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Adapting European Information Systems - euro

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INTRODUCTION

by Mrs. C. FLESCH
(Director-General – Translation Service and Informatics Directorate)

I would like to welcome you to this first symposium on adapting European information systems to the euro organised by the Informatics Directorate and DG III/IDA.

During 1997, DG II as part of its planning for the euro organised, with DG III, a workshop and a forum for industry, SMEs and Government on the IT implications of the euro. Today's symposium is part of that continuing process of extensive consultation by the Commission with all interested parties to ensure that the euro is introduced as smoothly as possible.

These initial discussions, our own internal preparations in the Commission for the changeover to the euro and extensive consultation with IDA convinced the Informatics Directorate of the need to prepare as closely as possible together the adaptation of those community wide information systems where both the Commission and Member States administrations are involved.

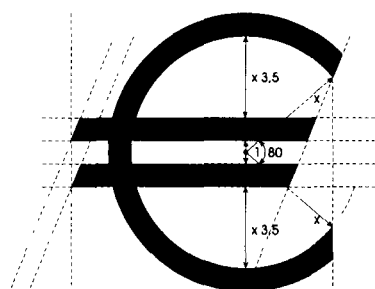
Thus the objective of our symposium today is to bring together representatives of IT services in the Member States administrations and the IT services of the Commission and create a framework for the exchange of information between public administrations and the Commission on the adaptation of information systems to the euro.

We are convinced that sharing experiences and best practices in this way will contribute to the successful completion of euro IT projects in the public sector on time by 2002.

We have chosen a particularly auspicious day for this symposium - after the historic EMU Council of 2nd May preparations for 1st January 1999 are accelerating. The ECB has been set up one month earlier than originally planned and in fact the first meeting of the governing council takes place today. The Commissioner, Mr de SILGUY, is the Commission's representative on the Council and thus unfortunately he cannot be with us today.

Mr de SILGUY has emphasised several times in the past year the importance of national plans for the transition phase and the need to speed up preparations. The focus at the moment is on preparations at national level and

in the private sector. Practical preparations are advancing most quickly in the financial sector and the international companies which will use the euro from 1st January. Public administrations must also prepare themselves at regional and local level and co-ordinate their preparations at Community level. Public administrations which delay could put their industrial and commercial partners at a disadvantage.



Mr de SILGUY's message to today's symposium is simple - now that the political decisions have been taken and the organisational structures put in place, the trouble free introduction of the euro will, to a significant extent, be dependent on the underlying IT systems.

Building and adapting these euro systems on time and ensuring their acceptance by the general public, not just by the specialists, is **the** challenge facing the European IT community today.

I hope that today's symposium will mark a first small step to meeting this challenge for public sector systems through increased co-operation of the Member States informatics services and those of the Commission.

It is organised in two panels:

- the first, this morning, chaired by Mr Carl-Magnus LEMMEL, will concentrate on sharing experiences between Member States and the Commission on the overall approach to adapting information systems to the euro with contributions from the Commission, Portugal and Finland;
- the second, this afternoon, chaired by Mr Yves FRANCHET, will concentrate on more technical issues and on sharing best practices with contributions from the Commission, and the banking sector with papers from EUROCLEAR and the ECB.

The symposium will conclude with a panel discussion chaired by Mr Fernando de ESTEBAN.

It is your symposium and I hope that you will participate in the discussion session and enrich the proceedings with your contributions.

For my own part I would like to invite you to reflect on two issues which seem to me to be particularly important in the preparations for 2002: user interfaces and quality assurance.

As a politician I am acutely aware of the dangers of a psychological rejection of the euro. The user interfaces of your systems, particularly those with the

general public, will be an important element of the communications exercise necessary to guarantee that such a rejection does not occur. In many cases these interfaces will present new ways of doing things, new ways of interacting with local and national governments and with Community institutions - getting them wrong could have very serious consequences.

In the same vein, delays, missed deadlines and slow, unreliable systems could also lead to chaos during the changeover period and undermine the successful introduction and acceptance of the euro. Unfortunately, as you are painfully aware, such delays and problems are all too common in IT projects particularly with a first implementation - so quality assurance will need to be a priority in building and adapting these euro systems.

In fact it would not be an over-statement to say that your reputation as a profession will be at stake when developing and adapting these systems. Given that we have to solve the year 2000 problem at the same time, our ingenuity and our personnel will be taxed to the limit.

Actually this is a third issue which I think will be of fundamental importance over the next few years - personnel policy. These euro systems will be inherently complex, implementing new procedures and new working methods - for example electronic commerce - with new technologies. Where will we find the personnel to implement these systems? How will we train and retain staff and ensure that they can cope with: rapidly changing technologies; maintaining legacy systems; and the associated stress of implementing new systems during the next 3-5 years?

I hope that your reflections today will throw some light on these three issues: interfaces, quality assurance and personnel policy.

However before I hand over to my colleague Carl-Magnus to chair the first session, I would like to thank all those who have prepared today's symposium - the programme committee, the internal Commission speakers and especially the external speakers - Mr MENDES DOS SANTOS, Mr KONGAS, Mr SLECHTEN and Mr BOERSCH who is replacing Mr ETHERINGTON.

Finally I wish you a stimulating and satisfying symposium.



EURO AND IT – SETTING THE SCENE

chaired by Mr. Magnus LEMMEL
Deputy Director-General DG III - Industry

Introductory remarks

The symposium today is concerned with the practical IT aspects of the changeover to the euro. What must be done to our IT systems and how far are we? These are the questions that will be taken up. The introduction of the euro will be of major importance for the European industry. The euro will make Europe more competitive not only by merely simplifying economic transactions but also by making the internal market more visible with a new euro look. Business inside the EU and between EU and its external partners will become easier and will thus increase. Being the directorate general for industry, DG III has therefore a particular interest in this symposium.

The two sessions this morning aim at answering the following four questions:

- What has the Commission done to prepare for the euro internally?
- What has the Commission done for the economic sectors ? There will be a presentation specifically of the agriculture sector.
- What is the current status of the euro changeover in the public administration, seen from a Commission perspective?
- What do the Member States say about their own situation?

For quite some time, DG III has organised informal meetings with Commission services and also arranged a few workshops with industry on the euro topic. The actions and their results are published on a dedicated publicly available WEB site that could be found through the Europa Server. The topic has also been extensively discussed during the meetings of the TAC (the Committee for our IDA Programme) amongst representatives from the MS administrations, together with the Year 2000 issue, and has led to useful exchanges of experience.

We will continue these actions in co-operation with other Commission services in order to help the European industry and administrations to prepare for the euro.

I cannot miss the opportunity to share with you a problem of a different kind that I learnt about recently: just counting and transporting banknotes between clients, retailers and inside the banking system might cost as much as 40 BECU a year within the EU. At each step in the transfer the money is counted twice: by the one handing over the money and by the one receiving it. It ought to be possible to eliminate a number of these steps in the handling of banknotes by using modern technology. We should use the introduction of the euro for reforming also this system. It might be possible to reduce the costs by half which would save us up to 20 BECU. This is an opportunity that we should not miss.



EURO AND IT – SETTING THE SCENE

IT Support for the euro

by Mr. D. DEASY Head of unit – Informatics Directorate
Mr. C. PEARE Head of unit DG VI

The introduction of the euro is the most significant planned business change ever to have faced the European IT Community and its customers¹. IT support will be essential for its success.

It impacts every business and public sector administration. Among the issues confronting these organisations are choice of changeover dates; choice of strategy for changeover; and resource implications in terms of equipment, software development, staff training and interfaces with supplier and customer systems. In addition, communicating the effects on customer relationships and training staff to deal with these issues is likely to be particularly challenging for those organisations which sell primarily or interact with the general public.

The euro will require applications to be changed in two ways - first for technical reasons to support new currency formats and calculation rules; secondly as business responds to the new challenges and opportunities. Banking and finance are most affected, followed by the retail sector. Public administrations will also be profoundly affected - almost all systems will have to be adapted - vertically from a national level down to municipalities and horizontally into parafiscal systems such as autonomous public social security systems. A recent survey estimates this total market at 25.000 MECU over the changeover period to 2002.

Ensuring that these challenges are met in time, implies an unprecedented effort on the part of the public administration IT community. This paper proposes a framework for the exchange of experience and best practices in adapting these European information systems to the euro and gives an overview of the issues to be addressed with Commission experiences to date.

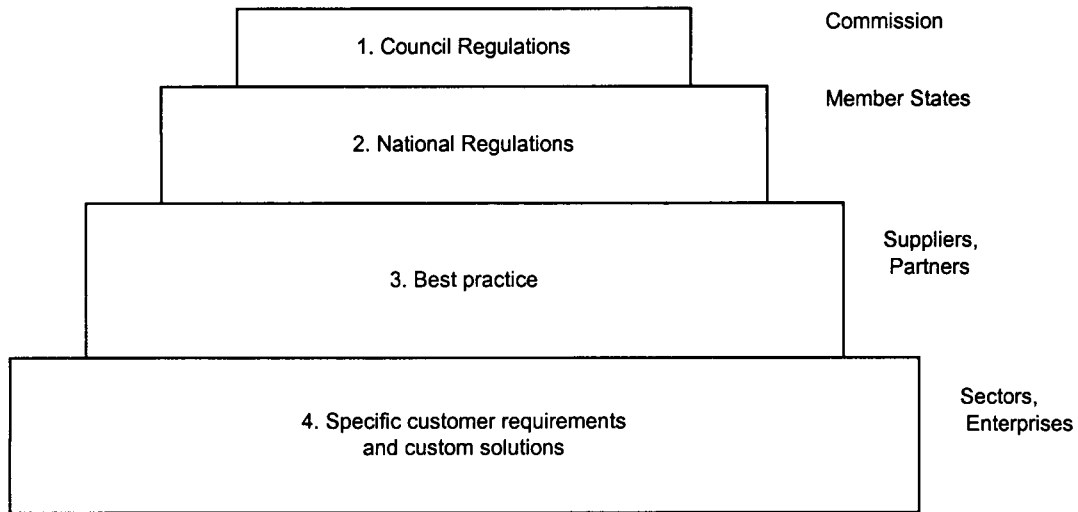
Public sector information exchange on the euro & it

Following a series of consultation meetings during 1997 with representatives of

¹ European Information Technology Observatory 98 DG III

small, medium and large enterprises, DG III developed a model illustrating the different factors driving IT changes due to the euro².

