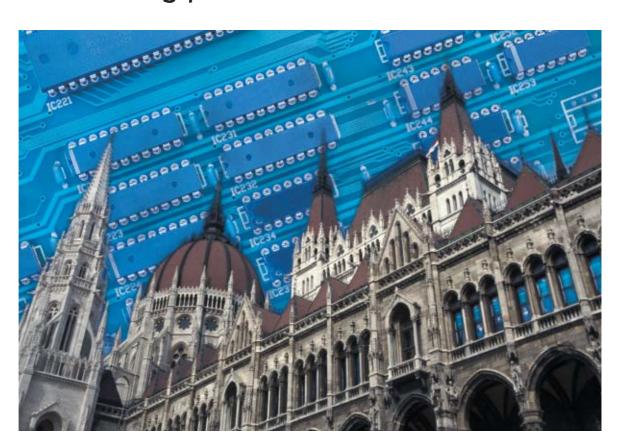# E-government in Central Europe
Rethinking public administration

**A white paper from
the Economist Intelligence Unit
sponsored by Oracle**

Preface

E-government in Central Europe: Rethinking public administration is an Economist Intelligence Unit white paper, sponsored by Oracle.

The Economist Intelligence Unit bears sole responsibility for the content of this white paper. The EIU's editorial team conducted the interviews, executed the quantitative analysis and wrote the paper. The findings and views expressed in this paper do not necessarily reflect the views of the sponsor.

The research and analysis for this white paper drew on two main initiatives:

● The Economist Intelligence Unit built and populated a comprehensive and robust e-government rankings model covering 10 Central European countries and Turkey. EIU country analysts conducted secondary and primary research to generate scores for their respective markets, resulting in an overall ranking of Central European countries.

● The EIU also conducted in-depth interviews with direct participants in Central Europe's e-government development, both in the region and in the European Commission.

The author of the report was Ross O'Brien and the editor was Denis McCauley. Nicholas Redman of the Economist Intelligence Unit managed the population of the e-government rankings model and the generation of scores. Mike Kenny was responsible for design and layout.

Our sincere thanks go to the interviewees for sharing their insights on this topic.

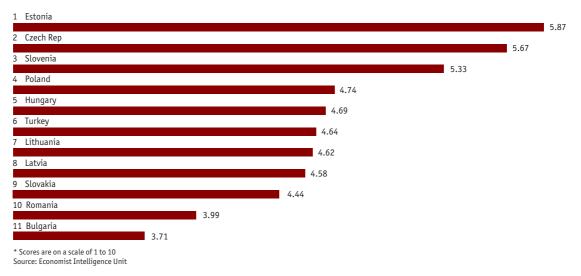August 2004

Executive summary

As part of a broader effort to encourage its citizens and businesses to go digital, the European Union is exhorting member governments to practice what they preach: to shift their own operations to electronic—and particularly online—platforms. Having signed on to ambitious goals of information society development as part of the EU accession process, most of the ten new and candidate EU members have taken up the e-government challenge with enthusiasm.

The e-government agenda is being pursued throughout the world to one degree or another, but it has added significance in Central Europe. The region is just beginning to emerge from a period of far-reaching political and economic transformation following the collapse of repressive communist systems. For these countries, e-government is more than simply a new channel of delivering services; it offers an opportunity to achieve a quantum leap in transparency and efficiency of administration, which the region's leaders have promised their citizens since the early 1990s.

In order to gauge their capacity to implement such change as well as their progress to date, the Economist Intelligence Unit, sponsored by Oracle, has conducted a wide-ranging analysis of the e-government experience in the Central Europe region. To express the results of our analysis in comparative fashion, we have generated a set of e-government rankings based on a robust and comprehensive quantitative model. The rankings cover the ten new and candidate EU members from Central Europe, as well as another prospective member, Turkey.

Central Europe e-government rankings*

Rank	Country	Score
1	Estonia	5.87
2	Czech Rep	5.67
3	Slovenia	5.33
4	Poland	4.74
5	Hungary	4.69
6	Turkey	4.64
7	Lithuania	4.62
8	Latvia	4.58
9	Slovakia	4.44
10	Romania	3.99
11	Bulgaria	3.71

* Scores are on a scale of 1 to 10
Source: Economist Intelligence Unit

Among the key conclusions, presented in this white paper, are the following:

● **There's no e-government without connectivity.** Poor ICT (information and communication technology) infrastructure in the home and workplace remains the critical impediment to e-government progress in the region. Sophisticated online public services achieve little if people cannot access them. Mobile services are well developed, but reliable broadband connections are limited and expanding only slowly.

● **But vision and commitment count for something.** Infrastructure aside, several of the region's governments receive good marks for e-government vision and purpose, as well as efficient strategy development and implementation.

● **The e-government leaders—Estonia, the Czech Republic and Slovenia.** Although held back by connectivity problems, these countries have gone well beyond e-government window dressing and compare favourably in many areas with the rest of the EU, particularly in shifting public service delivery online.

● **E-democracy is part of the compact with citizens.** E-democracy initiatives tend to take second priority in the region to improving public services, but a few governments—notably that of Estonia—have scored significant gains in soliciting digital feedback from citizens.

