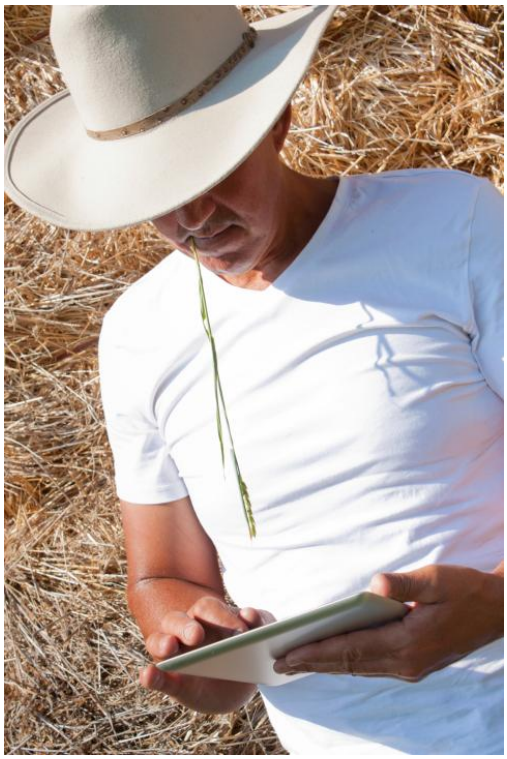
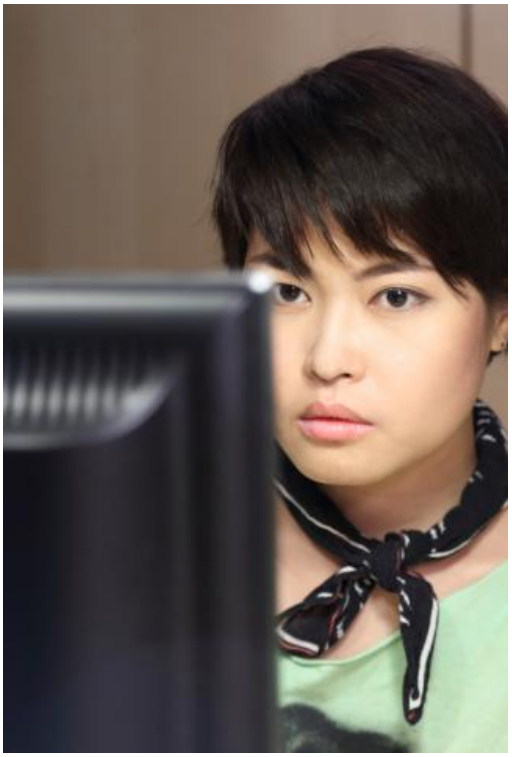
Software and Success

How three different types of eGovernment solutions set the standard for increasing access, interaction, and productivity in the networked world





IDC
Analyze the Future

An IDC white paper
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IDC Opinion

A primary challenge for IT suppliers providing services to the public sector is adapting to organizational complexities. Multiple cost centers, a decentralized power structure, "organic processes" formed over decades, thousands to millions of customers and massive volumes of data, and traditional attitudes on how an agency should do things (as opposed to what it should do) all generate obstacles to migrating work into electronic formats. For instance, school systems can include thousands of semi-autonomous units, each with their own semi-autonomous classrooms and teachers. Healthcare providers must negotiate with local, regional, and national entities with webs of interconnected processes. Agricultural dispersal and registration bodies are often run locally, but must coordinate with central and (in the case of Europe) international bodies.

IT suppliers such as SIVECO have proven capable of handling this complexity. Generally speaking, their ability to address the challenges of moving public sector work and data onto interconnected tablets, PCs, servers, and software systems depends on:

- **Adaptation over adoption**. Rather than promote off-the-shelf (if customizable) packages, SIVECO has approached the public sector by starting with how things are currently done. By analyzing processes, work relationships, and constituent needs, SIVECO has created eGovernment and educational solutions that evolve with the client, and nudge that evolution forward. This creates manageable change, giving administrators and frontline workers the opportunity to develop the skills and attitudes needed for further eGovernment development.
- **"Invisible" innovation by the supplier**. With the installation of complex IT stacks, SIVECO has deployed creative solutions that link legacy systems through APIs and system and software buses, relieving onsite administrators of the burden of management. SIVECO has also found workarounds for software and eLearning content delivery issues at schools related to inconsistent or inadequate connectivity (sometimes going old school with direct delivery). In both cases, users were aware only that systems were in place and functioning.
- **Success depends on the user experience**. In developing its eGovernment solutions, SIVECO recognizes that the level of expertise needed to address the interplay of IT systems and corresponding volumes of data is beyond the understanding of most users. This means success must be gauged by user experience. Yes, cost must be a factor. So too timely project completion. But the ultimate test is the ease with which users can access information, interact with clients and colleagues, and increase their productivity.