This model is illustrated below:



The first two layers refer to the applicable laws or “political indications” (i.e. regulations plus national transition plans). The third layer concerns the best of professional standard practice as well as practical experience exploitable across companies or sectors, and the fourth comes from specific customer requirements.

Information in the first layer concerns actual or prospective legislation or recommendations issued by the European institutions. These regulations are limited to conversion and rounding rules, continuity of contracts, coding and placement of the euro symbol, etc.

Information in the second layer concerns the transition plans and further legislation issues initiated by the Member States. This should be made readily accessible at least in summary form, including an indication of where more detailed information can be found and who is responsible for its maintenance. It will need to embrace not only plans at national level but will also need to identify relevant actions at regional and local level, in particular where these involve exchange or acceptance of data in electronic form.

Information in the third layer (i.e. practical experience and professional best practice) is owned by a variety of actors, mostly enterprises who are, by choice or necessity, more advanced in their changeover projects as well as by their IT

² Euro and IT: sharing knowledge and practices DG III (Mr Di Maio) 18.12.97

consultants and suppliers. Capitalising existing experience in terms of best practice is likely to reduce the effort spent on “custom solutions” to that which is really specific to a particular business or situation.

Case studies are particularly useful in this context. Actual documented experiences of real companies (rendered anonymous if required) could serve as models for comparable companies. These case studies should focus on IT issues, but in the context of the business decisions underlying them. They should not attempt to disguise the inevitable mistakes or compromises made, since these can be instructive.

This model defines a framework within which, inter alia, the following issues may be addressed:

Scenarios and case studies.

The provision of relevant scenarios, reference models or concrete case studies would help organisations to see quickly why and how to get started. These would cover aspects such as the switchover strategy (e.g. early/late, single/dual/multi-currency, effects on the supply chain). Initially scenarios would be developed using the best experience available. Later an increasing set of real case studies could be drawn up.

Motivation.

A number of factors will influence the “degree of action” by enterprises. They include the requirements from the supply chain as well as from public administrations, the option of gaining competitive advantage and improved strategic positioning versus a more forced/defensive attitude, and ultimately the bottom line effects.

Methods.

Methods that might be adopted to accommodate the changeover should take into account the business analysis and the inter-relationship between business and IT methods. They should help identify the most appropriate changeover strategy (e.g. big-bang vs. gradual) and, for each application in an information system, to take one of four basic choices (e.g. replace.fix, encapsulate, outsource).

Resources.

Finally, and based on these approaches, estimates of the resources and time required need to be derived for which guidance is again needed.

This general model is directly applicable to the public sector. It defines the framework for information exchange between public administrations themselves and with the Commission. It provides for the exchange of experiences and best practices of particular concern to the public sector regarding the impact of the euro on information systems and the IT support necessary to ensure its successful introduction.

IMPACT OF THE EURO ON IT SYSTEMS

The 1998 report from EITO³ identified the following technical changes to IT systems due to the euro:

- Output and input representations of currency data will change. Screen and report layouts must be modified to reflect the changes (e.g. new currency names and field widths). Paper forms read by optical character recognition devices must be redesigned.
- Database schema definitions may need to be modified to change currency field lengths and, perhaps, add currency indicators and decimal points.
- Programme logic changes may be required for decimalisation, new rounding rules, changed declaration sizes for internal calculations and new validation. Specialised financial systems may also be affected by technical issues still under discussion (e.g. the possible harmonisation of interest calculation periods).
- Historical financial data must be converted to euro, or new business rules must be implemented to perform “on the fly” conversion or combination of pre- and post- euro values.
- New business processes must be supported by new applications. Examples might include the extension of a single-currency trading and price printing during the changeover period.
- IT system changes will require corresponding support, documentation and training that may extend beyond staff to customers and even end-users. For example, some organisations will need to establish customer help lines to answer queries about invoices or statements.
- Organisations must update or replace currency handling hardware, such as automated teller machines (ATMs), point of sale (POS), terminals, credit card charging terminals and coin-operated machinery.
- External interfaces, such as electronic data interchange with trading partners, must be re-negotiated. Interfaces with government (e.g. to satisfy legal requirements related to financial reporting) must be modified.
- The EU has defined a new single-character symbol for the euro. This will require changes to keyboards, fonts, character-generator read-only memory (ROMs) and printing hardware (e.g. daisy wheels).

These changes apply primarily, but not exclusively to financial systems.

³ European Information Technology Observatory 98 DG III

The costs associated with these changes will be substantial covering:

- direct cost of program development and testing
- package costs
- data conversion costs
- project management costs
- impact assessment costs
- operational costs
- hidden and indirect IT costs
- hardware costs
- overlap with year 2000 conformance efforts
- cost of uncertainty.

These costs will vary by industry - a key driver being the amount of business change implied by the euro.

The risks are also considerable:

- Failing to be ready in January 1999
- Further compression in the already short time-frame for the project
- Greater resources problems (resources already committed to other companies that made an earlier start)
- Rather than being an opportunity it becomes a survival project
- By completing this project late losing competitive advantages to those companies that completed earlier and are now implementing new applications.

Strong project management will be essential to control costs, minimise risks and ensure successful completion on time.

Strategic decisions will be necessary covering, inter alia:

- euro when?
- fix existing systems or re-make?
- make or buy?
- euro and year 2000 joined or not?
- test and changeover strategies.

Shared experiences between public administrations and with other sectors particularly banking and finance will help to answer these questions.

COMMISSION IT AND THE EURO

As far as the Commission is concerned an interservice 'euro /year 2000' group, with top management support, has been created to support the efforts of the different services in preparing their systems for both events.

In practical terms, the 'euro problem' has been approached by the establishment of an inventory of all applications and an assessment of the euro impact for each. Clearly, for applications without a financial aspect this was zero. (The inventory served a dual purpose since it was used also for an evaluation of the impact of the Y2K problem.)

About 50% of the Commission's corporate information systems are not concerned by the euro, 30% are already compliant and 20% are being adapted.

Adaptation activities are mainly concentrated in the following areas: statistical data bases; administration and treasury operations (budgetary receipts, payments, payroll), contract follow-up and agricultural monetary systems.

The situation in most Directorates General of the Commission appears in many respects relatively straightforward ; financial operations are treated only in ECU or multicurrency transactions are already handled in a form which will permit the ready introduction of the euro either as a replacement for the ECU or as an additional currency. For some of these the consequences of the arrival of the euro will be limited to replacing the ECU designation in the outputs of the system with euro or the corresponding symbol. There are however a number of complicating factors to be taken into account. Most important, almost all financial systems in the 'operational' Directorates General interface with other systems. Where the partner systems are located within the Commission services (e.g. SINCOM) management of a coordinated changeover is relatively straightforward. In the case where the system interfaces with partners in the national administrations and transactions are currently reported in national currencies, modifications will be needed for a progressive move to euro exchanges as each of the 'in' Member states moves to reporting in euro. This will require careful coordination and has the potential to become extremely complex if a situation is reached where individual Member states retain national currency reporting for some activities while reporting others in euro.

Particular problems arise in the agricultural sector where account has to be taken of the agri-monetary environment. In principle, from 1 January 1999 there will be no green currencies as far as the 'ins' are concerned but it is likely that some transitional provisions will be instituted. It is expected that proposals will be presented in the near future but, until they are published, it will not be possible to evaluate the extent of changes needed and a final assessment of their impact on IT systems will not be possible until they are adopted. The time available to modify systems for 1 January 1999 will be limited but this is not a unique experience. For the 'preins' the direct impact of the euro on Commission systems will be limited; indirect effects of changes in mechanisms may however have some effects.

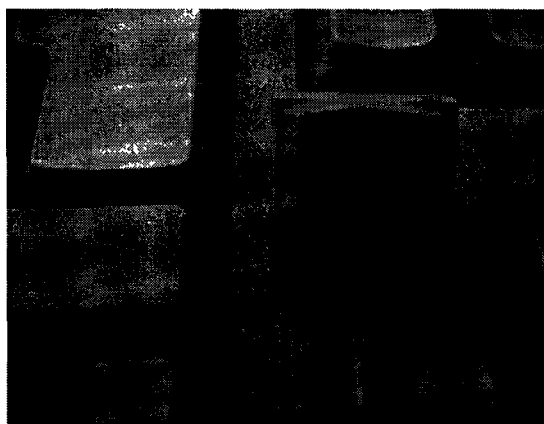
In the specific case of DGVI, several of the applications identified as euro critical are at an advanced stage in their life-cycle. The near simultaneous

arrival of the euro, Y2K, accumulated user requests for modifications, further potential developments to meet the changes foreseen in Agenda 2000 and the next enlargement have led to an in-depth examination of the applications concerned. As might be expected, for the older applications, the advantages of moving to more modern technology also became evident. For these, the euro problem has become the euro opportunity! A decision has been taken to reengineer these applications in a fundamental fashion that might not otherwise have been tackled for some years. The immediate Y2K problems have already been dealt with and as an interim measure some specific 'fixes' will be necessary to deal with essential and urgent euro related problems on the existing applications but the major effort is being devoted to a priority rewriting of these systems.

In addition to these internal activities an inter-institutional group has been set up to share experiences and coordinate actions particularly regarding administration and treasury systems.

Finally a more general problem of particular concern to the Statistical Office but which goes beyond the IT community is that of how to manage historical data series. It seems likely that different analytical requirements may give rise to a variety of different approaches to conversion. However it may be expected that some agreed conventions will emerge at least to ensure that historical series maintained for administrative uses will be converted in a consistent manner.

The Commission has also integrated the official euro symbol into its standard informatics configuration. This is based on the Commission Communication of July 1997 on the use of the euro symbol and on a recommendation by the Informatics Directorate, prepared after consultation with suppliers, on the placement of the euro symbol on computer keyboards⁴.



⁴ Recommendation for the placement of the euro sign on computer keyboards and similar information processing equipment Informatics Directorate (Mr Tossounidis) 4.12.1997

The Commission experience to date confirms that the critical success factors for euro adaptations are, as usual:

- user involvement
- top management sponsorship
- planning and project management
- selection of partners
- simple solutions

CONCLUSION

This paper proposes a framework for information exchange between public administrations and the Commission on the adaptation of information systems to the euro.

It describes the impact of the euro on IT systems and the Commission's approach to meeting this challenge.

Sharing experiences and best practices in this way should contribute to the successful completion of euro IT projects in the public sector by 2002.