● **Beware the 'e-elite'.** The combination of growing online service sophistication with poor infrastructure creates a socio-political risk for the region: that the influence of the infrastructure "haves", essentially the current political and business elite, expands and becomes entrenched, effectively widening the digital divide rather than narrowing it.

Lastly, digital government by itself does not mean smart government. Policymakers in Central Europe appear committed to the greater good of delivering better public services and information, and to doing so via digital means. Given the infrastructure problems and countless other spending priorities, however, governments will be well-advised to focus digital initiatives on areas most in need of change. Traditional information and service delivery systems are likely to retain an important role for the foreseeable future.

Central Europe's e-government leaders and followers

Our e-government rankings cover the ten new and candidate EU members from Central Europe, as well as another prospective member, Turkey. They derive from scores on a ten-point scale, reflecting an assessment of developments within seven inter-related sets of criteria:

● Connectivity and technology infrastructure: development of the Internet and networks to access it
● Business and legal environment: the laws and governance frameworks that facilitate trade and public sector service delivery through electronic means
● Education and skills base, both e-specific and overall
● Government policy and vision
● E-democracy: the use of electronic means to promote public participation in governance
● The development of online service and delivery channels for both citizens and businesses

(See the box on page 7 for a full description of the ranking criteria and methodology.)

Within these categories, clear performance 'bands' are emerging in the region. The first comprises the e-government leaders—Estonia, the Czech Republic and Slovenia. In these countries, governments have worked hard to create digital channels for citizens and businesses to interact and conduct transactions with the state. As one indicator, e-marketplaces are relatively well-developed and used increasingly for procurement in all three economies.

Moreover, these governments have built coherent, well co-ordinated e-government blueprints that map to the broader objectives of the state. Slovenia, for

example, is following a specific, precise and measurable e-government action plan that will guide the adoption of e-commerce practices in all areas of public service through to the end of this year. To provide institutional clout, the e-government leaders have also centralised policy implementation within either cabinet-level departments or newly formed information society ministries (and others in the region have followed suit).

A second band emerges in the middle of the ranking spread, consisting of Poland, Hungary, Turkey and the other two Baltic states, Lithuania and Latvia. In these markets, clear and actionable policy tends to lag, and like most of the region, the enabling infrastructure penetration—phone lines, Internet access—is poor. Development of digital channels for service delivery is also slightly less sophisticated, although there are some areas of distinction, notably Turkey's e-democracy scores, which reflect admirable—if uneven—efforts by several ministries, regulators and

Central Europe e-government rankings

Rank	Country	Overall score (out of 10)
1	Estonia	5.87
2	Czech Rep	5.67
3	Slovenia	5.33
4	Poland	4.74
5	Hungary	4.69
6	Turkey	4.64
7	Lithuania	4.62
8	Latvia	4.58
9	Slovakia	4.44
10	Romania	3.99
11	Bulgaria	3.71

Source: The Economist Intelligence Unit

E-government second fiddles? The EU's new members beg to differ

By most assessments, including our own, the EU's new and candidate members taken as a whole do not reach the levels of e-government performance reached in Western Europe. Scratch beneath the surface, though, and one finds several areas where Central Europe's e-government leaders stack up rather well.
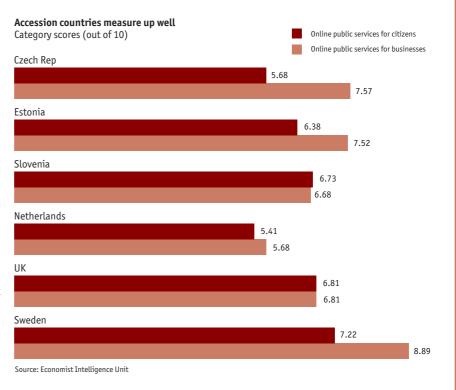
Given the critical importance of fixed, and particularly broadband, infrastructure to a country's e-government capacity—and consequently its high relative weight in our scoring model—it is not surprising that most Central European countries with their low connectivity levels lag behind Western Europe. Deficits in skill levels and the business and legal environment also take their toll, even in our fast-movers. Infrastructure problems aside, though, several Central European governments have demonstrated policy commitment and implementation of e-government strategies that match and in some case exceed that shown in the rest of the EU. Estonia, for example, was one of the first countries in the world to draft an e-government strategy, in the mid-1990s.

When it comes to implementation, the gap between the best of Central Europe and Western Europe diminishes measurably. The Economist Intelligence Unit's e-government ranking model assesses European countries' online service availability and sophistication according to the EU's own scoring system. Sweden, consistently rated one of Europe's top three e-government performers along with Denmark and Ireland, clearly surpasses the new member countries in delivering online services to businesses, but Slovenia and Estonia compare nearly as well in citizen-oriented services. In both categories, Central Europe e-government leaders match the performance of the United Kingdom and surpass that of the Netherlands, neither of them 'e-slouches' in any sense.