This IDC white paper focuses on the final point, as regardless of the backend technologies in play, success is ultimately defined by the degree to which any given solution aligns with user expectations and enhancement of their work.

Follow the Users

In 2009, 30 teachers from two high schools in the United Arab Emirates participated in the first phase of an eLearning project initiated by the Ministry of Education. They validated 1,200 reusable learning objects in Arabic and 2,000 in English. Two years later, in 2011, educational supervisors from the Ministry of Education joined the project and validated another 2,000 reusable learning objects in Arabic and 1,800 in English. Then, during intensive three-week training sessions, 900 teachers in 90 schools learned the essentials of folding 7,000 interactive learning modules into their curricula. Teachers adopted the new content almost immediately. All the teachers embraced the material, and now use desktops, projectors, tablets, and smartboards to incorporate highly interactive multimedia content, videos, virtual experiments, concept reviews, and quizzes into their daily lessons.

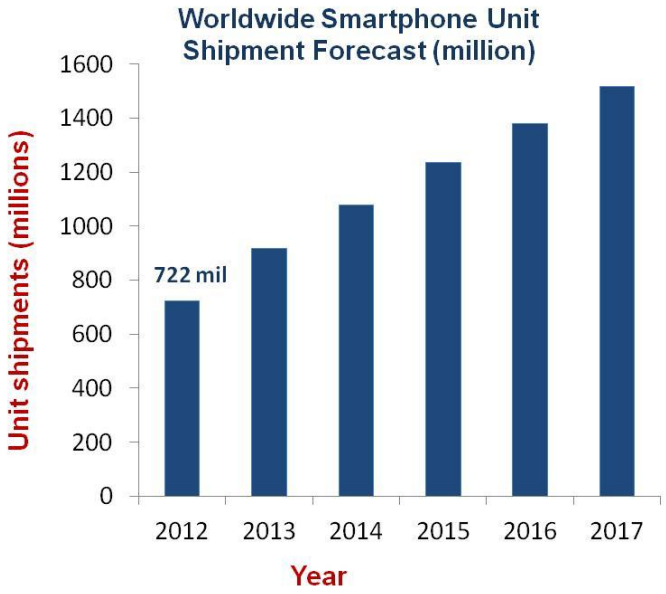
In 2013 the UAE Ministry of Education and Mohammed Bin Rashid Smart Learning Initiative launched an eLearning pilot for the 7th grade, focused on six subject areas (mathematics, physics, chemistry, biology, geography, and local studies) deemed strategically important to the development of students as individuals, and to the country as a whole. It is part of a continuing effort by the Ministry not just to modernize classrooms, but to fundamentally change the way educators approach the teaching–learning process. As such, it aims to improve education by introducing technology widely used by students into the classroom.

The initiative also reflects a larger regional and global trend. Continued advances in processing power, storage, and connectivity have given us tablets, smartphones, and broadband. PCs have gone from simply speeding up paperwork and accounting to changing the way information is collected and managed. Businesses focused on profits and innovation generally take the lead in the adoption of complex backend systems that connect once-disparate databases, resource planning systems, and client-facing communications channels. But consumers are on the frontline of device usage that has altered, and will continue to alter, the way people communicate with each other, with businesses, and with governments.

In fact, it is hard to overstate the role of users in the equation. For instance, in the developed world, young people now come to class IT ready. They maintain multiple social media profiles, know how to interact through multiple channels at the same time, easily locate what interests them online, and manage information – skills which are also essential for social mobility, career development, and social communications. Those in emerging markets are catching up fast. According to the Internet World Stats, a statistics aggregator, Internet use in Turkey

and Kazakhstan has exceeded 45%. In Russia, Azerbaijan, and Saudi Arabia, it is around 50%. Meanwhile the UAE (70%), Bahrain (77%), and Qatar (86%) have rocketed past many developed countries and now have Internet penetration levels comparable to Europe. Nearly everyone has a mobile phone. And one-quarter to one-half of those online use social media.

Only forward-looking governments have been able to keep up with the changes – and then not uniformly, for all the reasons that slow down government. Nevertheless, most government entities around the world have implemented an "esolution" of some type. They range in size and complexity but generally have one thing in common: an attempt to use technology to facilitate work, learning, and communications.



Written on behalf of SIVECO, a Romania-based software development company, this IDC white paper illustrates the potential benefits of eGovernment solutions, using SIVECO implementations as examples. Based on four interviews with government authorities, IDC's existing information on ICT development, and insights gleaned from an extensive base of market research, this white paper also looks at implementation risks and challenges, and provides a summary of best practices.