EURO AND IT – SETTING THE SCENE

Vue générale sur la préparation des Administrations Publiques Européennes à l' euro

by Mr. F. ROBINE Expert DG II – Economic and Financial Affairs

À la suite de l'adoption, par le Conseil européen de Madrid, du scénario de passage à l'euro, le besoin a été ressenti, tant au niveau des gouvernements nationaux qu'au sein de la Commission, de créer un forum de discussion pour les coordinateurs nationaux responsables de la préparation des administrations publiques à l'euro.

La Commission a donc offert aux Etats membres de constituer un réseau à l'intention de ces responsables, et elle s'est attelée à cette tâche dès janvier 1996. Ce réseau a été constitué par Rolf Kaiser, conseiller économique à la DG 2. L'un des premiers objectifs de ce nouveau "réseau d'administrations publiques" a été l'instauration de contacts personnels et directs entre les coordinateurs nationaux nouvellement désignés.

Il a ainsi été possible d'échanger les plans et les directives élaborés par chaque pays pour organiser ce travail complexe de préparation des administrations nationales, la Commission jouant un rôle centralisateur et facilitant l'échange d'informations.

La Commission a d'emblée écarté l'hypothèse d'une réglementation communautaire en matière de préparation des administrations à l'euro. La diversité, en Europe, des modes d'organisation constitutionnelle, des structures juridiques et des réglementations fiscales rendent, en effet, impossible, ou inapplicable, l'élaboration de règles uniques sur l'ensemble du territoire de l'Union européenne.

La coopération étroite entre les coordonnateurs des administrations nationales et les fortes demandes, dans tous les Etats membres, des entreprises et des opérateurs financiers, ont facilité l'apparition d'une approche harmonisée, ouvrant aux administrés dès 1999 de larges options euro dans la quasi totalité des Etats membres.

Je souhaiterais présenter brièvement l'état des travaux et faire le point sur les sujets qui sont encore en cours d'examen.



QUEL EST L'ÉTAT DES PRÉPARATIFS DES ADMINISTRATIONS?

Je distinguerai les préparatifs des Etats faisant partie du premier groupe de participants de ceux des autres.

Pour les Etats de la zone euro

Le travail des administrations progresse rapidement. Plusieurs mois avant ses partenaires, en juin 1996, la Belgique a été le premier Etat à annoncer un plan de basculement de son administration, c'est à dire, à annoncer aux particuliers et aux entreprises ce qu'ils pourront faire en euro dès 1999. Elle autorisera une très large utilisation de la monnaie européenne pour toutes les relations des entreprises et des particuliers avec les administrations publiques. Ses travaux ont servi d'exemple aux autres Etats de l'Union.

La Commission publie périodiquement un document de travail, qui permet de comparer l'état des préparatifs des administrations publiques. Le premier document a été rédigé le 16 décembre 1997. Une mise à jour est prévue pour le mois de juin. A ce jour, tous les Etats participants à l'euro ont publié un plan de basculement de leur administration. Leur transcription législative est en cours.

Quelles sont les grandes lignes de ce plan? Tous les budgets nationaux resteront établis en monnaie nationale jusqu'à la fin de la période transitoire, mais les comptables publics pourront effectuer des paiements en euro.

Les options euro offertes par les Etats membres en 1999 diffèrent selon qu'il s'agisse des entreprises et des particuliers.

Pour les entreprises, elles seront particulièrement larges:

- tous les Etats participants autorisent les entreprises à établir leur capital, à payer leurs impôts, leurs cotisations sociales et à satisfaire aux obligations de publication légale en euro;
- tous, à l'exception de l'Allemagne accepteront les déclarations fiscales en euro. Les Ministres des finances du gouvernement fédéral et des Länder auront toutefois une nouvelle délibération sur cette question le 8 juin;
- enfin, la plupart des pays, à l'exception de l'Allemagne et de l'Espagne accepteront les déclarations sociales en euro. La France les acceptera seulement à partir de l'an 2000. L'Autriche et le Portugal n'ont pas encore pris de décision.

Pour les particuliers, la situation est plus contrastée.

Ils pourront partout payer leurs impôts en euro, mais la Finlande n'acceptera ces paiements que si les revenus sont en euro. En Autriche, en Belgique, en Finlande, au Luxembourg, au Portugal et aux Pays-Bas et, sous certaines conditions, en Italie, ils pourront également déclarer leur revenus en euro.

Dans tous les Etats participants, le choix d'opter pour l'euro est irréversible. En d'autres termes, une fois l'euro choisi, il n'est plus possible de revenir à la monnaie nationale dans les relations avec l'administration.

Des programmes de formation sont en train d'être mis en place. Les textes juridiques à modifier à l'occasion du passage à l'euro ont été recensés. L'adaptation des logiciels a commencé.

Les Etats membres sont donc entrés dans une phase de traduction des options euro offertes dans leur législation. Des lois générales sur l'introduction de l'euro sont sur le point d'être adoptées en Belgique, en Allemagne, en France, en Italie, en Autriche et au Portugal. Elles sont en cours de rédaction en Espagne et en Irlande. Des changements législatifs sont également en cours au Luxembourg, aux Pays-Bas et en Finlande.

Voilà l'état de la situation pour les onze participants.

Les quatre pays qui ne rejoindront pas l'euro en 1999 sont néanmoins directement concernés par la réalisation de l'Union économique et monétaire. Leurs représentants participent d'ailleurs aux travaux du réseau informel des coordinateurs.

B. Pour les Etats hors de la zone euro

Le Royaume-Uni autorisera dès 1999 la conversion du capital en euro et le paiement des impôts des entreprises, sous certaines conditions. Le gouvernement britannique a mis en place un numéro vert et un site Internet, pour répondre aux questions des entreprises et des particuliers sur l'euro. Un groupe de conseillers a été créé en juillet dernier pour aider les pouvoirs publics à prendre en compte l'opinion des entreprises, des syndicats et des associations de consommateurs. L'administration a reçu mandat de préparer techniquement le passage à l'euro, indépendamment de la décision politique sur l'adhésion à l'UEM. Mme Helen Liddell, Ministre du Trésor, a été spécialement chargée de coordonner les préparatifs du secteur public, avec pour objectif de publier un plan de basculement de l'administration à la fin de l'année. Une importante campagne de communication est également prévue, afin d'améliorer l'information des acteurs économiques sur l'euro.

La Grèce a mis en place un Comité national de l'euro. Elle devrait publier un

plan de basculement de son administration durant l'été. Les autorités helléniques se sont fixés comme objectif de rejoindre l'Union économique et monétaire en 2001, et d'introduire les pièces et les billets en euro en même temps que les autres Etats participants, c'est à dire en 2002.

La Suède autorisera les entreprises à satisfaire aux obligations de publication légale en euro dès 1999. Le gouvernement a évoqué la possibilité d'un référendum sur la participation suédoise à l'Union économique et monétaire à l'automne 2001.

Enfin, le Danemark a notifié dès 1992 son intention de ne pas participer à l'euro. A ce jour, le gouvernement a diffusé auprès de ses entreprises une brochure intitulée « le Danemark et l'euro ».

Voici pour les grandes lignes de la préparation des administrations publiques.



QUELS SONT LES SUJETS EN COURS D'EXAMEN?

Ils sont encore nombreux. Je me limiterai à cinq points, qui me paraissent être aujourd'hui les plus importants: le toilettage des textes juridiques, l'adaptation des systèmes informatiques, la détermination des arrondis, la fixation de la durée de double circulation des pièces et billets et la préparation des administrations locales.

A. Le toilettage des textes juridiques

Ce travail est maintenant engagé dans toutes les administrations. Il s'agit de recenser les textes qui doivent être adaptés parce qu'ils font référence à la monnaie nationale, de les modifier soit dès 1999, soit pour 2002, mais aussi de déterminer de nouveaux seuils et de nouveaux montants. La fixation de nouveaux arrondis est un domaine lié à ce toilettage.

B. L'adaptation des systèmes informatiques

C'est l'objet de cette conférence. Il s'agit là d'un enjeu majeur pour le fonctionnement de toutes les administrations. Je me contenterai d'apporter quelques précisions:

- tous les Etats membres ont créé des groupes de travail sur le sujet
- les Etats membres ont généralement choisi de consacrer leurs ressources propres, c'est à dire leurs équipes informatiques à cette question

- fréquemment ce sont les mêmes personnes qui travaillent sur l'euro et sur l'an 2000
- quelques Etats membres ont publié des guides pratiques sur la question (c'est le cas en France avec les « Conseils et recommandations pour les marchés publics informatiques », « questions informatiques; les convertisseurs »...

C. La fixation d'arrondis

Il existe dans tous les Etats membres une multitude de dispositions, réglementaires ou législatives, qui comprennent des références à des chiffres ronds exprimés en monnaie nationale. La conversion de ces chiffres peut créer une certaine confusion dans l'esprit du public. A titre d'exemple, un montant de 50 000 francs belges est susceptible de devenir, sans adaptation ad hoc, un montant de 1224 euros et 70 centimes. Faut-il arrondir? Et si oui, comment? Ce problème est particulièrement complexe, car il faut concilier deux exigences contradictoires: la simplicité et la neutralité du passage à l'euro.



Face à cette question, il existe quatre approches possibles:

- *Utiliser les montants en euro sans adaptation.* Le taux de change fixe, décidé le 1er janvier 1999, serait mécaniquement appliqué à tous les chiffres contenus dans des dispositions réglementaires. Le retour à des montants ronds se ferait très progressivement, à l'occasion des opérations normales de « toilettage » des dispositions réglementaires. Cette solution présente l'avantage d'être financièrement totalement « neutre » pour les administrés, qui ne paient ni plus, ni moins qu'avant. Mais elle peut occasionner des difficultés pour les contribuables, par exemple, dans le remplissage des formulaires, et occasionner des frais supplémentaires d'adaptation des logiciels si ceux-ci ne prévoient pas l'utilisation de décimales. Tel est le cas en Belgique, en Italie, en Espagne et au Portugal, où, en fait ou en droit, les centimes ne sont pas utilisés.
- *Arrondir à l'euro le plus proche.* Cette approche réduit les problèmes informatiques, mais peut occasionner des gains ou des pertes de recette ponctuels pour l'Etat. A titre d'exemple, si dix millions de personnes paient quarante-cinq centimes d'euro de moins, l'administration enregistre un manque à gagner de 180 millions de francs belges.