Estonia, Slovenia and the Czech Republic, then, get high marks in any Europe-wide comparison for e-government commitment, creativity and follow-through. It is also no accident that Estonia's citizen web portal and the Czech e-procurement platform, for example, are being studied throughout the EU for the lessons they can provide. As for their impact on the overall quality of public service delivery, however, there's no getting past those infrastructure hurdles.

Accession countries measure up well
Category scores (out of 10)

- Online public services for citizens
- Online public services for businesses

Czech Rep
5.68
7.57

Estonia
6.38
7.52

Slovenia
6.73
6.68

Netherlands
5.41
5.68

UK
6.81
6.81

Sweden
7.22
8.89

Source: Economist Intelligence Unit

other organisations to publish information and solicit input by media and citizens.

Less developed e-government markets constitute the third and lowest band, with Bulgaria bringing up the rear. Bulgaria's experience is indicative of the problems faced by the others in this category. To be sure, there are efforts to digitise over 20 key government services by next year. But Bulgaria's inability to significantly improve access to the Internet, or bring down the cost of public key infrastructure (PKI) like digital certificates has meant that however well-meaning the overarching policies, take-up of e-government services has been disappointingly slow.

Romania also falls into this band, suffering from the worst infrastructure of the bunch. At the same time its policymakers deserve credit for a well-thought-out e-government strategy and implementation plan, which has reaped particular fruits in delivering online services to businesses.

Although not ranked, we have also included in our analysis—for comparative purposes—the other new EU members, Malta and Cyprus, as well as more distant EU hopefuls such as Croatia and Macedonia. Of these, Malta exhibits e-government vision and strategy, as well as online service depth and availability, that are comparable to the leaders. Croatia is off to a late start to e-government planning, but with decent infrastructure and good skill levels it has potential commensurate with our middle band of countries. The governments of Cyprus and particularly Macedonia, both beset with political problems, have treated e-government as a secondary priority and also suffer

from important IT infrastructure deficits.

Even on a global or Europe-wide comparison, it would be wrong to characterise Central Europe as harbouring e-government "laggards", with the possible exception of a few countries that we have not ranked. Many of the region's governments have demonstrated no less clarity of purpose and planning acumen than several of their West European peers. Paul Timmers, head of e-government in the European Commission's Directorate-General Information Society, observes that the region is justly proud of its e-government experience, and that governments in each of our 'bands' have established practices in one or another aspect of e-government that are worthy of emulation in the rest of the EU.

Some results are showing through. On the 'supply side', there has been a profound increase in the availability of government information disseminated to citizens electronically—an eEurope progress report from the European Commission notes that nearly a quarter of all information services are available online throughout the new member states, and nearly 20% of channels enable two-way interaction between government and constituents.

On the 'demand side', in an effort to reduce corruption and trim public procurement costs, e-marketplaces have been widely established, and to good effect: the Commission reports that the Czech Republic conducted over €35m worth of business in 2003 alone over its "e-trziste" platform, and even relatively poor e-government performer Romania has estimated savings of nearly twice that much over its online purchasing platforms.

The e-government rankings: criteria and methodology

Seven criteria were examined for each of the countries ranked, collectively comprising 35 separate qualitative and quantitative indicators. Quantitative data—largely related to technology adoption and economic statistics—were weighed alongside qualitative scores generated by EIU country analysts. These scores were based on primary and secondary research, involving a review of regional and in-country official documents outlining e-government policy and programmes, observed trends on progress, and in depth interviews with programme managers and other direct participants in Central Europe's e-government development. Each of the seven criteria were weighted based on a judgement of their relative importance to e-government capacity-building and progress. Ranks were then compiled for each criteria and combined to provide an overall score.

Connectivity and technology infrastructure (20% weight)
E-government implementation is futile without the ability of constituents to access services and information electronically. Quantitative data on fixed phone line penetration, the total number of PCs and Internet users relative to the population forms the basis of this ranking, along with qualitative assessments about the availability of high-speed and reliable Internet access and the development of government security programmes, such as disaster recovery and viral protection programmes for government sites. Finally, as higher speeds of Internet access typically result in better performance of online transactions, the fledging amounts of broadband penetration were ranked. Mobile penetration was not taken into consideration, despite the region's fast cellular growth, because government services are not yet widely accessible through mobile devices.

Business and legal environment (10% weight)
To assess the impact that the country's legal frameworks have had on the ability to conduct business and deliver effective services through the Internet, a holistic assessment of legislative development in both the on- and offline worlds was made. The EIU's proprietary rankings for political and macroeconomic environments were used, along with qualitative rankings of the overall maturity of the legislative environment, specific legislation concerning the Internet and online commerce, and the progress that has been made on implementing digital rights management and validating digital certificates.

Education and skills(10%)
An assessment was made of the core underpinning skills of the countries surveyed, to gauge how well the population can adapt to, and thrive in, the changing service delivery landscape that e-government will bring about, and to what extent local e-talent can help serve as a catalyst. Basic education and literacy levels were compared, as were qualitative assessments of the level of IT and Internet training in the workforce.