The Expectations of e-Everything

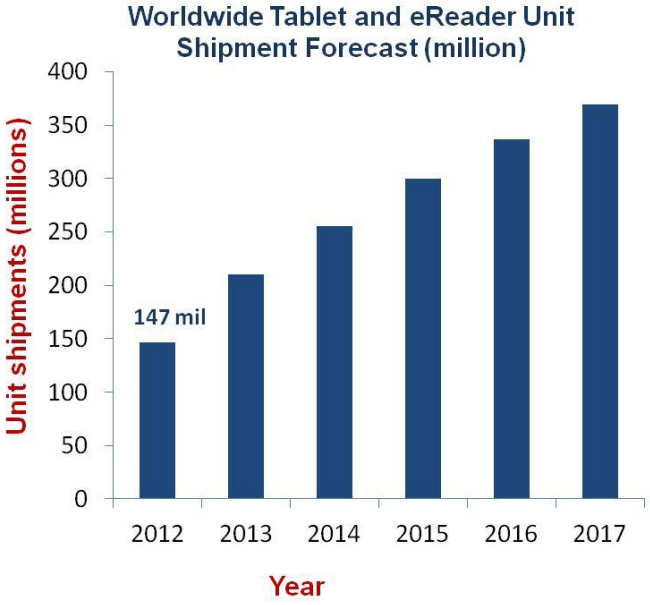
Thank (or blame) mobility

In 2011, smartphones outsold PCs globally for the first time. Accounting for replacement buying by early adopters, it is probably safe to claim that one in six to one in seven people now uses a smartphone. On one hand, this is nothing more than the evolution of mobile phones from calling and text devices to fully realized handheld computers. For those without the space for a PC or fixed-line connectivity, it provides immediate and flexible access to the World Wide Web.

On the other hand, it signals a significant shift in how people communicate. In addition to voice and text, smartphones allow for emailing, IMing, Tweeting, and updating of different social media sites. They take pictures and video, play music and movies, and sync personal files with online backup systems such as Dropbox, SugarSync, and SkyDrive. They have calendars, secretaries, wallets, and access points for online shopping. Professional and independent developers have created several million applications that pretty much do anything you can think of doing with a handheld device – and a lot of things you have not thought of. They generate copious amounts of data that can be, and are, used to

make the user's life easier through such services as providing directions, travel planning, offering in-store discounts, and alerting one to appointments.

The smartphone and the tablet PC are quickly becoming the nexus of new expectations about how communications and processes should work. As with tablet PCs and the rise of the Internet, smartphones have generated a world in which users expect "everything" to be online, or on a closed network, and managed through an application. In terms of user expectations, three areas in particular stand out in the new era of IT use:



- **Access:** Paper forms and pens are still rampant, particularly in the public sector. But as Kevin Kelly of Wired magazine has noted, today we are no longer people of the page, or people of the book; we are people of the screen. And the screen means access. From televisions and ATMs to airline check-in terminals and digital billboards to phones and PCs, the screen has become the primary tool through which people input and absorb information. Whether it is a simple email or the complex output of an enterprise resource planning (ERP) system, what used to be available to only a few is now available to nearly everyone.

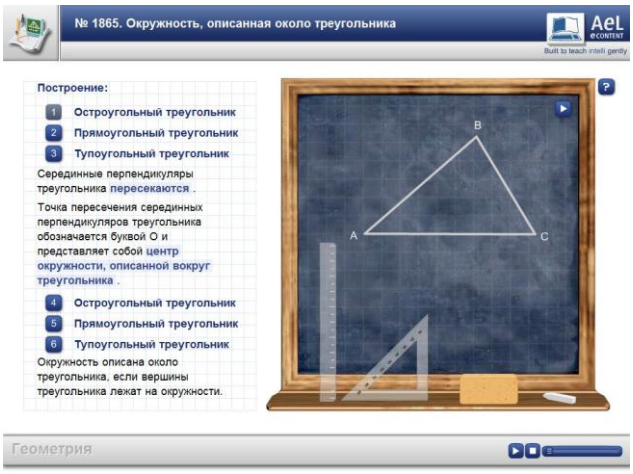
- **Interaction:** With the screen comes the expectation of interaction via email, IM, discussion forums, and social media. This also includes leaving comments in file-sharing sites such as YouTube and posting creative visuals on sites such as Pinterest. For government, this includes online versions of forms, payment options, the electronic issuance of licenses, and all manner of backend management. For education, this includes checklists, quizzes, and information structures conducive to meaningful exploration.

- **Increased productivity:** ICT systems are getting more complex as they incorporate and alter larger volumes of work. The first introduction to a new system can often feel overwhelming. But once the shock wears off, most people get more done. For instance, in many developed markets, automated tax forms do calculations for citizens, allow for online filing, and automatically send refunds via wire transfers. Systems integration is usually the first step. Ensuring that databases, filing systems, ERP applications, user interfaces, and networks communicate and share information, results in the rapid transfer of information. Dependent on increased access, the complicated results reflect the complicated reality, but ultimately speed up processes and increase productivity.

Adding "e" to Learning

One of the most visible areas for esolutions is in education. Since the birth of the PC and elementary software (such as Lunar Lander) in the late 1970s, schools have been attempting to supplement classroom activities with games and learning applications.