- *Compenser les arrondis entre eux pour que l'effet soit globalement neutre.* Certains montants seraient arrondis vers le haut, d'autres vers le bas. Les gains compenseraient les pertes. Cette formule est complexe. Elle peut en outre être source d'inégalités entre les citoyens lors du passage à l'euro: certains paieraient plus et d'autres paieraient moins.
- *Arrondir systématiquement vers le bas.* Il en résulterait une perte de recette pour les administrations publiques, mais un tel choix présenterait deux avantages: il serait à la fois clair et apprécié par le contribuable.

Il appartient à chacun des Etats membres de décider la formule à retenir. Mais je pense, à titre personnel, qu'il faut éviter tout alourdissement de la pression fiscale à l'occasion du passage à l'euro, fut-il marginal. Le groupe « pouvoirs locaux », au sein d'admi-euro, a recommandé de ne pas augmenter les tarifs communaux lors de la fixation de nouveaux montants ronds.

D. La durée de double circulation des pièces et des billets

Le Conseil européen de Madrid a fixé, en décembre 1995, une durée maximale de six mois. Aujourd'hui, un large consensus se dégage en Europe sur la nécessité de réduire ce délai. Le raccourcissement de cette période est de la compétence des Etats membres. Le réseau informel des administrations publiques en discute actuellement. La plupart des pays participants envisagent de limiter la période de double circulation à une durée comprise entre deux et trois mois, à l'exception notable de l'Allemagne, qui souhaite la supprimer purement et simplement: le deutsche Mark perdrait son cours légal dès le 1er janvier 2002.

Il faudrait mettre des pièces et des billets en euro à disposition des banques et des commerçants avant le 1er janvier 2002, afin qu'ils soient en mesure de les utiliser le jour J.

La Commission publiera avant la fin de l'année un document de synthèse sur ce sujet.

E. La préparation des administrations locales

La préparation des administrations locales progresse activement, même si elle reste globalement moins avancée que celle des administrations nationales. Namur, Besançon, Livourne, Francfort ou encore le land de Salzbourg ont préparé de véritables plans de basculement de leurs services, afin d'être en mesure de fournir à leurs administrés le service en euros qu'ils attendent dès 1999. De très nombreuses communes, de toutes tailles, ont également annoncé leur intention de procéder à un double affichage des prix dès le mois de janvier 1999, afin d'aider leurs concitoyens à s'habituer à la nouvelle échelle de valeur.

Parmi les tâches à accomplir, il convient de distinguer entre l'échéance 1999 et l'échéance 2002.

Tout d'abord, en 1999.

- Premier exemple, les communes doivent adapter leurs systèmes informatiques et leurs documents comptables, pour être en mesure d'accepter ou d'effectuer des paiements en euros. Il n'y a, entre 1999 et 2002, ni interdiction, ni obligation d'utiliser l'euro. L'adaptation des systèmes informatiques et comptables prend du temps. Les logiciels sont parfois anciens, écrits dans des langages qui exigent de longs délais pour leur adaptation et plusieurs mois de test.
- Deuxième exemple, les services financiers des communes doivent se préparer à profiter des nouvelles opportunités offertes par la constitution d'un marché de l'euro, intégré, profond, vaste et liquide. Elles pourront définir et trouver facilement un produit financier adapté à leurs besoins, et ainsi, mieux gérer leur dette. Certaines collectivités locales, comme par exemple, le Conseil régional de Poitou-Charentes, ont dores et déjà annoncé leur intention de basculer leur stock de dettes en euro dès 1999.

Deuxième échéance: le 1er janvier 2002.

A cette date, la totalité des activités des collectivités locales devront s'effectuer en euros. Je citerai trois exemples d'actions à entreprendre pour s'y préparer:

- Premièrement, les collectivités locales doivent recenser l'ensemble des textes qui comportent des références à une somme exprimée en francs, pour les adapter à la nouvelle monnaie européenne.
- Deuxièmement, il faut recalibrer l'ensemble des appareils municipaux qui utilisent des pièces et des billets, pour qu'il soient en mesure d'accepter les euros. Leur nombre est élevé. Il s'agit des parcmètres, des horodateurs, des distributeurs ou encore des caisses automatiques.... Il faut le prendre en compte dès maintenant. Les communes qui continuent à acheter des parcmètres non euro-compatibles se condamnent à devoir les envoyer à la casse dans trois ans et demi. Certaines villes, comme Metz (France), étudient la possibilité de développer les moyens de paiement électronique pour faciliter le passage à l'euro.
- Troisième exemple, l'adaptation de l'ensemble des formulaires et imprimés municipaux et la retarification de l'ensemble des services. Cet exercice constitue une bonne occasion de modernisation de la gestion administrative des collectivités locales. A titre d'exemple, la ville de Bonn a constaté, en passant au crible ses 1200 formulaires pour les adapter à l'euro, qu'un tiers d'entre eux pouvaient être supprimés.

CONCLUSION

Permettez-moi, pour conclure, et en forme de clin d'oeil de rappeler ce propos tenu par un des pères de l'Europe, Paul-Henri Spaak :

« là où il y a volonté politique, il n'y a pas de difficultés techniques insurmontables. Là où il n'y a pas de volonté politique, chaque difficulté technique devient un prétexte pour faire échouer les négociations ».

Cette observation conserve toute son actualité. Il y a encore deux ans, les problèmes à résoudre pour créer l'euro paraissaient insurmontables: des déficits élevés, certaines opinions publiques hésitantes... Mais la volonté politique des Chefs d'Etat et de gouvernement, soutenue par le travail des Institutions européennes et des administrations nationales, n'a jamais fléchi. Et le résultat est là: l'Union économique et monétaire sera créée conformément aux conditions et au calendrier prévu par le traité, dans 217 jours.



IT PREPARATION

Case studies

The impact of the *EURO* on I.T. systems and applications

by Mr. A. MENDES DOS SANTOS – Portuguese Delegation to the *Telematics in Administrations Group* (TAG) Executive Board, Informatics Institute, Ministry of Finance, Portugal

This short paper is a revised, edited and annotated written version of the presentation the Author was invited to make (as a Member of the TAG) at a seminar organised by the European Commission (Informatics Directorate and DG III) on the 9th June 1998 in Brussels, the theme of which was "*Adapting European Information Systems to the EURO*". As such, the style was deliberately kept light and informal.

INTRODUCTION

I thank the Commission for the kind invitation to be here with you today; it is a welcome change from my daily chores as an I.T. Manager in the Portuguese Ministry of Finance -- I guess they are the same everywhere... They remind me of a charming Indian comedy I watched yesterday in the ARTE TV channel about the initial stages of the career of a high-ranking Public Administration officer in Local Government in India: at a certain point the central character of the film summarised his work as a high-ranking Civil Servant as "*just listening to everybody's complains*"...

I feel compelled to start by confessing something that is not very fashionable these days: I AM A PESSIMIST. How can I be otherwise? I have been working in I.T. for 27 years and learned that if there is anything unquestionably true in life (i.e., a dogma) it is the so-called "*Murphy's Law*": if anything can go wrong, it will!

Before getting any further, I must also make it clear that all opinions expressed are to be understood as purely personal, in no way embodying any official position from the Portuguese Government and Administrations.

THE PROBLEM

In a nutshell, the problem we face is *“How to make I.T. systems cope with (the EURO)”*.

The technical definition of the issues involved is well understood and will be addressed in-depth by other speakers in this seminar; I shall thus focus on other issues, mainly *“political”*, organisational and logistical.

We know exactly where we need to get to: from the early-1998 pre-*EURO* days we must reach the late-2002 post-*EURO* period with our I.T. systems and applications functioning properly. Unfortunately that is not the only problem we are confronted with in this time-frame – in-between we also have to address the (in)famous *“YEAR 2000 Problem”* (Y2K).

Given that the reason for such timely coincidence stems back from Pope Gregory IX’s decision in the XV century (he instituted what has since then been called the *“Gregorian Calendar”*), it has been rumoured that the European Council of Ministers asked the European Commission to have secret (well... not any more !) talks with the Vatican to solve the issue once and for all, devising a new *“John Paulian Calendar”*. I am sad to understand that those diplomatic contacts did lead to nowhere, although both parties agreed, as it is usual in such circumstances, that the contacts were *“constructive and positive, held in an unexceedingly frank environment”*.

In order to better grasp what is at stake, let us make a quick set of comparisons between the two sets of issues involved in those two situations:

YEAR 2000 Problem	<i>Introducing the EURO</i>
Clear definition (scope, objectives, skills, timescales)	Less clear definition
Logically <u>very</u> simple	Logically complex
Non-strategic	Strategic
IT-centered solution	Complex, business-led solution going well beyond the scope of I.T.
A logistical nightmare	An (even worse...) logistical nightmare
FAILURE: high-profile and dramatic	FAILURE: lower-profile but at least as dramatic (if not even more)

It is interesting to note that the problems seemingly more difficult to solve (the *EURO*-related ones) are also those the possible failure of which will not be so immediately and publicly visible.

I attach a particular significance to the fact that the nature of the respective solutions is fundamentally different for the two problems – the Y2K problem can and should be solved purely within the realm of I.T., in which the I.T. applications have to be “fixed” but not necessarily rewritten/redeveloped (this is just one of the ways to fix them, but there are quite simpler ones), while the *EURO* problem must be tackled at a strategic level and most likely will entail a total (or at a least very significant) redevelopment of most I.T. applications.

I would also like to illustrate numerically what I mean by “a logistical nightmare”; for instance:

in the context of the Y2K problem, it has been reported (*International Herald Tribune*, 1998.04.30) that to 500 largest US corporations are expected to spend around 11 billion US\$ to solve it; the Financial sector alone will be spending something between 3.5-6 billion US\$;

in the context of the introduction of the *EURO*, nearly 13 billion notes and 76 billion coins now circulating in the participating Member States have to be replaced by 2002; for a country like The Netherlands, it has been estimated that the replacement of nearly 1.5 billion coins will entail a total of 8.000 journeys by 250 1-tonne trucks !

To end this quick statement of how I see the problems at stake, if I may now touch briefly upon the technical complexities, another interesting set of comparisons can be made:

	YEAR 2000 problem	Introducing the <i>EURO</i>
Data input / results presentation	Slightly different	Essentially different
Procedural logic	Same	Basically different
Data structures	Essentially the same	May be quite different
Coherence with historical files	Feasible	May cause “statistical discontinuities”

SOLUTIONS?

As to any other problem in the life of organisations, there are two basic perspectives on how to tackle it:

The political approach (typically pushed by top-level management), where the utmost objective is to take advantage of all possible opportunities in a fast-moving world, in order to gaining competitive advantage in focused areas.