Government policy and vision (15%)
Without a clear assertion of government will, e-government transformation will not be accomplished. Indeed, implementation will not even get started without well-thought-through plans and statements of purpose, which link squarely to broader government objectives. The EIU compared the clarity and effectiveness of each country's overall support for IT and telecoms infrastructure development, the goals of its e-government implementation programme, and the extent to which online procurement is being made a requirement for doing business with the state. Finally, in order to add a layer of implementation efficacy, the percentage of GDP that is taken up by state spending was ranked, on the rationale that big government spenders can use their purchasing power to enact changes in procurement practice—should they choose to do so.

E-democracy (15%)
While immature everywhere in the world, a determinant of a country's ability to make digital channels work is the extent to which electronic democracy initiatives make participation in government more effective and transparent for citizens. Comparisons were made of the extent to which governments have made information available online and facilitated citizen communication through the Internet and other digital channels. Additionally, judgements were made as to whether such digital initiatives were in fact more effective than existing channels—thus improving the democratic process overall.

Online public services for citizens (15%) and businesses (15%)
The two service-focused categories judged the efficacy of attempts to bring specific services online for individual and corporate constituents. For each of the 20 core public services benchmarked by the EU, each country was evaluated on the extent to which information was available for the service online, and the extent to which an entire transaction could be conducted online. Services that were measured for citizens included: tax submission and notification, job searches, social security services, personal document applications, building applications and health services. For businesses, social security contributions, corporate tax and VAT notification and submission, company registration, customs declaration and public procurement were assessed.

Infrastructure hurdles and enablers

Enough will, but not enough wires

Several of Central Europe's governments are commended elsewhere in this report for clarity of e-government strategy and creativity in implementation. But, in the words of Arvo Ott, head of state information systems in Estonia's Ministry of Economic Affairs and Communications, vision and sophisticated services count for little if the public cannot access them. Decent IT and communications infrastructure are an indispensable condition for developing electronic information and transaction services of any sort.

In Central Europe, although wireless services are developing quickly, low Internet and PC penetration and the still poor quality of fixed networks are a serious impediment to e-government progress. Only in three Central Europe markets—the Czech Republic, Bulgaria, and tiny Slovenia—does fixed line penetration surpass 40% of the population. Even in regional e-government leader Estonia, the EU estimates that some 46% of households are without a fixed telephone.

Arguably, broadband matters more—the high transmission speeds enabled by broadband networks are a prerequisite for sophisticated two-way and transactional e-government capabilities. With average penetration hovering around 1%—only Estonia and Slovenia have surpassed the 3% mark—it will be several years before broadband becomes a significant enabler of e-government development. Malta with its high level of broadband penetration is the exception among the new EU cohort; poor ICT infrastructure also plagues the other recent entrant, Cyprus.

The factors inhibiting fixed penetration growth similarly hamper access to the Internet. The dominant fixed-line telecoms operators in the region are less-than-market-driven incumbents; in most countries they also own the primary Internet service provider (ISP) and tend to have a deadening impact on the competitive environment. (Even relatively competitive Slovenia has less than ten active ISPs.)

Where there is decent competition in Internet services, there is usually a parallel fixed infrastructure in place, normally in the form of cable television. Romania's leading ISP, Kappa, got its start as a cable TV provider. The one new EU member where broadband penetration has any significance is Malta, where over 80% of households have cable TV, and over 20% of homes are connected to cable modem service.

To their credit, the region's governments recognise the connectivity deficit and have drafted no shortage of action plans to address it. For example, there is a major computerisation drive under way in Turkey's Ministry of Education, and the government is using a $100m World Bank loan to kick start an IT infrastructure programme for SMEs.
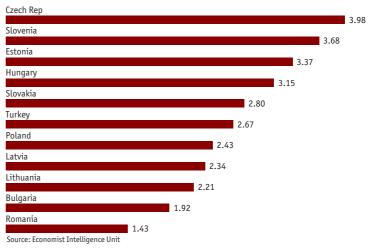
Public Internet access points (PIAPs) are another part of the solution, providing Internet access to under-connected citizens in such venues as libraries and schools. Romania has launched a project, for example, to build nearly 4,300 'info-kiosks' throughout the country to help promulgate access to government information and services, particularly in areas under-served by telecoms networks. Along with Estonia—and new EU member Malta—Romania stands out in this group by the speed with which it has extended PIAPs into its regions, outshining the likes of Hungary, Slovenia and Poland.

Slowly building 'trust'

As important as physical infrastructure is to all information society objectives, no less critical are efforts to create the so-called 'trust' infrastructure: laws and practices which legitimise digital signatures, enhance usage of digital certificates and acceptance of online receipts. Here too, Central Europe as a whole lags behind its EU peers, although a few fast-movers stand out. The Internet legal framework in Slovakia, for instance, is developing very slowly: While a digital signature law was approved in 2002, only this year have two certification authorities been created. On the other hand, Estonia (see box on page 6) and the Czech Republic developed legislation early and have been moving quickly to create the supporting technical framework.