Unfortunately, the limitations of storage, processing power, graphics, and often interface design, prevented full-scale deployments in the classroom as tools to enhance lessons and encourage curiosity. Yes, PCs quickly became essential tools for writing and the manipulation of numbers in developed markets. And since the turn of the millennium, Google, Wikipedia, and other sites have emerged as important reference, research, and learning tools. But to be of true value in the classroom, eLearning solutions need to synchronize with curricula and embrace current and future user technology expectations.



Access adds variety and scope previously unavailable

Synchronizing material with the national curricula was an essential aspect of the UAE Ministry of Education's approach with its SIVECO eLearning program. The more than 7,000 objects for grades 9–12 (and another 450 for the lower grades) have been designed to work with classic chalk-and-talk material. Whether as part of a larger classroom lecture or for learning and review done individually, they were custom fitted to the demands of the UAE curricula. Many of the modules are specifically designed to fill knowledge gaps among teachers, thus providing students access to structured information that was previously unavailable. This has proven to be a double benefit, as it also gave teachers access to information which allows them to expand their expertise areas.

The same is also true for the SIVECO eLearning program in Kazakhstan. Many of the schools are remote or isolated. Three-fourths of Kazakh schools are rural; half of the rural schools are small. Well meaning and dedicated, teachers in many of these schools also lack expertise. The eLearning solution has enabled teachers to access additional sources prepared by the nation's most respected educators. Thus both students and instructors have increased access to pedagogical material that allows the transition from information reproduction to knowledge construction.

Interactivity engages students – and teachers

According to research done in 2008 and 2010 by Henry Roediger and Andrew Butler at Washington University in St. Louis, U.S., quizzes with feedback greatly enhance learning. It also demonstrated that repeated retrieval of information in a learning context greatly enhances long-term retention. Stated another way, when facts are combined with

interactive reasoning and assessment activities, students improve their capacity for absorbing information.

Thus interactivity is a core element of the reasoning, virtual experiments, and quizzes designed to supplement classroom work. In the UAE (and other countries, such as Azerbaijan, that have implemented eLearning solutions), the long-term goals are both to ensure that students have the baseline of knowledge for university studies, and to provide additional, meaningful exposure to the types of IT devices, applications, and networks necessary for finding work and engaging with friends and family. The interactivity does not end with students. A multimedia HTML editor allows teachers to customize math and science modules to the needs of the students, helping students to learn and teachers to maintain their skill levels.

Kazakhstan's program is even more ambitious. Having already been piloted in 44 schools in 2012, SIVECO eLearning systems are being expanded to 537 schools in 2013 and to more than 7,000 schools over the next five years. As with the UAE, interactivity is a core element of the program, with modules designed to fill knowledge gaps with teachers while encouraging them to shift from chalk and talk to a variety of team- and task-oriented teaching methods. Moreover, the program is designed to expose students to the types of technology and applications they are likely to find in the workplace after graduation.

Productivity emerges from focused and personalized practice

While many productivity gains depend on systems integration or the implementation of an ERP system that takes over from paperwork, eLearning increases productivity by accelerating lesson planning and delivery. The ready-made units reduce prep time and provide material for classroom discussions. Perhaps more importantly, it gives teachers tools for providing additional instruction. In the UAE, nearly 7,500 learning objects pretty much guarantee that teachers can assign struggling students with a variety of tasks to reach the desired learning outcome. In other words, teachers are better able to address the needs of individual students.

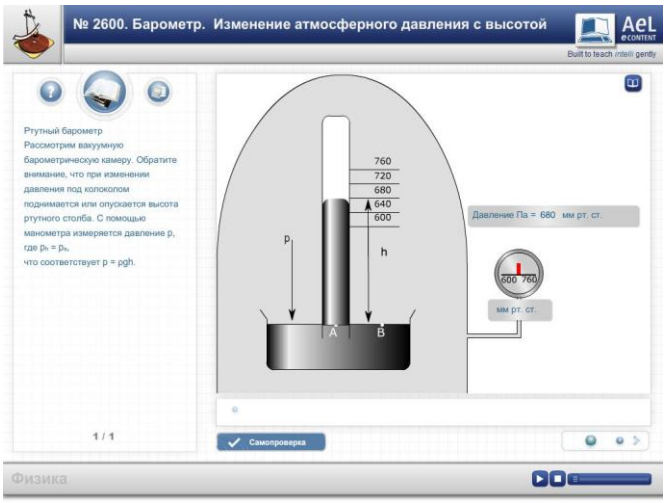
Challenges: eLearning requires learning

- **Ground level buy-in:** Buy-in is one of the most significant challenges facing the implementation of an eLearning solution, especially in the early stages. Conflicts with traditional chalk-and-talk teaching are common; they are so deeply rooted in history and culture that even those willing to embrace new methods can have trouble. Introducing educators to the project from conception, and

keeping them informed and engaged, generally helps. In the UAE, the Ministry of Education recognized that while the quality of its teachers was generally solid, the approach to the classroom was not suited to the way knowledge is shared in the Internet age. To win over teachers, supervisors had to be included in the training process, and an incentive program introduced. Another issue is eContent. Kazakhstan's focus on fundamentals meant that the collection of standardized modules needed to be augmented by additional material development to generate full support. More than 4,200 learning objects for math, science, and vocational training were developed in accordance with the Republic of Kazakhstan's national curricula. Together with its partner, the National Center for Informatization, local company SIVECO delivered a project that was named a finalist for the European IT & Software Excellence Awards 2013.[1]