This approach is unpredictably opportunistic, favours a fragmented approach to applications and attempts their (case-by-case) integration through “*front-ending*”.

Its most severe drawback is that (if taken to an extreme) it can lead to disparate, non-integrated systems and applications.

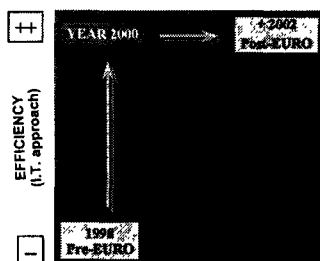
The efficiency approach (usually favoured by I.T. departments), in which the evolution between the initial and final phases (and between any two intermediate stages) is preferably sought through a planned / phased step-by-step approach, in order to make efficient and performant core I.T. applications available at all stages in the process.

This approach is logically predictable, allows for unified (object-oriented) data models to be built up and maintained, and stresses coherence among applications as well as among data.

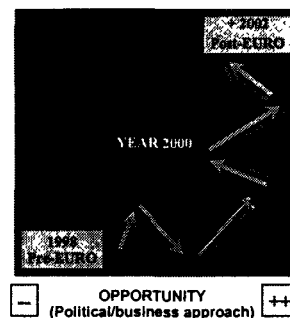
This approach also has an associated problem: it leads to solutions that may take significantly longer to deploy and... the real world may change in-between.

We can make a graphical comparison between the two approaches:

1 : The I.T. approach



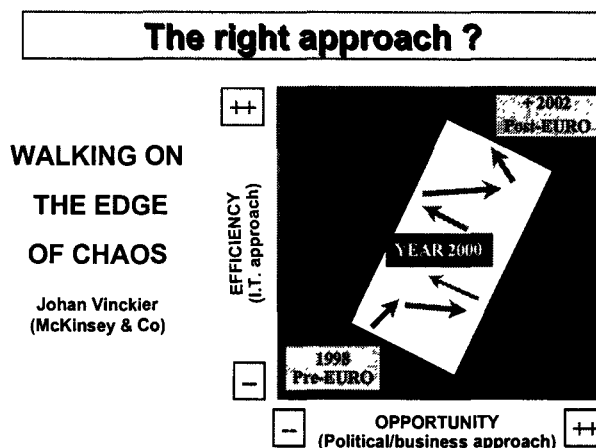
2 : The “political” approach



A possible solution might be what I heard a colleague (Mr. Johan Vinckier, from McKinsey & Co, Brussels) call ***Walking on the edge of chaos***, in which a safer middle road is agreed between Top Management (in this context: the “*politicians*”) and I.T. Management through:

- a global mission for the organisation (from which to derive...)
- a business strategy (supported by...)
- an I.T. framework, encompassing among other items:
 - ✓ a technology roadmap
 - ✓ application development methodologies and supporting tools
 - ✓ programming interfaces
 - ✓ communications interfaces
 - ✓ operational rules

In the previously presented graphical depiction of the two basic alternatives, this would mean an agreement on limiting the “*zig-zagging*” associated with the political approach to an area where the variance rate of I.T. applications is kept at a controllable level:



Another issue to be considered in the “*manpower issue*”; a few years ago, a British Computer Society working paper stated that

The time required to change both business processes and I.T. systems may well exceed the time available until the European Monetary Union

This manpower issue can be better understood if we further note that:

- *most organisations do not have enough technical I.T. human resources for complete in-house solutions*

- *budgets are shrinking (witness what is happening in European Public Administrations)*
- *the market is saturated (it doesn't have that many resources available to hire, if any at all)*

The obvious consequence is that when trying to go to market to get help for the Y2K problem and the issues associated with the introduction of the EURO, costs and schedules are escalating !

In this situation where the market has the upper hand (remember: I am a buyer), I am reminded of the immortal Groucho Marx's words:

The key to success in business is honesty and fair dealing

That's clear enough, isn't it ? BUT, he quickly added:

If you can fake that, then you've got it made !

CONCLUDING REMARKS

I am worried by the fact that most Politicians and Top Management, when confronted with these (and other) problems always seem to find comfort in singing their usual mantra: "*This is a great opportunity for (this and that...) !*", even sometimes when everybody else can see that the only opportunity in sight is for... a big mess.

I am afraid we may be in one of these situations, where the face-saving need to show public optimism may lead to insufficient consideration – and thus, public unawareness -- of the (not so optimistic) practicalities involved.

Let us just clearly understand that:

- The introduction of the *EURO* is a non-trivial resource-intensive task for I.T. departments everywhere
- Upon which other significant demands are thrown (i.e., the Y2K problem)
- The in-house and market responsiveness is limited

The "*less-damage solution*" undoubtedly calls for a sort of coalition between (strategic) Business Management and (operational) I.T. Management, agreeing on limits on each one's freedom to decide.

My colleague Mr. Olavi Köngäs (from the Finnish Delegation to TAG and also from the Finnish Ministry of Finance) will end his presentation in this seminar – to which he kindly allowed me an insider's preview ! -- by saying something like (I am not quoting the exact words he will use, just the idea behind them): "*The*

introduction of the EURO will show everybody that the time when political directions and associated schedule decisions could be taken by politicians under the certainty that they would be implemented no matter what, has given rise to a situation where practical implications and restrictions to those decisions needs to be more carefully evaluated beforehand". I wholeheartedly agree !

Again, I am reminded of something I heard from a Portuguese colleague, Mr. António Murta (at the time he was I.T. Manager for the SONAE Distribution Group):

Anyone can tell you what needs to be done (and it's a lot !)

What is really difficult is for anyone to tell you what is NOT to be done (at least because there are not enough resources to do everything...)

This means simply: define your priorities and stick to them.

Annex PORTUGAL AND THE INTRODUCTION OF THE EURO

(Thanks to my colleague Mr. Fernando Carvalho – also from the Informatics Institute, Ministry of Finance – for the information he kindly provided me)

The introduction of the *Euro* is being addressed in Portugal along four main axis:

- Legislation
- Coordination
- Information
- IT-specific issues

Regarding Legislation, besides the adaptation of Portuguese Law in-line with relevant European Directives, in the same way as in any other of the participating Member States, a transition plan was published in the Portuguese Official Journal in November 1997, as a direct result of the political will and the work of several working groups.

Coordination structures have been put in place at national and sectoral level, involving both the private as well as the public sector. Those structures are entrusted with monitoring and managing the transitional procedures; for instance, there are "*EURO Commissions*" at the Ministry of Finance and at the Ministry of Economy.

As far as Information is concerned, both Citizens and Businesses are addressed by the on-going campaigns, targeted at specific social and economic groupings and using a variety of media.

A rather funny example of the impact of these information campaigns is shown by the fact that in one of the weekly TV shows by the country's leading comic entertainer (Mr. Herman José), he has used the images of a televised *EURO* information spot, doubling it partly with different words, to produce an information spot on (of all things !)... group sex. Needless to say, the attention given by TV viewers to that precise *EURO* information spot immediately skyrocketed !

On the IT-specific issues, the most pressing decision was seen to be the choice on how to tackle dual-currency; the chosen options were:

- Immediate real dual-currency for Treasury and Public Debt IT systems and applications
- Gradual conversion of the remaining on an “*as-needed*” basis until 2002
- Until then (2002) have conversions performed through the Financial Sector (banks...); use simulated dual-currency where appropriate

The strategy and procedures laid down in the Transition Plan are globally put under the responsibility of the Ministry of Finance, and encompass four main areas:

- Taxes and Customs
- Treasury and Public Debt
- Budget
- Social Security

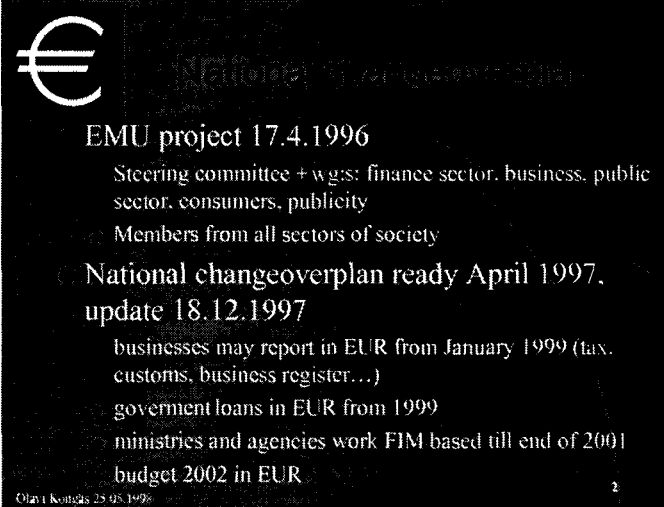


IT PREPARATION

Case studies

by Mr. O. KÖNGÄS – Member of TAG Finland

His presentation is a case study of the introduction of the euro in public IT systems in Finland. The euro will affect many aspects of IT systems, from printouts to customers to data interchanges with external partners. It is both a business and an IT management issue.



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EMU project 17.4.1996

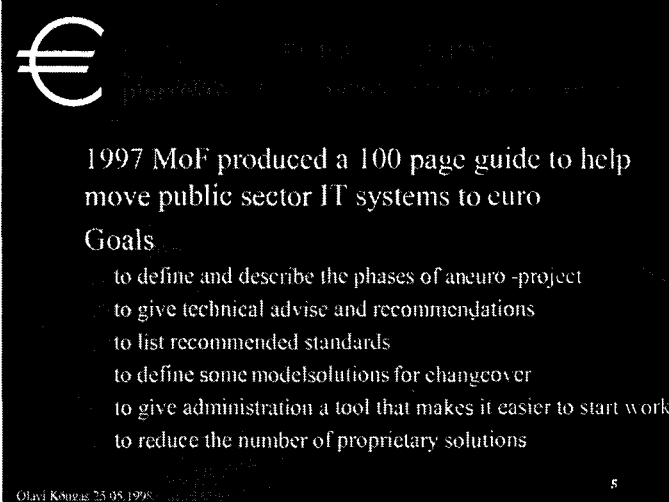
- Steering committee + wgs: finance sector, business, public sector, consumers, publicity
- Members from all sectors of society

National changeover plan ready April 1997, update 18.12.1997

- businesses may report in EUR from January 1999 (tax, customs, business register...)
- government loans in EUR from 1999
- ministries and agencies work FIM based till end of 2001
- budget 2002 in EUR

Olavi Köngäs 25.05.1998 2

Because of the important challenge it represents, the Finnish Ministry of Finance has developed a euro IT guide to help public sectors moving IT systems to the euro.