E-government scores: Connectivity & technology infrastructure
Category scores (out of 10)

Country	Score
Czech Rep	3.98
Slovenia	3.68
Estonia	3.37
Hungary	3.15
Slovakia	2.80
Turkey	2.67
Poland	2.43
Latvia	2.34
Lithuania	2.21
Bulgaria	1.92
Romania	1.43

Source: Economist Intelligence Unit

Skills to bear

Central Europe boasts some of the most highly educated populations in the world. This is an essential building block in helping to build higher-order, IT-centric skills; countries such as India and China have been able to leverage their strong education 'infrastructure' into leading positions in fast-growing IT enabled services. However, while there are some similar success stories in Central Europe — including pockets of IT outsourcing in the Czech Republic and Slovenia, and Romania's developing reputation for cost-effective offshore programming — the level of Internet and ICT-specific skills in the region are still uniformly average.

The root of the skills deficit is the chicken-and-egg conundrum created by the lack of Internet access and computerisation, particularly in schools and the workplace. Lacking ubiquitous Internet access is not
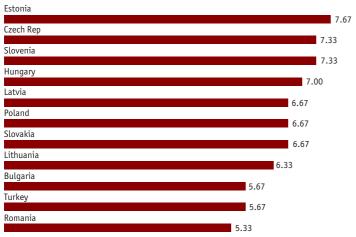
Estonia gives life to digital identities

Like most other European countries, Estonia has digital signature legislation, yet unlike many of the others, it also has legislation covering digital certificates for identification cards. The average Estonian thus has access to two separate digital certificates, based on standardised platforms, which the government supports through the provision of free software tools to businesses and citizens to enable their use. Widespread deployment of trusted digital identities has allowed the use of ID cards in a number of transactions, including with the country's famously e-ready banks. In addition to helping to create one of the world's most developed e-banking markets (95% of banking transactions are estimated to take place through digital channels), Estonia's government plans to leverage familiarity with ID cards in order to implement its e-democracy programme next year.

E-government scores: Education and skills
Category scores (out of 10)

Estonia	7.67
Czech Rep	7.33
Slovenia	7.33
Hungary	7.00
Latvia	6.67
Poland	6.67
Slovakia	6.67
Lithuania	6.33
Bulgaria	5.67
Turkey	5.67
Romania	5.33

Source: Economist Intelligence Unit

always a hurdle in fostering Internet innovation (India proves the point, and Hungary and Romania with their talented programmers are local examples), but having it certainly helps. Governments have frequently addressed skills deficits through infrastructure initiatives—wiring schools and putting PCs on desks. Lithuania's Information Society Development Committee boasts, for example, that over 90% of schools and government offices have computers. The key, however, is making people capable and comfortable with whatever IT resources they have to hand. Too often, and not just in Central Europe, skills training efforts lag well behind infrastructure initiatives.

The IT skills deficit is particularly acute in the public sector. According to Mr Timmers of the European Commission, "there has been under-investment in IT and communications technology skills" throughout the Central Europe region, including in the e-government leaders. Public administration training institutes are beginning to address the skills gap, but there is a long way to go before they make a dent. No less important, says Mr Timmer, is that governments will need to be creative in overcoming the entrenched internal resistance to organisational change that better IT skills—and the demands of e-government—will bring.
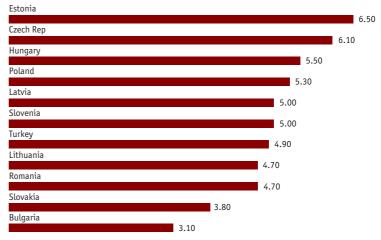
Vision and reality

All Central European governments are pursuing e-government transformation agendas to one degree or another. The region's e-government leaders have in common an early and clear articulation of e-government goals and strategy, motivated as much by the goals of improving governance as by earning EU membership 'points'.

Mr Ott of Estonia's Ministry of Economic Affairs and Communications posits that his country's regional leadership in e-government derives partly from its early start in 1993-94 to developing e-government policy and strategy. He also underscores the importance of the unanimous and unwavering political support that the e-government programme has enjoyed from successive national governments from that time.

Slow-movers in 'the e-vision thing' are Slovakia, Bulgaria and to an extent, Hungary. (The latter's Ministry of Informatics and Communications only last year formulated an information society plan for 2004-2006, several years behind the rest of the region). Tomas Sabol, associate professor at the Technical University of Kosice and a member of the eEurope Advisory Group, believes that the largest impediment to e-government progress in Slovakia is the lack of vision and strategic thinking within the government. The country's political leaders have had to struggle with more existential problems of economic and political development following independence. E-government has been well down on the development agenda.

Among other EU entrants, Cyprus is also notable for the relatively weak political attention given to e-government planning. The same can be said of the

E-government scores: Government policy and vision
Category scores (out of 10)

Country	Score
Estonia	6.50
Czech Rep	6.10
Hungary	5.50
Poland	5.30
Latvia	5.00
Slovenia	5.00
Turkey	4.90
Lithuania	4.70
Romania	4.70
Slovakia	3.80
Bulgaria	3.10

Source: Economist Intelligence Unit

future EU hopefuls in the Balkans, such as Macedonia, which is understandable given the enormity of the political and social problems they face. The Croatian government, on the other hand, has voiced commitment and demonstrated initiative in selected areas of e-government development in the post-Tudjman era.

