Information and Scripted Demonstration texts. |

3. Conclusions

The IMO is committed to making a substantial investment in new systems. In our view, as set out in the table above, the risks of accepting this offer are considerably higher than those presented by selecting and implementing an established ERP package.

Yours sincerely

Chris Sullivan
 Partner