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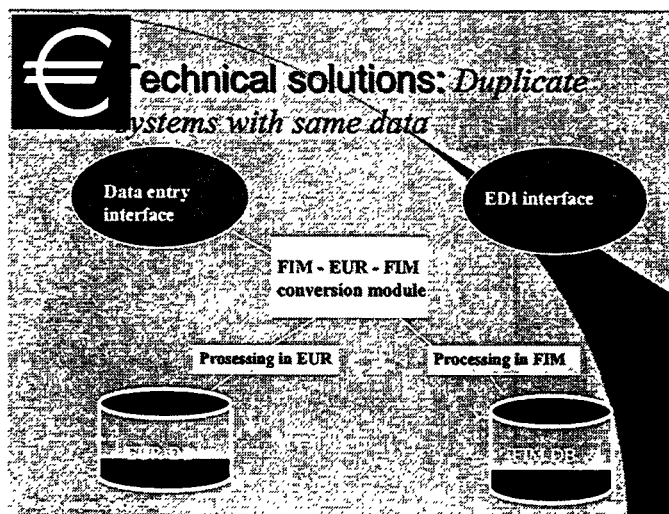
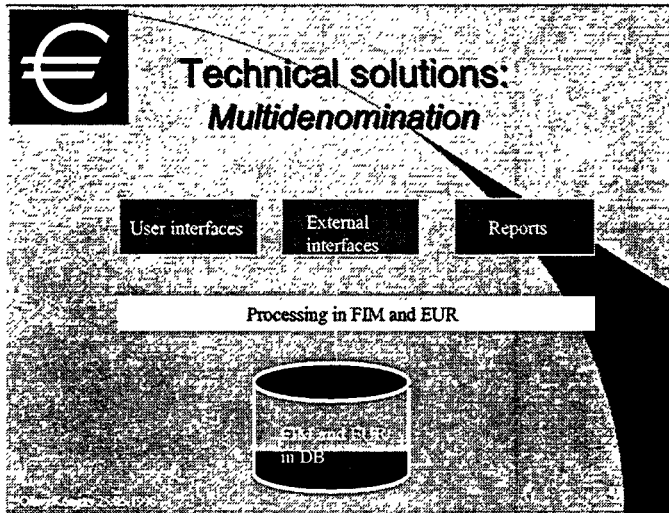
1997 MoF produced a 100 page guide to help move public sector IT systems to euro

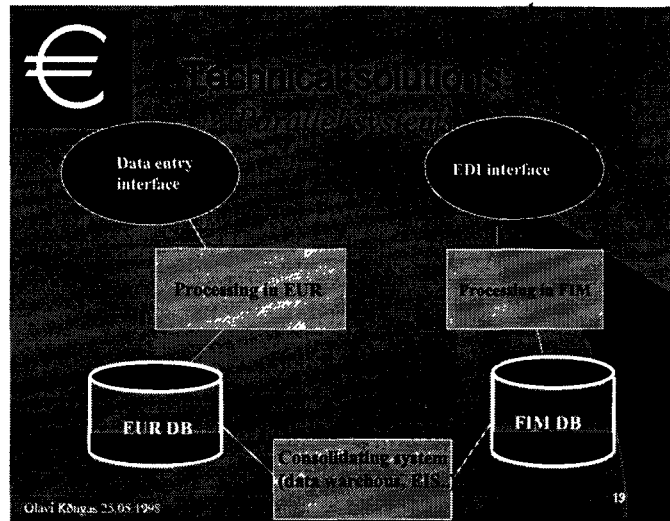
Goals

- to define and describe the phases of a euro-project
- to give technical advice and recommendations
- to list recommended standards
- to define some model solutions for changeover
- to give administration a tool that makes it easier to start work
- to reduce the number of proprietary solutions

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The guide covers all phases from how to analyse the impact of the euro to how to put euro-ready IT systems into use. It offers several technical solutions to deal with the co-existence of the two currencies, the FIM (Fin Marka) and the euro, depending on whether the currencies need to be stored on separate databases or on the same.





Finally Mr. Kõigas as concluded on the lesson politicians have to learn from this experience.

The slide features the Euro symbol (€) and a quote by Raymond Joseph Matecki. The text reads:

"The timing of the Euro is going to teach politicians a very painful lesson: they are no longer in control of many national events. In the pre-computer era when political directives were implemented by human beings, politicians could set arbitrary dates and expect to have their decrees implemented more or less when they wished"

Below the quote, it is attributed to **Raymond Joseph Matecki** in an article titled "The Year 2000 - Isolation: An Operations Approach" with the URL <http://www.year2000.com>. The slide is dated "Olavi Kõigas 25.05.1998" and is labeled "16".



INFORMATIONS SYSTEMS AND APPLICATIONS

Preparing Informations Systems

by Mr. P. DEKKER – Expert DG XV – Internal Market and Financial Services

LEGAL FRAMEWORK FOR THE INTRODUCTION OF THE EURO

The euro will be introduced gradually from 1999 to 2002. On 1 January 1999 the rates of conversion between the euro and the participating national currencies will be irrevocably fixed and the euro will become a currency in its own right. At this date enterprises can begin operating in euro. On 1 January 2002 the new euro banknotes and coins will be put into circulation in substitution for banknotes and coins in the old national currency units.

During the transition period two different currency units will be used within the same Member State. Financial information systems will have to be prepared in order to deal with this unique situation.

STRATEGIC PREPARATION

Planning the changeover of information systems to the euro is not just a matter of dealing with the practical issues and consequences. For many enterprises there will be strategy level issues that warrant attention, issues that will fundamentally affect the way an enterprise conducts its affairs. Changes in the business environment, such as the introduction of the euro, can change the functionality that is expected from information systems. The strategic considerations should be taken into account before modifying those systems for the use of the euro.

To prepare an enterprise's information systems for the introduction of the euro it is important to establish which information systems are affected by the euro. The basic rule is that:

Only systems that are used to process financial information in one of the participating national currencies can be affected by the euro changeover.

This means that many information systems, principally those dealing with non-financial information, will not be affected by the euro at all.

The changeover to the euro is often compared to the year 2000 problem, probably because both are related to information systems and occur at roughly the same time. The basic rule is:

Systems that use dates, directly or indirectly, can be affected by the year 2000 problem.

This means that hardware and software that is not used to process financial information can still be affected by the year 2000 problem.

Since most financial information systems also use dates, they must be reviewed for problems associated with both the changeover to the euro and the year 2000. Additionally, the preparations for the introduction of the euro, on 1 January 1999, and the year 2000 will necessarily need to be made at the same time. Therefore some enterprises have therefore decided to combine preparation for both issues in order to avoid modifying the same information systems twice. When setting up separate euro changeover and year 2000 projects, enterprises should take into account that the projects are sometimes closely related, because:

- For both projects an information systems inventory must be made;
- Decisions to fix or to replace information systems in view of the euro changeover and year 2000 problem cannot be taken independently;
- Both projects relate in part to the same information systems.

However, there are good reasons for managing the subsequent phases of the projects separately, because:

- The two projects are fundamentally different. The year 2000 problem is largely a technical problem in information systems. Whereas the euro changeover requires additional functionality in information systems, and also affects an enterprise in other areas;
- The combined project could be of unprecedented size and complexity, and may become difficult to manage
- Deadlines for the euro and year 2000 projects are different (a delay in the euro IT project should not lead to a delay in the year 2000 fix).

In planning for the euro enterprises need to address the following five aspects that are essential for a successful changeover:

- Euro project team - The euro changeover of information systems is a complicated process that should not be underestimated. Therefore, all but the smallest enterprises need to set up a euro project team that can guide

the them through the changeover process;

- Define the scope and nature of the changeover problem - Describing the existing systems and determining the quality of those systems is extremely important for determining the changeover strategy;
- Determine priorities and strategy - In setting priorities the importance of the information systems and their complexity must both be taken into account. Furthermore, enterprises need to decide which changeover strategy is most appropriate - a 'big bang' changeover, a gradual changeover, or implementation of new information systems;
- Dependency on third party software - Enterprises that rely on third party software have little control over the functionality, timing, quality, and price of the 'euro compliant' software. Therefore, they must reduce the associated risks to acceptable levels;
- Training employees.



TECHNICAL PREPARATION

The introduction of the euro has already been described as a unique event in history. It is this uniqueness that causes most of the problems. The introduction of the euro is unprecedented in the following respects:

- During the transition period two different currency units will be used within the same Member State:
 - ✓ Enterprises will be faced with situations in which they receive financial information in both euro and the national currency units (input functionality problem);
 - ✓ Enterprises may be required to produce financial information either in euro or the national currency unit or in both (output functionality problem);
 - ✓ It may not be possible to change all information systems over to the euro at the same time. This means that information systems working in the national currency unit will have to communicate with systems working in euro (interface problem);

- At a certain point in time enterprises will have to switch over to the euro completely. The historical financial information, denominated in the national currency unit, that an enterprise still needs after the changeover to the euro, must be converted to the euro unit (conversion problem).

In order to deal with these functional problems several strategies are suggested in this document.

There is a wide range of technical details that need to be taken into account when modifying information systems for the euro:

- Rounding - Converting amounts between the euro and participating currency units will unavoidably cause rounding differences. The effects of these rounding differences vary from being merely a nuisance to being able to bring information processing to a halt;
- Interfaces between systems - Developing interfaces between systems that use different currency units is often more complicated than expected because of rounding differences.
- Many enterprises have linked their own information systems to those of other enterprises and they must decide together how and when these systems are changed over to the euro.
- Finally, special care needs to be taken to avoid information systems accidentally combining amounts expressed in euro with amounts expressed in the national currency unit (data pollution).
- Converting historical data - Many financial information systems store the same information more than once. Conversion of historical data requires that all instances of the same data are converted in exactly the same way, otherwise unpredictable results and errors may occur.
- Conversion from the national currency unit to euro involves rounding to the nearest cent. Multiplication of amounts that have been rounded results in multiplication of the rounding differences. Some financial information may be stored in the 'description' fields of a database, converting such information to euro may often not be possible.
- Some financial information may be stored in the 'description' fields of a database, converting such information to euro may often not be possible.
- Two methods exist for converting amounts denominated in another participating currency unit to euro, each of which offers its own advantages. As these methods produce different outcomes, enterprises need to decide which method they prefer and then use it consistently;

- Decimals - Financial information systems that were designed to work with a national currency unit without decimals will need to be modified in order to work with euro cents;
- Thresholds - Very often financial information systems use threshold values that define the actions of the system. These thresholds must be converted to euro to avoid unexpected actions by the information system;
- Displaying two currencies - Displaying information in two currency units at the same time can be difficult because the amount of space (number of columns) available on computer displays and printed reports is limited.
- Spreadsheets - It is impossible to design a utility that can automatically convert spreadsheet models to euro. Therefore the preferred option will often be to rebuild the spreadsheet model, rather than trying to convert an existing spreadsheet model manually.