- **Technical:** Equipping schools with the necessary hardware for leveraging an eLearning platform can be a challenge. Taking a phased approach is often crucial for ensuring project completion. In Kazakhstan, rural and remote schools signing on to the eLearning program were often underequipped in terms of broadband and tablets, PCs, and projectors. The Ministry of Education tackled the issue by assessing participating schools on a case-by-case basis and requiring the hardware implementation partner to supply the necessary equipment. In the UAE, inconsistent or poor connectivity was addressed through DVDs, user manuals, and downloads to local servers and classroom PCs. Fortunately, a national project for bringing broadband into schools is nearly complete. Finally, in the UAE every school has an eLearning engineer to address onsite technical issues, something the Ministry Education considers important in building confidence in eLearning in schools.

- **Budgets:** New PCs and tablets, expanded connectivity, software licenses, localized and custom content, support and helpdesk services – the cost of an eLearning solution can add up. Although the majority of countries claim education is a top priority, it often remains underfunded. While the UAE program is up and running, Kazakhstan's plans to expand its program to not hundreds, but thousands, of schools over the next five years will no doubt face fiscal constraints born from changes in the political environment, and perhaps in the technology itself.



[1] http://www.iteawards.com/content/european-it-software-excellence-awards-2013-finalists-announced

eHealth: Connects Constituents

The complexities of an eLearning solution tend to reside in the interplay between technology and curricula, with content and information flow generally focused on students and teachers. For eHealth systems (both health insurance and healthcare), they often reside in the information flow itself, with a plethora of providers, labs, payers, policy makers, medical professional organizations, and training facilities all needing to work together to deliver general and specific care to patients. Given funding is the lifeblood of the system, establishing a means for tracking where the money comes from, and goes, ranks among the most important eHealth priorities.

Romania stands as a case in point of how complex a healthcare ecosystem can get. The system for distributing funds from the central health insurance fund was highly decentralized, with more than forty counties operating on their own terms with pharmacies, hospitals, physicians, dentists, equipment suppliers, and various clinics. This required developing a central platform, called Integrated Unique Information System (SIUI), developed for the Romanian National Health Insurance House (CNAS), which could cope with the idiosyncrasies of local administrators. Perhaps more importantly, it needed to assure that payments for medical services and medicines were both validated according to regulations and approved lists, and delivered to suppliers to keep the system moving – all within an insurance and regulatory framework.

Access improves transparency of healthcare costs

At its most basic level, access in healthcare is about medical records, something SIVECO's electronic medical service records, certified by means of electronic patient cards, address thoroughly. With the implementation of the Electronic Health Record system, patients will have easy and clear access to their records to better understand their condition, and how they might change their lifestyle to improve their health. Hospital and clinic administrators, doctors, nurses, and other medical professionals need access to determine the best course of treatment. Insurance agencies need access to assure payment and prevent fraud. Governments need access (though not necessarily to individual records) to evaluate short- and long-term costs and associated policy implications. These eHealth-specific requirements are solved within the platform of National Health systems (which includes SIUI, ePrescribing, Electronic Card, and the Electronic Health Records systems). The rapid development of the platform validates SIUI as the information foundation for the medical system in Romania.

Access has also proven to be one of the most important elements of SIVECO's SIUI. In connecting and adapting the central solution to each county, SIVECO worked closely with government authorities to move information about contracts, funding channels, service information, prescription information, certified suppliers, staff and HR information, and other content types into electronic formats.

Interaction improves service

The more an administrator interacts with clients and other administrators, the more they work for clients and other administrators, rather than for the system itself. When they work for other people, they become more diligent, pay more attention to detail, and generally attempt to perform well.

CNAS administrators saw the potential of SIUI to improve the working environment. Cooperating closely with SIVECO, they reached out to suppliers, labs, doctors, payers, and patients to create interactive solutions. The result was the SIUI system, consisting of 26 interconnected modules (each designed to address the unique needs of a given constituency), that created a new level of communication within the context of the CNAS normative environment. The basic idea of the eHealth systems is the real-time response to information on service provision and online support for a rapid decision (whether about medical treatment for patients, records management for staff, or payments for suppliers). Together with the permanent support of complementary communication facilities (help desk, portal, forums), the constituents can also express appreciation and frustration through CNAS supervisors, providing ongoing information on what is going well and what could be done better.

