

**PHOTIS NANOPOULOS**, director at Eurostat, responsible for 'statistical information, research and data analysis, technical cooperation with Phare and Tacis countries', explains to *Sigma's* GLEN CAMPBELL what a huge challenge the New Economy poses for statisticians. How should we go forward on this e-challenge? New methods, closer collaboration, learning from others...? He sheds light on some of the surest paths to follow ahead.

# New Economy: Back to the future



**M**our interview by setting the scene: "The New Economy (NE) has emerged from transformations sweeping across the whole of society. The first is technology: it has allowed new ways of working, communication and interaction among people. The second is the spread of democracy, mostly stable International Relations, investment attraction, strong commercial interactions, and so on.

"Finally, the third is the consequence of the second: the move towards the new order of commercial relations with the creation of the GATT and the WTO. This allows new interactions among people and the new technologies are at the centre. The essence of all these is that we are dealing with a digital economy – a 'Pythagorean' economy in which everything can be expressed by numbers."

*What does all this mean for statisticians?*

"It is obvious that for statisticians, this is a huge challenge. Everything – every single activity and measurable variable – takes a small but significant 'e' at the front.

"We are clearly entering a new age of statistics. One only has to glance at the benchmark indicators in the eEurope Action Plan (see article on page 33). It includes the speed of connections between national research networks, the level of awareness of public Internet access, among others."

## Changing approaches

He continues, "today's society – the New Economy – is not just about new products, but new economic patterns too. This is why the classical 'production function' and 'demand-offer' approaches need to give way to 'flexibility and adaptability' and 'innovative solutions versus process and product quality'.

"I would say that as far as information society products are concerned, nobody is asking for the same quality as in the case of a car or a watch. The issue here is not the product's quality per se, but how quickly they are produced. For example, if Windows crashes, people will complain, but not in the same way as if a Volkswagen breaks down. Why? Because Windows' users are more interested in the service offered by the program rather than its robustness."

That's not all, Nanopoulos leans forward and says emphatically, "we should also change the way we are producing statistics. For this, we have to abandon the old way of doing this through surveys and registers and go further towards putting together heterogeneous information in order to build as homogeneous data as possible. This is a new skill that, in fact, we could call a science itself."

## Managing diverse data

He adds: "one or two decades ago, there was only about 10% of the data we now have today, but there has been a proliferation of different sources and types. The recent inventories of data show this plethora very clearly: private companies, statistical observatories, associations and other international organisations. All this is yet another manifestation of the information society.

"But this is becoming a chaotic situation and poses the problem of harmonisa-

tion – one that we will face more and more in the future. Given this challenge, we are developing methods to have the ESS well established and seeing how non-survey data can be screened in order to use data, such as those from consortia research projects, which are not 100% stable. And this is a very dynamic area of what I would call 'methodological statistics'.

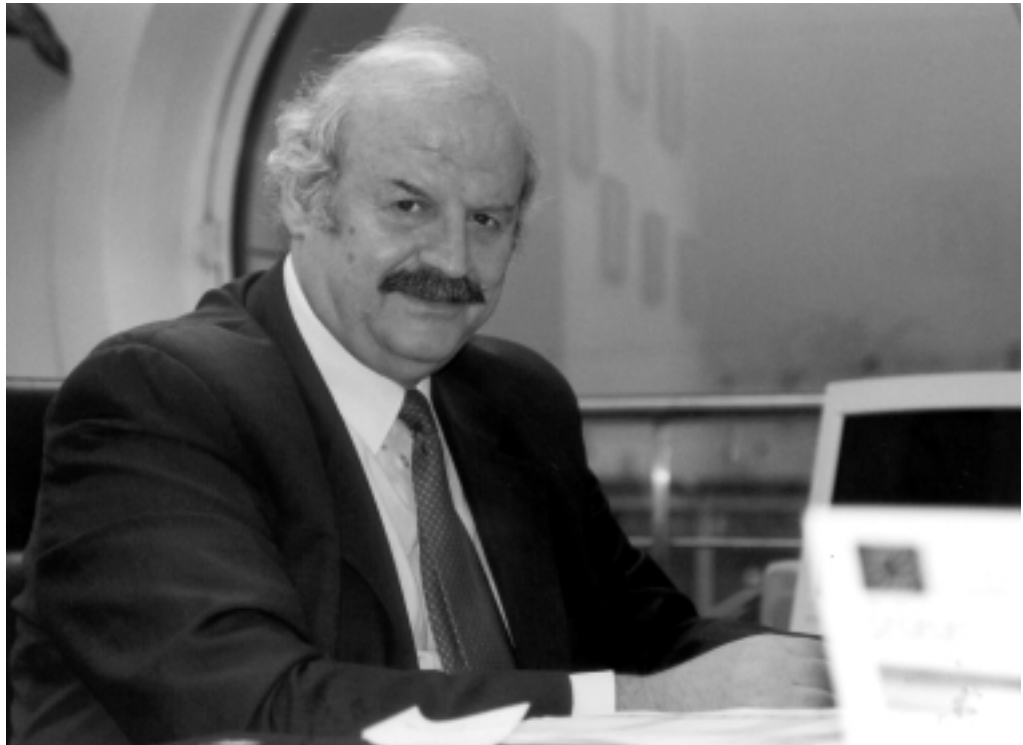
"We need to operate in two ways. First, we should incorporate the results of the Research and Technology programmes in our systems. We have to bring in all types of results we can obtain on the impact of the information society: life-styles, societal changes, working and purchasing patterns and so on.