Experience from the banking sector

by Mr. P. SLECHTEN – Euroclear

Thank you for giving me the chance to share with you the experience we have gained so far at Euroclear with our euro project.

I will remind you of a few business reasons that explain why the euro is a complex technical challenge for the financial sector.

After that I will enter the core of my presentation by sharing with you what has been our experience, what are the main difficulties we have faced and what are the measures we have taken to mitigate the risks related to this project.

Let me now give you an idea of the business reasons that explain why the euro is such a technical challenge.

The first big challenge for the major intermediaries in the securities industry is the famous securities redenomination problem.

During the first week-end of 99, all the European government bonds will be converted from their national currency into euros.

A second challenge will be the adaptation to the TARGET System.

TARGET is the new real time gross settlement payment system that will link together all the national central banks of the eurozone and that will execute real time most of the large value payments in euros.

A third challenge is linked to the famous “no compulsion/no prohibition” principle. During a three-year period, the national currencies continue to exist together with the euro. This will force the banks to offer dual currency services during that period.

Securities re-conventioning is another example of business complexity. The idea here is to harmonise the coupon calculation rules within the EU. This is certainly a positive step to make the European Capital markets more efficient. But initially, it will require a big effort to adapt the current system.

As a last example of complexity, I would like to mention the fact that even with one currency we will continue to have 11 different countries. I couldn't imagine before this project how many programs were using the currency to identify a country or vice-versa.

Now that we have seen some of the numerous reasons that explain why the euro is much more than just another currency, let me share with you what has been our experience at Euroclear.

For Euroclear, the euro represents a twofold challenge:

- The first one is to develop tools to process automatically this famous securities redenomination.
- The second is to make all our existing applications euro compliant.

It represents an effort estimated today at about 42,000 mandays for a total cost of 40 millions \$ to be spent in about 18 months. At peak time i.e. now we have about 300 people working in parallel on the project.

So it is a huge project.

What are the kinds of difficulties we have faced so far. Probably, the most complex we have had to live with is the issue of parallel development.

We run actually 3 major developments in parallel:

- The development of Real Time Settlement platform which represents a 90 millions \$ investment.
- As everyone we have to deal with the Y2K renovation, a 40 millions \$ investment.
- And finally, we have the euro also representing a 40 millions \$ investment.

Running these 3 major projects in parallel represents a huge challenge in terms of configuration management.



We have bought a tool that partly automates the management of the source codes, manages the clashes between the different versions of a same program, etc. But as you know, configuration management is before all a question of discipline, good communication between the teams and monitoring of the compliance with the principles.

Parallel development does not only raise issues in terms of configuration management. It also generates conflicts in terms of resource allocation, availability of the necessary CPU capacity, availability of enough testing environments, etc.

A second major complexity is related to the euro is the timing constraint. The launch date is fixed and conversely to traditional projects there is no way to postpone it.

That's the reason why, at Euroclear, we have installed in front of our building a large euro countdown clock to always remind us the sense of urgency the project requires.

This timing constraint is clearly a source of inefficiency and additional cost.

"There is a tremendous amount of waste when you have to run very, very quickly just to stay in the same place."

A third major difficulty related to the euro development has been, and is still, the uncertainty and lack of harmonisation that have prevailed within the EU on a number of basic rules.

A typical example has been the securities redenomination method. It took a long time to the various countries to define the redenomination method that would be applied and unfortunately the methods of the different countries are not always the same.

A fourth element which is more complex for the euro than for any other project is the resourcing factor.

The euro is a much more complex project than the Y2K which is a huge but relatively mechanical exercise.

Therefore, you need not only a large number of people but also very qualified ones at a moment everyone is looking for the same kind of resources.

Finally, a last area of complexity I want to mention is Communication.

Given the timing constraint and the number of people involved, you have to spend an awful lot of time in passing information around, keeping everyone informed on the same wave length is really critical.

Now that I have summarised the major problems we have and are still facing in the project, I would like to share with you the practices we have put in place to manage them.

First, let's look at the project organisation.

One of the measure we took was to establish a Project Support Office which is a dedicated team responsible for the administration of the project.

These people take care of things like plan consolidation, budget reviews, follow-up of deliverables.

This centralised function very much reduces the administrative burden for the project leaders and allows management to receive appropriate reporting on the project evolution without disturbing the project managers.

The project is so large that it is very important to split it into logical entities of a manageable size. This decentralised approach obviously requires a very strict border management to make sure everyone knows exactly where its responsibility starts and ends.

Given the business nature of the project and the time constraint, a very close collaboration between IT people and the users is critical.

Needless to say that a very close involvement of Senior Management is necessary. This is not the kind of project you manage with a light hand on the tiller.

Anticipation and quick decisions are of paramount importance for the success of the project.

Finally, in our project organisation we will extensively use, especially in the last integration testing, flexible work arrangements like shift-work, on-call policies, and telecommuting. These techniques allow you to extend the working hours. During the last five months of the project, we will work 16 hours out of the 24 thanks to the flexible work arrangements.

In terms of project planning, what is key is to have a process in place to allow monthly consolidation of the plans in order to measure where you are vis-à-vis where you should be.

It is really key to have plans that are extremely detailed. Given the time constraints, you cannot afford too many surprises.

You have to identify the dependencies between the different parts of the project and manage those dependencies by allocating the priorities in function of the critical path of your project.

Finally, a last thing in terms of planning is to incorporate time buffers in all the critical parts of the project.

We are always too optimistic and vis-à-vis your worst assumptions you have still to add additional buffers.

Given the risk of failing on this major project, we have also put in place a series of risk management techniques to try to secure the project and manage the risks.

We have established a central risk register that allows anyone to identify and record potential risks for the project. This risk register is actively managed by the senior management of the project to assess the gravity of the identified risks and take action if needed.

Likewise, we have also established a central bug-fix register where all the errors identified during the different parts of the testing are recorded. This allows to prioritise and follow up the correction work.

We have also developed business continuity plans or “what-if” scenarios in order to anticipate the type of actions we could take if we had to face a major problem.

Obviously, internal Audit is very much involved in the project and at least once a month, they provide the Management with an opinion on the state of the project.

Finally, as I said before, we have established very strict principles in terms of configuration management practices.

Finally, in terms of day-to-day management, there are 2 key principles we try to apply as much as we can:

- Challenge everything by asking tens of questions to reduce business requirements, to validate plans and design options.
- We also try to anticipate as much as possible using techniques such as walkthrough sessions to validate the understanding of the business requirements, the data needed, etc. ...We also apply intensive independent code review and of course we test as early and as much as possible. 50% of our budget is devoted to testing.

As a conclusion, I would say that the euro is indeed a very complex and risky project that necessitates the application of very thorough risk management techniques.

But if there is one thing that the euro has in common with other IT projects, it is that devil is here also in the details. But here the management does not have its usual last resort weapon which is to postpone the launching date. That is the reason why this project has to be managed with a very strong hand on the tiller.



INFORMATIONS SYSTEMS AND APPLICATIONS

Central Banking IT issues

by Mr. C. BOERSCH – Deputy head of EMI's

The EMI, the ECB and the timetable for the introduction of the euro

The overall IT issues and tasks faced by the EMI were from start identified to take two main directions:

- establishing of the institute's own technical infrastructure
- the preparatory work for Stage Three of EMU.

Halfway through the life of the EMI, focus moved from the former to the latter. Lately, the establishment of the ECB's technical infrastructure has become another main task. From the outset, it was recognised that IT issues would have to play a significant role in the preparatory work.

Consequently, the EMI's IT function was established as one of four main organisational units with its own senior member of EMI Management. In the preliminary organisational set-up of the ECB, it is proposed that IT issues will be placed equally central as one of the Directorate Generals.

The complexity of developing ESCB systems - project organisation

The European System of Central Banks, the ESCB, is made up of the central banks of the Member States of the European Union (the NCBs) and the ECB itself. For most issues, the ESCB will rely on decentralised operations, i.e. carried out by the NCBs, but with central monitoring and decision making at the ECB. Several expert groups, in the EMI called Sub-Committees and Working Groups, have been preparing issues for EMI Council decision in relation to the EMI's preparatory work. This work led to establishment of a large number of projects, of which the ones with significant IT content have had our particular attention.

A significant challenge was set in ensuring both sufficient user/business side and IT involvement from the 15 + 1 institutions in 15 countries in order to guide and lead-manage the work, while at the same time ensuring that the EMI was in a position to carry out the ongoing project tasks. The differences in starting points, in IT architectures, in size of the individual institutions and in tradition and business practises have been significant.

A general model for project organisation has proven an indispensable tool in ensuring that development of projects have been able to move forward despite these differences.

ESCB Systems

The main ESCB-wide IT systems include a managed bandwidth network among the ESCB institutions. This network was established as a part of a teleconference replacement project. The teleconference application itself, allowing secure multiple voice conferences among the connected institutions, forms a cornerstone in ESCB-wide voice communications. On top of the physical network, an ESCB-wide communications infrastructure, called the ESCB-Net is put in place. The ESCB-Net comprises both synchronous and asynchronous data communications services to applications. Among the main applications are systems for the support of the decentralised conduct of monetary policy open market operations based on tender operations, monitoring of bilateral money market and of foreign exchange interventions, exchange of non-statistical (mainly operational) data, exchange of statistics and information systems support for a decentralised management of the ECB's foreign exchange assets. Last but not least, the interlinking of RTGS systems making up the TARGET system is a major undertaking of the ESCB institutions.

A brief overview of TARGET

The TARGET system is composed as an interlinking of national real time gross settlement (RTGS) systems in all Member States. TARGET, which will operate in euro only, will provide the means for safe and fast transfer of large value payments between credit institutions, and thereby providing the 'virtual plumbing' to allow a smooth flow of funds that is a precondition for the effectiveness of the single monetary policy within the euro area.