Policymakers in our e-government leaders have also demonstrated admirable specificity of purpose in e-government development. Models include Estonia's clearly defined Information Policy enacted in 2002, covering service delivery programmes, digital management of state records and education policy, and Turkey's "e-transformation" project, co-ordinated within a cabinet-level directorate, with its action plan consisting of 73 specific short-term objectives. Nearly every market in the region has an e-

A Polish e-government tapestry, with a Flemish touch

Pragmatic assistance for Central European initiatives is also materialising through bi-lateral programmes, particularly those geared to help translate e-government vision into reality. Flemish government assistance and consultants helped Poland's government develop its E-government Masterplan. In particular, the Flemish team helped its counterparts to map the overarching objectives — building efficient government service delivery systems for citizens and business with minimal impact to existing operations — to a specific action plan geared at identifying the 'maturity level' of each government service considered.

The ability to prioritise e-government activities can translate a lofty e-vision into an effective one. The Flemish team helped its Polish peers to achieve this. Once drafted, the Masterplan went through an implementation planning process which identified not only which government services could be delivered through electronic means, but those which should be, for reasons of cost efficiency or usefulness to constituencies. Through this process, the Polish government determined that tax, vehicle registration and personal document applications were among the highest priority initiatives for citizen-focused services, and social security contribution and public procurement were the most important business services.

government strategy and implementation plan in place.

A little help from their friends

Where government efforts wane, pan-European bodies and non-governmental organisations (NGOs) have provided encouragement and assistance in the form of benchmarking and training. The most prominent guidelines, setting agreed targets in specific categories of public services, have been provided by the European Commission; these are articulated in its eEurope+ action plan, a mirror of the more ambitious plan developed for the established EU-15.

In benchmarking countries' progress, the European Commission has also attempted to prod slow-moving governments into action. It's effectiveness leaves much to be desired, however; Slovakia, for one, has missed numerous targets, says Mr Sabol of the University of Kosice, without reprimand from the Commission. He believes that, while the Commission cannot force laggard governments to act, it can do a

better job of benchmarking and calling them to task for failure to meet targets.

Examples of NGOs providing training and other assistance is the Central and Eastern European Networking Association (CEENet), an Austrian-registered, Polish-headquartered non-profit group consisting of research and education organisations from 25 countries from across the region, focused on helping to develop both IT skills and infrastructure.

Cross-border initiatives to implement e-government are central to the entire European experience. While direct pairing between western and Central European governments is not frequent (see the box for an exception), there is much joint planning being done on e-government development in regional European forums. Here, Central European guidance and participation is crucial; in an e-government initiative of northern European governments, Lithuania's Information Society Development Committee is taking point position in developing an e-procurement solution for the Baltic littoral states.

Mr Timmers of the European Commission and Estonia's Mr Ott both agree that e-government models cannot easily be exported to other countries, since their success hinges on local factors. Central European governments have done a good job of learning from best practice elsewhere, however, including through the use of e-government technical solutions pioneered in Western Europe. For example, in establishing its main e-government portal, Croatia's government borrowed interoperability standards already developed by the UK. Adapting ready-made standards rather than re-inventing the wheel helped the government to jumpstart inter-departmental data integration relatively quickly. Mr Timmers also points out, as mentioned previously, that best e-government practice in Central Europe is also beginning to be studied in the more established EU countries.

Buying power

Governments enjoy a unique advantage in ensuring that e-government directives are translated into reality — their own buying power. Amongst the world's top e-ready markets are a number from Western Europe —the Nordic countries, the UK and the Netherlands — which all spend in excess of 20% of GDP on public procurement. Of the 11 Central European countries ranked for this survey, seven have government spending in excess of 17% of GDP.

While expansive procurement does not ensure e-government success, a link is emerging between a state's role in the economy and its ability to influence the digital practices of its constituents. The measure of success of the Czech Republic's "e-trziste" electronic marketplace programme, beyond helping to streamline the government procurement process, has partially been to energise e-commerce: an eEurope+ survey in June 2003 found that 32% of Czech businesses procured online — Central Europe's highest proportion. By contrast, Hungary's government has been very slow to implement procurement programmes for government departments, reflecting the sluggish development of the country's overall information society objectives.

Another chicken-and-egg conundrum emerges here: It is hard to gauge to what extent the government's e-marketplaces have pulled Czech businesses online, or whether its Internet-savvy businesses have made e-trziste a success. However, the question of which comes first is less important than the fact that a symbiotic relationship exists. Governments willing to take the initiative to use digital tools in interacting with constituencies increase the likelihood of their e-government vision materialising.
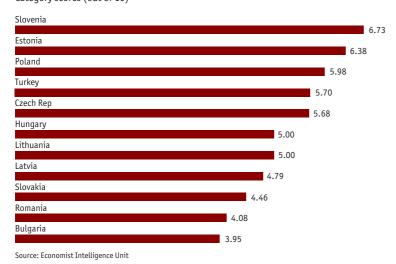
And the more 'practical' (read: cost-saving) the initiative, the better: It is for good reason that Romania's Electronic System for Public Acquisitions is considered the most critical of the 20 e-government pilot projects launched by the Ministry of Communications and Information Technology in 2001.