SIUI Serving Romanian Healthcare

County insurance houses	42
Physicians	52,000+
Family doctors	10,300+
Medical assistants	93,000+
Hospitals	465+
Ambulance centers	53
Homecare providers	270+
Outpatient recovery	440+
Rehabilitation sanatoria	15
Providers of medical devices	2,450+
Clinical outpatient wards	2,470+
Paraclinical outpatient units	880+
Dentistry outpatient units	3,300+
Pharmacies	4,200+

Note: Numbers approximate; Q1 2013.

Productivity gains from process automation

A primary benefit of any software-based administration system is the automation of processes. Before CNAS, payment application validation had to be checked by hand against a series of rules. Checking is now automated. The "in due time" approach – where requests and files were put aside until they could be processed, creating multiple bottlenecks and delays – was eliminated. Feedback time to medical suppliers, patients, and internal staff decreased dramatically, with benefits for all users.

Moreover, payers, providers, and suppliers at the county and national levels could see what was happening across the board. This helped to eliminate basic duplications that were sometimes accidental, sometimes fraudulent (using a prescription or two different doctors to get the same medicine twice), and made it clear who received service and payment, and when. It has subsequently opened the door to the additional standardization of templates and centralization of processes, further increasing overall system efficiency.

SIUI Database Monthly Workload

Medical and pharmaceutical requests	19.1 mil
Service providers involved with requests	25.5 mil
Medical prescriptions	3.81 mil
Hospital stays	550k
Medical leaves of absence	194k
Primary financial documents managed	4.24 mil
Accountable notes processed	15.1 mil
Medical services payments	4.4 mil
Invoices received and processed	3.2 mil
Total documents	>50 mil
Current database total volume	8.5 TB

Note: Numbers approximate; Q1 2013.

Challenges: eHealth and sick old systems

- **Old-World Ways:** While IT systems are ubiquitous, resistance has traditionally been strong to adopting anything beyond a desktop PC that makes it easier to type reports and set up spreadsheets, particularly in the public sector. "Traditional" structures, paperwork, and processes are often complex and entrenched. This can lead to a fair amount of resistance from civil servants who have spent years mastering the intricacies of their position, often when information is not in electronic format. Patience turned out to be the best solution. By maintaining two teams – one to handle the old, hardcopy approach, and one to develop the electronic approach – CNAS administrators persistently chipped away at the established approach, ushering in the electronic approach.

- **Training:** Lecturing is the default option for most organizations when they need to introduce new ideas. For basic principles, concepts, and strategies, this is generally enough. But for an interactive administration system replacing hardcopy forms, mailing, and filing, it will generally fail. CNAS learned this with its first attempt at knowledge transfer. Adopting a classic "training the trainer" approach, it recruited thirteen representatives from each county and schooled them in the essentials of the SIUI modules. Then it tried conducting trainings at the county level. Neither worked. Both training approaches depended on the ability of the trainers and staff to absorb information better understood by doing. When CNAS realized this, it brought in SIVECO specialists to serve as onsite consultants – with the caveat that they were not allowed to touch the mouse or keyboard, forcing the staff to learn by doing. This worked.

Agriculture Goes Online

As with health insurance, funding is a central element of government administration. From villages to cities to states, efficient allocation and transfer of funding is crucial for the smooth functioning of government programs. This is particularly apparent with the European Union's Common Agriculture Policy (CAP). While it has received its share of criticism, the CAP stands as an important program for farmers. In addition to helping them maintain high standards of safety and quality while investing in innovation, it sustains diversity and ensures food security.

The implementation of CAP has been putting a strain both on administrative offices and traditional farming (particularly subsistence farming). But it has also opened the door to improved land management and utilization, benefiting farmers with both small and larger holdings. To obtain funds, the Romanian government created the Agency for Payments and Interventions in Agriculture (APIA), which was charged with launching the mandatory Integrated Administration and Control System for management of agriculture-related funding.

SIVECO Agriculture System and Large Data Management

Total number of users	750 000+
Absorption rate of EU funds	99.65%
Subventions value over four years	€5 billion
Farmers in database	1.45 million
Agricultural parcels in database	1.6 million
Owners of agricultural areas in DB	3.9 million
Polygons defined in 40+ reference layers	1 million+
Connected users per day	9,000+
Transactions per minute	3,000+
Database size	4TB+

Note: Numbers approximate; Q1 2013.

Access yields a crop of users

To create a user-friendly system for local agriculture administrators – many of whom had low levels of IT literacy – APIA and SIVECO opted for a Web-based platform for its Integrated Administration and Control System (IACS). It began with the mapping of business and communications processes between the EU and APIA, and APIA and country administrators and farmers. This included creating processes to maintain a farmer registry system and database, provide administrative controls, create a land parcel identification system, handle aid for rural development, run a finance and accounting system, and manage all the documents. By so doing, it helped establish standards for managing national allocations of the European Agriculture Guarantee Fund (FEGA) in the country – all while providing access to nearly five thousand regular users.