"What's more, our whole system has to become more electronic in our processes and ways of working. There has been a proliferation of data collection, well, why not have a proliferation of data availability too! We can really increase our productivity if we incorporate new technologies and make data available, for example, on the Internet."

### Towards a new approach

*How do you approach measuring the New Economy?*

"The classical approach of official statistics – defining a sector and then the socio-economic variables, applied in that sector – will not work effectively in the NE. This is because the NE is



**Photis Nanopoulos** was born in 1943 in Crestena, Olympia, Greece. His multi-domain fields of study and work accounts for his way of looking at statistics today, some major ideas of which have been sketched out here. First an aircraft engineer, then a mathematician in France, he completed doctoral studies in information theories, became a statistician at Berkeley, lectured on statistics in France and Greece to economists and students of other disciplines.

He came to Eurostat in 1983 when he became Director of 'Business Statistics'. After 14 years there, he migrated to Directorate A (statistical information, research and data analysis, technical cooperation with Phare and Tacis countries) in 1997 as Director.

Apart from the Information Society, working with the Candidate Countries to help them adapt their statistical systems is another of his strong interests and one in which he can play a dynamic role in Directorate A – his experience of his own country's accession being indispensable.

characterised by a rapid change in the products, the processes and organisation of firms. The changes are so fast that a statistical system following the classical approach, by the time it is set up, becomes obsolete.

"We only need to look at the postal and telecommunications sectors and how often they have introduced new products and services, as well as other sectors such as television and electricity offering complementary services.

"This illustrates the variety of things we can observe changes – prices, shifts, how much households are incorporating new tools, how many products are sold, e-commerce – both business to business (B2B) and business to consumer (B2C).

"We have already moved some way in measuring these, but it takes time and it cannot really be said yet that we are producing data – although there is development on business and telecommunications statistics

(see article on p 16) and through consortia."

### Easier data collection

*Given today's technical age with increasingly sophisticated computer programs, will data collection become easier for statisticians?*

"Of course! Data collection has never had it so good – the computerised age opens up countless data sources and accelerates

collection. There are numerous examples of systems and computer programs that facilitate data collection: XML (Extensible Markup Language), computer-aided interviews, software-produced questionnaires, and so on. Also, we should note that systems will be able to communicate with ease and independently of human involvement. It is just a matter of designing the best automatic system.

"But we should keep two things in mind", Nanopoulos highlights. "The first challenge concerns data comparability. Data are built in different cultural environments and languages so we need some convergence to make the concepts more comparable.

"Second, access rights will be another challenge in terms of the legal questions related to accessing this information such as copyright and confidentiality. We will have to handle these questions very rapidly if we want to avoid information blockages, ensure data protection rights etc.

"The challenge for us is to work on ex-ante harmonisation where data are compiled on the basis of common methodologies and definitions." This contrasts with ex-post harmonisation where data are collected according to the different systems of Member States."

Mr Nanopoulos asks me whether I am British and drive a car, and goes on to say: "If we want motorways giving access all over Europe, we need to answer the questions, are the cars

compatible, are road signs understandable to everyone, do we drive on the same side...?"

### Converging classifications

A big issue at the moment is classifications. Linked to its dominance in the Information Society, the United States has been a leader in this domain's statistics and classifications. Therefore, if the EU's ambition is to become an equal player in the global market place, it should try to play the same ball game.

This is why Eurostat is working with North America to achieve convergence between the European NACE (Statistical Classification of Economic Activities in the European Community) and the North American NAICS (North American Industrial Classification System). I asked Mr Nanopoulos to shed some light.