Depth and breadth

The digital 'supply chain' of government services must be complete in order to have any substantive effect on the way a country is run, or on efforts to facilitate an information society. Many Central European nations, despite infrastructural and business environment challenges, have done well to go beyond 'window dressing' in e-government initiatives. As discussed, policy planning processes in these countries have been thorough, and have set out a course to take their e-government process beyond websites and into effectively developing 'end to end' digital channels.

Mr Ott of the Estonian Ministry of Economics and Communications notes that a cohesion of interests and agendas between business and policymakers, as in Estonia since its independence in 1991, can help produce depth and breadth of government approach as well as the resulting services.

Again, Estonia is the 'poster child' for progress in taking e-government processes on a complete end-to-end journey. Particularly in the areas of income tax submission and notification, the government has been diligent in documenting the needs of its citizens and businesses, and developing a tax programme that not only allows for filing online, but also reduces inefficient 'offline' interaction by allowing historical searches and query submission online as well.

Moreover, Estonia has created a marketing and implementation programme that would make a software company proud. The government initially worked with partners that would ensure wide reach and technology support (e.g. partnering with telecoms carrier Eesti Telefon and major central banks to create the e-TaxBoard). It then developed programmes to win over 'early adopters' (entrepreneurial self-employed taxpayers) and then engaged in education programmes to build appeal in the mass market. As a result, 36,000 tax returns were submitted electronically in 2001, and nearly 138,000 returns were submitted last year.

Among the new EU members, Malta also stands out for the breadth its online service platforms have achieved. The eEurope+ 2004 progress report notes that already by the end of 2003, the Maltese government offered 13 of the 20 core public services for citizens and businesses in fully transactional fashion.

Not all of the region is as committed to the end-to-end e-government philosophy. Hungary in particular needs to invest more effort in building complete transaction processes for interacting with the state. Government portals are largely informational, rather

E-government scores: Online public services for citizens
Category scores (out of 10)

Country	Score
Slovenia	6.73
Estonia	6.38
Poland	5.98
Turkey	5.70
Czech Rep	5.68
Hungary	5.00
Lithuania	5.00
Latvia	4.79
Slovakia	4.46
Romania	4.08
Bulgaria	3.95

Source: Economist Intelligence Unit

Romania—slow progress but an 'A' for effort

Romania gets low scores in our e-government rankings, generally due to the impediments presented by poor infrastructure, an often adverse business environment and limited skills development. But its low marks are not for lack of ambition. The government's different e-government platforms—encompassing information gateways for health services, public records, university applications and tax, among others — begin with a digital 'window' being opened to citizens in the form of a portal. In fact, Romania's e-government portal recently received an achievement award from the World Summit of the Information Society for its comprehensiveness and innovation.

Romania has been addressing the back end of public administration as well as its front end, making strenuous efforts to implement secure, robust database management tools within and between government departments. Moreover, document management and web-based interfaces for supply chain management— including a proprietary web-based solution for loading and displaying supplier invoices—have completely digitised purchasing interactions for over 6,000 transactions.
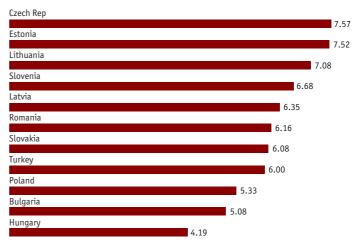
Romania's thoroughness in developing e-government service infrastructure might make the market a regional e-government leader but for the infrastructure and skills deficits mentioned above. Romania's challenge is to now extend a meticulously implemented e-government strategy into a programme for substantially increasing its citizens' access to the Internet.

than transactional, and there has been little development of such vital aspects of e-business tools as digital VAT registration, customs services or public procurement. Cyprus should also be singled out among the new EU members for lack of depth and breadth of online services; with minor exceptions, portals offer mainly information services without the two-way or transactional capabilities that most other new entrants have introduced.

E-democracy—part of the deal

E-government is about more than delivering public services. The Internet offers the opportunity to expand citizen participation in governance, through electronic voting or other online channels to solicit public input on government policy. E-democracy is thus integral to the Economist Intelligence Unit's e-government rankings, since it is part of the commitment authorities make to citizens when

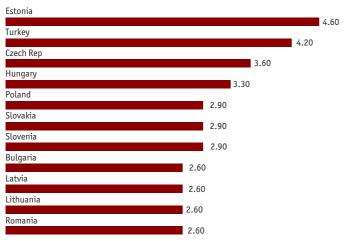**E-government scores: Online public services for business**
Category scores (out of 10)

Czech Rep	7.57
Estonia	7.52
Lithuania	7.08
Slovenia	6.68
Latvia	6.35
Romania	6.16
Slovakia	6.08
Turkey	6.00
Poland	5.33
Bulgaria	5.08
Hungary	4.19

Source: Economist Intelligence Unit

E-government scores: E-democracy
Category scores (out of 10)

Country	Score
Estonia	4.60
Turkey	4.20
Czech Rep	3.60
Hungary	3.30
Poland	2.90
Slovakia	2.90
Slovenia	2.90
Bulgaria	2.60
Latvia	2.60
Lithuania	2.60
Romania	2.60

Source: Economist Intelligence Unit

endeavouring to use digital technology to improve governance.