Interaction fertilizes the system itself

In addition to user inputs and interactions at multiple levels (requests, file and document management, checks and verifications, data input and editing, HR management, funding application, etc.), the SIVECO systems relied on user feedback to further develop and refine the agricultural systems. Adopting the classic waterfall approach at launch, later modules and functions were created in conjunction with staff and administrators through an iterative process. System usage

revealed its rough spots, allowing the SIVECO developers to improve interfaces, streamline functionalities, and introduce incremental improvements.

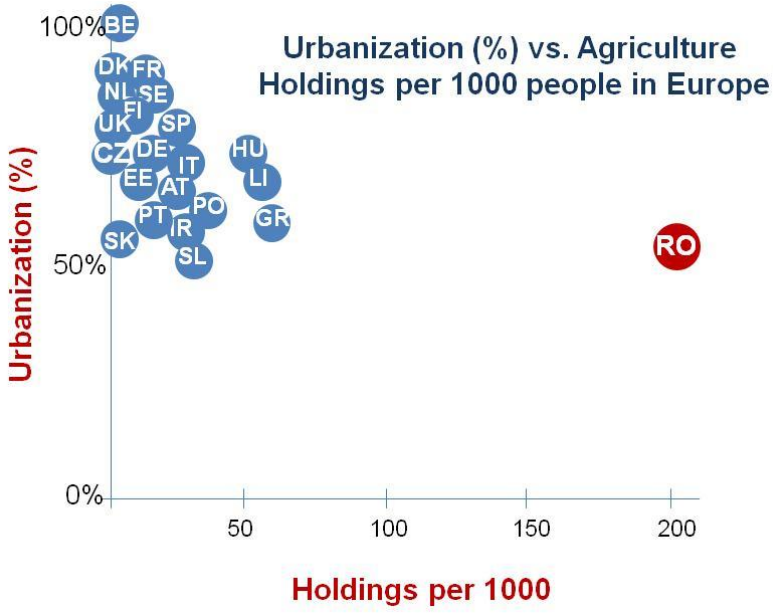
Productivity grows from streamlining

While no formal metrics were kept on time saved and request turnaround, anecdotal evidence says the IACS in Romania has increased both dramatically. As with SIUI, requests are registered faster. Validation and filing with centralized fund managers happens faster. More importantly, it ensured effective communications with the EU, allowing for greater absorption of EU funding.

Challenges lie in the soil of farming and government

- **The Structure of Farming:** A true outlier, Romania presented a significant challenge when it joined the European Union. The number of holdings per capita is the highest in the EU, while the urbanization rate is among the lowest. The tradition of the commons (private property held by a local community) includes various types and levels of access rights. The introduction of the CAP and the tightening of regulations within Romania resulted in new administrative rules, changes in land leasing patterns, and the emergence of farmer groups and the "quasi-privatization" of land. Keeping a clear eye on policy proved crucial to designing and refining the system. By approaching the IACS as a work in progress, SIVECO has maintained the necessary flexibility to adapt to the impact of political unions.

- **The Structure of the Government:** EU funding for farmers follows a kinked and complicated path. Budget allocations travel through institutions including the FEGA, and the European Agriculture Fund of Rural Development, to country-level administrative bodies. APIA is one of these. It must evaluate millions of agricultural blocks and claims filed by more than 750,000 users at more than 260 local offices in 42 counties. Yet leakage is low; Romania only needed to return around 0.4% of its CAP allocation for 2012. Furthermore, where policies and farming practices change with political parties and technology, government structures are consistent over time. SIVECO and APIA (and agriculture and aquaculture agencies) addressed the issues by mapping internal business processes and the relationships between the offices, and incorporating them into their system structure.



Challenges and IDC's Perspective on Lessons Learned

Commit 110%

The most important success factor for the implementation of any "eGovernment solution" is full institutional commitment, which usually starts from the top. Top-line goals must be defined and resources allocated, potential obstacles need to be identified, and staff brought fully on board. For instance, when teacher training did not result in the universal uptake of eLearning in the UAE, project leaders trained supervisors and established monitoring programs that got the job done. When CNAS launched SIUI, it recognized that existing processes needed to be accounted for first, requiring forty-plus variations on the initial system, something that could have easily derailed the project.

Never stop the training

Mobile phones, PCs, and social media have reshaped how people communicate and expect to communicate. Nevertheless, people often resist change, especially at their place of work. Moving from pen and paper approaches to Word processing was easy compared to moving from a hardcopy payment request, processing, and filing system to an electronic version. In some cases, a lecture or online tutorial may be enough. In most cases, much more is required. New systems need novel approaches for knowledge and skills transfer. For CNAS, technical mentoring replaced lectures and conference room instruction – staff were dropped into the proverbial deep end, offered guidance by SIVECO specialists who were never allowed to actually intervene – to get staff effectively using the system.