"Both users and producers in this statistical area are pressing for rapid changes in classifications since the NE is introducing a multitude of products and services that do not yet have an appropriate home in terms of classifications. And despite the fact that the next chance to update NACE, the European classification system, will not be until 2007, we can still start converging now in anticipation.

"We need to shift from the 'production function' and 'demand-offer' approaches to those of 'flexibility and adaptability' and 'innovative solutions versus process and

product quality'. This should be in our mind when we are revising classifications."

Nanopoulos continues, "classifications must follow changes. If we ask ourselves how often we should have updated NACE to have a modern classification system capable of today's requirements, it would have had to have been about... every two years.

"For the NE, NACE still bundles together computer services and household services in the same basket so that there is insufficient discrimination. But we need it – and fast. Of course, we should not overlook the problem that by changing classifications we risk losing comparability within time series, so there is an obvious trade-off here to be considered.

"I understand the needs of national accounts and macroeconomic approaches – they need stable classifications in order to establish long series. But, at the same time, what we need is to open our ways of thinking and a new culture for observing the NE. We should update classifications by using a flexible bottom-up approach. With the right means we can build very swiftly the necessary system to do more than just follow developments – but actually anticipate them.

"The North American classification system is clearly much more developed compared to our NACE. The breakdowns go into the finer details to reflect the realities

*"We can really increase our productivity if we incorporate new technologies and, for example, make data available on the Internet".*



of the NE much better. However, while we can learn a lot from NAICS, it is not without its own problems. Like us, the Americans could also change their way of thinking in terms of the dominant role played by national accounts in official statistics and how it influences the way classifications are made.

"As for the nuts and bolts, we already have provisional manuscripts which help steer discussion in the working groups. We intend to add additional classes concerning, for instance, the wholesale of computers. In addition, explanatory notes will be expanded for items such as Internet access providers."



## Research projects are key

One of Directorate A's major axes of work is science and technology statistics with research projects for measuring the NE. And they are in the middle of defining and developing indicators that will help both policy-makers and business to know what is happening. These indicators will, after screening, be ready for incorporation into a more regular production system.

The NE is, in fact, a research topic in the Fifth Framework Programme and there are a number of projects that it finances from

which results are expected over the next two years.

## ...SINE

*The initiative on Statistical Indicators for the New Economy (SINE) is playing a fundamental role, isn't it?*

"Yes. We also want to encourage other research on R&D topics especially through the SINE initiative in association with the Commission's eEurope Action Plan. SINE, a think-tank, brings together NSIs, enterprises, associations and other organisations in consortia to discuss the scope and framework for NE statistics.

"Today, we have several major projects, such as

Newkind (New indicators for the technology-based economy) and EICSTES (European Indicators, Cyberspace and the Science Technology Economy System) – and the number is growing. Their results will then feed into the various domains of the ESS to produce concrete indicators. Results are expected in one year's time and should help complete the puzzle and perhaps bring new ideas.

"This approach – using consortia – is faster and very promising but it cannot replace the regular statistical system; it can only help pave some of the way."

*R&D statistics are providing information on the NE and on the significant role of R&D in the information society, aren't they?*

"Certainly. Let's not forget that R&D is at the basis of efforts to boost the economy. We are trying to reorient existing indicators from their original classifications to today's situation.

"They cover several aspects in the area such as expenditure, personnel and other resources. Patents are another area in terms of measuring the output of research. There is also the Community Innovation Survey (CIS), carried out every three years, but which we will accelerate – to see how innovation is incorporated in European business.

"These 'innovation indicators', 'patent indicators' and 'science and technology indicators' complement the business and social areas

and thus build up a global set of NE indicators."

## Democracy... and photography?

Mr Nanopoulos highlights statistics' place in society: "we cannot have democracy without statistics. The primary objective of national and European statistical systems is to provide all the data necessary for ensuring democracy and improving society in all domains – economy, science, and so on. In short, we are the soldiers of democracy."

Pointing at some photographs on the wall, Mr Nanopoulos shares his view of what the statistician's role should be: "I liken our task to that of photographers: choosing the right film to give the best possible results given the conditions available; measuring without bias, without misleading the user; covering the most important issues..."

*The interview brought one thing home to me: New Economy statistics are on the right path, but the European Statistical System still needs some fine-tuning. Borrowing the closing words of Mr Nanopoulos, "we are entering a period of profound transformation and in order to make it work we have to work very hard as statisticians to accompany it on the path before us." This sums up the heart of the e-challenge for Europe's statistics today!* ■