The Estonian, and secondarily Turkish governments stand out in the region as practitioners of e-democracy. They exhibit not only clear efforts to open communication channels to citizens, but also processes to ensure that online feedback is incorporated into the legislative process. For example, Estonia's celebrated I Decide Today portal effectively allows connected citizens near-instant communication with ministers on policy and legislation issues.

Such efforts at developing e-forums are also often the start of more significant electronic transactions in the e-government process — Estonia is acknowledged to be the first country to have passed national e-voting laws, and as mentioned, it will begin utilising electronic ID cards in its e-voting processes scheduled for next year's elections.

In the rest of the region, e-democratisation goals are paid at least lip service but usually take second priority in e-government programmes to streamlining public services. And in contrast to public service delivery, in which local authorities in some countries are as active as national ones, in Central Europe e-democracy initiatives are mainly limited to the central government. Mr Sabol of the University of Kosice notes that Slovakia's central government has pursued some effective electronic opinion-gathering initiatives, and some have been implemented by regional governments, but that there are very few e-democracy programmes at local levels in his country. Local officials, he relates, need to be shown that successful e-democracy initiatives can earn them electoral support. He adds that local officials are often reluctant to launch any digital initiatives unless external funding (from the central government or EU) are forthcoming.

Danger: Entrenching an 'e-elite'
For all the clear thinking and sweat that has gone into e-government strategy development and its implementation, it is not clear that the region's governments have reckoned with a socio-political risk of partial success. Throughout the region, it is the political and business elite which constitute the majority of online and Internet-savvy citizens; certainly this is the case in Estonia, whose young, technologically sophisticated business elite has worked closely with the political class to bring about a remarkable digital transformation. But still only ten percent of the population has effective access to the Internet, which means that unless the base is broadened, Estonia's online forums will remain a communication medium for the enfranchised elite — exactly the opposite of the stated e-democracy objectives. Expanding citizens' access to the Internet is crucial if e-government initiatives are not to widen, rather than narrow, society's digital divide.

Smart government—not just digital government

Analyses of e-government such as this naturally gravitate toward technology, in particular digitalisation. Without it, e-government initiatives will be hollow. At the same time, the objectives of e-government must not be limited to digitalisation and creating online platforms. Would-be e-government leaders espouse policies and principles which have good governance as their ultimate objective. Digital processes and IT-centric operations will naturally follow, if the state is willing and able to make its operations more efficient and more focused on delivering valuable services to its constituents.

Most Central European countries appear to have these basic principles in place, creating a foundation for e-government progress that perhaps belies the overall scores. The region's leaders—Estonia, Slovenia, the Czech Republic—have tailored their IT-centric e-government plans to serve the broader objectives of better government and economic transformation. (Malta also stands out in this regard when the analysis is extended to all new EU countries.)

Estonia's e-government implementation efforts, for example, have gained global attention, because not only have the initiatives been thorough and innovative, they have been pinned to a basic strategy of the government — to improve the country's economic prospects. Small and relatively resource-poor states, the Estonian and Slovenian governments have made conscious decisions to use government co-ordination and initiative to transform the ways in which the state provides services, and thus provide platforms for domestic business to succeed, not unlike Singapore did a generation ago.

While infrastructure and Internet access remain limited, however, traditional information and service delivery systems will retain a critical role. Simply overlaying electronic platforms on woefully inefficient administrative operations may compound rather than ease the problems, wasting significant public funds in the process. The point of e-government, in addition to streamlining administrative processes, is to create channels of service delivery and information exchange that work better than the existing ones. Given limited resources and competing priorities, Central Europe's governments will be well-advised to focus digital initiatives on areas most in need of change.

Appendix

Economist Intelligence Unit Central Europe e-government rankings, 2004

Category scores (out of 10)

	Overall score	Connectivity and tech infrastructure	Business and legal environment	Education and skills	Government policy and vision	e-democracy	Online public services for citizens	Online public services for business
Category weight		**0.20**	**0.10**	**0.10**	**0.15**	**0.15**	**0.15**	**0.15**
Estonia	5.87	3.37	6.80	7.67	6.50	4.60	6.38	7.52
Czech Rep	5.67	3.98	6.95	7.33	6.10	3.60	5.68	7.57
Slovenia	5.33	3.68	6.60	7.33	5.00	2.90	6.73	6.68
Poland	4.74	2.43	6.60	6.67	5.30	2.90	5.98	5.33
Hungary	4.69	3.15	6.66	7.00	5.50	3.30	5.00	4.19
Turkey	4.64	2.67	4.23	5.67	4.90	4.20	5.70	6.00
Lithuania	4.62	2.21	6.36	6.33	4.70	2.60	5.00	7.08
Latvia	4.58	2.34	6.32	6.67	5.00	2.60	4.79	6.35
Slovakia	4.44	2.80	6.28	6.67	3.80	2.90	4.46	6.08
Romania	3.99	1.43	5.42	5.33	4.70	2.60	4.08	6.16
Bulgaria	3.71	1.92	5.50	5.67	3.10	2.60	3.95	5.08

Source: Economist Intelligence Unit