Be bold, be flexible, be patient

It is easy to say "decide what you want, then go for it". But that is often what must be done with regards to the implementation of eGovernment solutions. Make no mistake. Replicating the complexities of a fund-distribution system that itself has multiple obstacles and flaws requires extensive user research, analysis, process mapping, and planning – long before a request for a proposal goes out the door. But for change to occur, a decision must be made – whether through legal channels, by treaty, or by choice – often without full knowledge of the work involved, and how the act of implementation will itself change processes and the nature of staff responsibility. The larger the project, the more its champions and managers must be ready to change course, adjust expectations, and experiment with different approaches along the way as technology and technology savvy improve.

Do not reinvent the wheel – but be ready to add new spokes and hubs

SIVECO's eLearning modules provided a prototype for content development and localization. As working examples, they demonstrated proof of concept. They also provided a framework for discussing what works, what might be changed, and how new course material could be transformed into eLearning modules. When education authorities in Kazakhstan demanded new content, they used existing material and SIVECO expertise to create suitable eLearning units. The same applies for complex administration systems. Lessons learned at CNAS in Romania have been applied to other national agencies, and across the border in Bulgaria.

SIVECO Offerings

SIVECO Romania is the leading Romanian software house and one of the most successful software integrators in Central and Eastern Europe. Founded in 1992, the company develops and exports software products and high value-added consultancy projects to countries within the European Community, the Middle East, North Africa, and the CIS area.

SIVECO Romania's shareholders include Intel Capital, Polish Enterprise Fund V (an investment fund administrated by Enterprise Investors), SIVECO Netherlands B.V., and SIVECO Management Team.

Addressing large companies and public agencies, SIVECO Romania specializes in developing large and complex IT projects. It provides eLearning, eHealth, eAgriculture, eCustoms, and eBusiness solutions both nationally and internationally. In its 21 years, the company has built a solid reputation, earning more than 160 national and international recognitions and prizes.

SIVECO Romania, which is ISO 9001:2008 certified by the AFNOR Group, one of the top five audit companies worldwide, fosters close and successful partnerships with major software and hardware organizations around the world (e.g., Intel, HP, IBM, Bull, Oracle, and Microsoft).

More information about the company and its products is available at www.siveco.ro, www.facebook.com/siveco, and www.linkedin.com/company/siveco-romania. .

Business-to-Business Solutions

- Enterprise Application Suite
- eLearning
- eHealth
- Customized Applications
- eAgriculture

Business-to-Public Solutions (eGovernment)

- Enterprise Application Suite
- eLearning
- eHealth
- eAgriculture
- eCustoms
- Customized Applications
- eNuclear

International projects

In 26 countries on 4 continents, SIVECO has worked with public sector organizations on major projects designed to improve their operations and aid in the realization of long-term goals. These include:

- The IT-based Education System in Morocco
- Project for introducing IT into the customs system of the Republic of Macedonia and development of the integrated tariff environment (ITE) systems (TARIC)
- Implementation of the eCustoms solution at the Customs Authority in Turkey
- Business Intelligence system for the Customs Administration in Serbia
- Project for introducing IT to the National Health Insurance Fund (NHIF) in Bulgaria
- Implementation of the complex eLearning system for the Ministry of Education and Culture in Cyprus
- Implementation of the SIVABON system at the Credit Bureau in the Republic of Moldova

- System for electronic document and workflow management (SIVADOC) for the Kishinev City Hall, Republic of Moldova
- Implementation of the eLearning platform at the American Creativity Academy, an important school network in Kuwait
- Project for computer-based high-school distribution in Lebanon
- eLearning project at the national level in the Republic of Moldova
- eContent for schools in the United Arab Emirates
- Program for implementing the integrated eLearning solution in Azerbaijan
- Project for introducing IT into the educational process in Oman
- eContent at the national level for the schools in Kazakhstan

National projects

And in Romania, for more than 20 years, SIVECO has earned its reputation as one of the most reliable IT services firms in the country.

- Creation of IT-based program for to facilitate high-school student distribution in the Education System in Romania (SEI)
- Program for introducing IT into the National Customs Authority in Romania – New Computerized Transit System
- Implementation of the SIVABON system at the Credit Bureau in Romania
- Program for Introducing IT into the National Health Insurance House – Unique Integrated Information System (SIUI), followed by 3 additional National Health Projects: ePrescription, eCard, EHR
- Program for Introducing IT into the activity of the APIA and the Payment Agency for Rural Development and Fisheries (APDRP) – National IT System

SIVECO's global IT solutions, made in Romania, generate positive change, prosperity, and competitiveness for its customers, ensuring them access to progress.

It provides software solutions based on state-of-the-art technologies for organizations in all industrial and commercial sectors in the public and private sectors.

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