ECB Systems

Internal projects are under way to set up a number of policy support systems, operational capacity for monetary policy and foreign exchange operations as well as administrative systems for the ECB. The latter are extensions or replacements of more basic systems implemented for the EMI's use.

Overall testing of ESCB systems and procedures

In order to ensure a smooth start of live ESCB operations from 1 January 1999, both the correct functioning and the use of systems and procedures must be thoroughly tested. A comprehensive testing plan has been derived to test both

primary and contingency systems and procedures. A first phase, during July and August, will aim at testing all major primary functions within the individual business areas. Phase two will be carried out in September where the contingency solutions will be subject to a separate testing. The third and final phase will take place in October and November and involves 'dress-rehearsals' of entire ESCB business processes.

Links with Banking Industry

Although the main focus of the EMI's preparatory work on the IT side has been internal to the EMI/ECB and the central banks of the Member States, the NCBs, some issues have necessitated to maintain links to the banking industry. Whereas the largely decentralised approach followed for the operational issues has meant that links between credit institutions and national central banks are preserved, the change to a new single currency and a (temporary) need to be able to handle euro and national denominations in parallel does require wide range changes to IT systems. Furthermore, a number of specific conversion and convention issues would need clarification.

Some of the outstanding problems

Clearly, the Year 2000 issue is a concern for the ECB and the national central banks. However, the quite recent establishment of the EMI (1994) - and presently of the ECB - has meant that the millennium issues have been of less relative significance than for most other companies and organisations. The NCBs on the other hand have in general faced the same magnitude of problems and the need for widespread adaptation of legacy IT systems as elsewhere in the financial industry.

Scarce staff resources due to recruiting problems has been and continue to be the single most crucial problem in the EMI/ECB's IT preparations. Despite competitive salaries and benefits in comparison to public and many private enterprises, it has proved very difficult to recruit sufficiently fast.



INFORMATIONS SYSTEMS AND APPLICATIONS

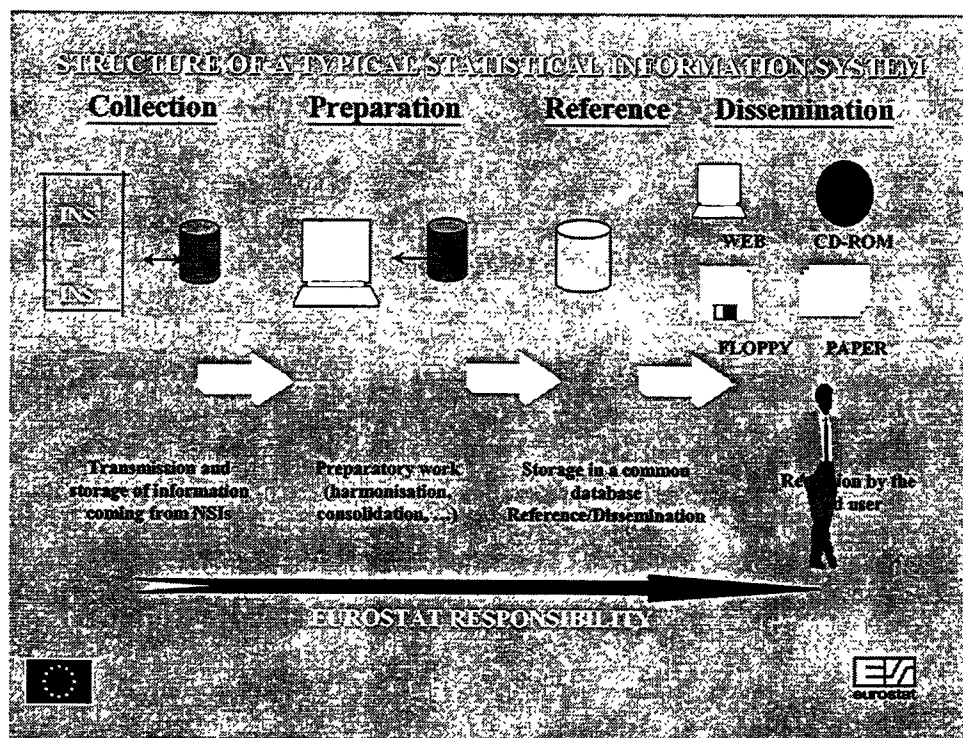
Impact on statistical systems

by Mr. D. BYK – Adviser EUROSTAT

Mr. Byk works at Eurostat, a European Commission service in charge of providing a high-quality statistical information service.

It is important to co-ordinate the adaptation of information systems to the euro in Member States and Eurostat because Eurostat will be ready to receive data in euro starting from 01/01/1999. The first problem is due to the transition period, which means that some countries will continue to send figures in national currencies.

For the Commission, the euro becomes an official currency by 01/01/1999, and so the euro must be used in the statistics. This implies technical changes (tools, programs, databases).

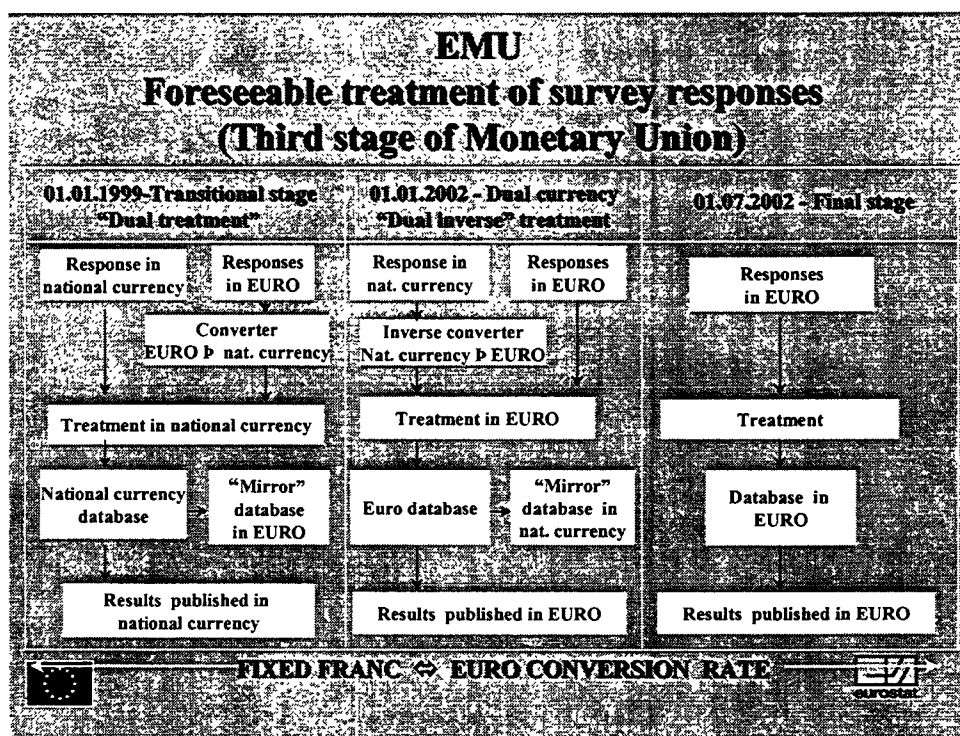


There are also changes in the presentation of statistics because of the new consolidated figure: the EURO ZONE (EURO-11).

The advantages of a single currency is a greater comparability (harmonization) and greater speed of provision.

The inconvenience is the difficulty to compare with historical data (break of time series).

For the political decisions with regard to the EMU, it will be necessary to have statistics of a very high quality.



DISCUSSION AND CONCLUSIONS

Chaired by Mr. Fernando de ESTEBAN – Director of Informatics

Given the scope and magnitude of the challenge facing the public sector IT community in adapting European Information Systems to the euro and the political importance of completing these systems on time the symposium:

- I. Confirms the need for Public Sector Information Exchange on the euro and IT covering council regulations, national regulations, best practices and sectorial experiences;
- II. Requests the Informatics Directorate to manage and animate on EUROPA an interest group which would be the forum for the exchange of information and experiences between Member State public administrations and the Commission on adapting European Information Systems to the euro;
- III. Recommends that the users responsible for the systems, the informatics services of the Commission and their correspondents in the Member State administrations prepare detailed specifications and plans for the adaptation of their European Information Systems to the euro;

Invites the Informatics Directorate to organise a second symposium on the adaptation of European information systems in June 1999 to review progress and promote further cooperation on the IT systems necessary for the euro in the public sector..





AEIS - EURO Symposium

‘Adapting European Information Systems to the EURO’

Centre de Conférences Albert Borschette, Brussels, 9 June 1998

Documents

PREPARING FINANCIAL INFORMATION SYSTEMS FOR THE EURO

Pieter DEKKER

European Commission

Directorate General XV - Internal Market and Financial Services

<http://www.ispo.cec.be/Y2keuro>

RECOMMENDATION FOR THE PLACEMENT OF THE EURO SIGN ON COMPUTER KEYBOARDS AND SIMILAR INFORMATION PROCESSING EQUIPMENT

Lazaros TOSSOUNIDIS

European Commission

Informatics Directorate

EURO AND IT: SHARING KNOWLEDGE AND PRACTICES

A. DI MAIO

European Commission

Directorate General III - Industry

INFORMATICS ARCHITECTURE

P. GARANT

European Commission

Informatics Directorate / User Relations and Informatics Coherence

CONNECTIVITY GUIDELINES FOR ELECTRONIC DATA TRANSMISSION WITH THE EUROPEAN COMMISSION

G. SCHÄFER

European Commission

Informatics Directorate / Data Transmission Service





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Centre de Conférences Albert Borschette, Brussels, 9 June 1998

Useful Internet Sites

<http://www.europa.eu.int>

the European Union’s internet server with the Parliament, the Council, the Commission, the Court of Justice, the Court of Auditors and other bodies of the European Union (EU).

www.europa.eu.int/comm

with home pages of the directorates-general (DG) and services of the Commission.

www.europa.eu.int/euro

home page of the EURO with a round-up of the key Protocols, Declarations, Treaty articles, Regulations and Summit decisions governing Economic & Monetary Union (EMU).

www.ispo.cec.be

the home page of the European Community (EC) Information Society Project Office.

www.ispo.cec.be/y2keuro

the home page of the information technology (IT) challenges of the century Year 2000 and euro.

www.ISPO.cec.be/y2keuro/euroit.htm

the site contains references to useful information about the practical information technology (IT) issues arising from the introduction of the single European currency.



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