



CASE STUDY SERIES



DELIVERING SUCCESSFUL CHANGE WITH ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS

#1/2017

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- The Knowledge Centre for Sustainable Development in Bonn (Germany) which builds substantial knowledge around Agenda 2030
- The UN Lab for Organizational Change and Knowledge (UNLOCK) — a programme entirely devoted to organizational change and transformation

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UNLOCK Case Studies have been prepared as part of a range of initiatives designed to foster necessary change throughout the UN system. Subjects have been chosen because of their relevance to agencies and staff across the system, as well as the potential to stimulate learning and knowledge sharing that leads to the practical steps required to build a stronger UN. The opinions and statements presented here do not necessarily represent those of the UNSSC.

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DELIVERING SUCCESSFUL CHANGE WITH ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS

EXECUTIVE SUMMARY

Most United Nations organizations have invested in ERP systems, expecting that the integration of data and business processes would help contain costs as well as improve operational performance, efficiency and internal controls.

In reality, numerous challenges have been encountered in pursuing these benefits. A 2012 Joint Inspection Unit (JIU) review found that most of the ERP systems then functioning in UN organizations had been implemented over budget and over schedule, observing that the extent to which benefits accrued depended largely on the approaches taken to change management.

The pathway to reaping the benefits of such systems has since shifted, as the ERP market now offers more ways of achieving

the necessary functionality, including cloud-based Software-as-a-Service (SaaS). These options offer different advantages and disadvantages, and hence varied challenges for the management of change.

This document looks at how change management can help to get the best possible returns on investment from ERP systems, by reviewing the experiences of four UN entities¹ (UNDP, IAEA, UNOPS and PAHO), diverse in their nature as well as their ERP solutions, and offering lessons that date before and after the JIU review.

By comparing these experiences, the document highlights the crucial change management challenges that UN entities can expect to encounter when implementing ERP systems, and offers a set of guidelines on how to achieve the desired results.

¹ It had been hoped to also feature learning from the UN's Umoja ERP system implementation; regrettably it was not possible to engage appropriate contributors in the research.

THE SIGNIFICANCE OF ERP SYSTEMS IN THE UN

Enterprise Resource Planning (ERP) systems offer many potential benefits to the UN. Fundamentally, they enable organizations to integrate data and business processes under a unified information system sharing a common set of data, while their modular design allows the selection of specific functional applications – such as finance and accounting, human resources management and supply chain management – most relevant to the needs of an organization. These applications can then help organizations to automate and integrate business processes, and people to produce, share and access real-time information.

Because ERP applications have been designed to support “standardised” business processes, their introduction can promote good practices and thereby enhance operational efficiency, accountability and organizational performance.

As user needs evolve, they provide a platform that facilitates the coherent adoption of new technology, while the ability to remotely access ERP systems facilitates the outsourcing and/or offshoring of support services and functions, as well as the development of centralized shared service centres for the provision of those services/functions.

Such benefits have long been recognised and pursued by UN entities. Thirty years ago, in 1986, the International Telecommunication Union (ITU) took the lead in deciding that ERP systems offered a more sustainable and cost-efficient solution for its needs. Other organizations followed, and a wave of ERP implementations started in the 1990s, involving the Food and Agriculture Organization (FAO), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children’s Fund (UNICEF) and the World Food Programme (WFP).

A 2012 review conducted by the Joint Inspection Unit (JIU)² encompassed 21 entities that were at varying stages in the implementation of ERP systems, 13 of these using Oracle systems (including Oracle Financials, PeopleSoft and Oracle E-Business Suite) and seven using SAP³, with the International Civil Aviation Organization (ICAO) being an exception as a user of Agresso.

This sample of UN ERP installations reflects the dominance of on-premises monolithic ERP suites available at that time, with the choice between the two major vendors largely reflecting whether greater priority was placed on human resources applications (for which PeopleSoft was considered strongest) or accounting and finance (where SAP was often favoured). Exploiting the potential benefits of these systems seems to have been challenging.

The JIU found that 33% of these 21 systems had been implemented over budget, and 67% over schedule, concluding that this was predominately a result of weak project planning and management.

Accurately assessing the benefits derived was difficult because, while most organizations had defined expected outputs and outcomes in their business cases for ERP implementation, **few of them tried to measure quantitatively the benefits.** What does clearly emerge from the JIU review is that **much needs to be learned and applied if the UN is to realize the full promise of ERP systems.** Indeed, the Inspectors concluded that there was a pressing need to share lessons learned within the UN system and enhance inter-agency collaboration if more cost-efficient ERP implementation, maintenance and growth is to be achieved.

This case study has been designed to contribute to this learning and development process.

² “Review of Enterprise Resource Planning (ERP) Systems in United Nations Organizations”; Joint Inspection Unit, Geneva, 2012.

³ The United Nations ERP (Umoja) was categorized as SAP since this was its core system.

LEARNING THROUGH COMPARISON OF FOUR DISTINCT EXAMPLES

This document presents a comparative review of the experiences of four UN entities⁴, focusing particularly on their respective approaches to change management as a tool for realizing the benefits being sought from their ERP systems. While a relatively small number, the four selected entities are in many ways broadly representative of the UN market for such systems.

Three of the selected entities – **United Nations Development Programme (UNDP), the United Nations Office for Project Services (UNOPS) and the International Atomic Energy Agency (IAEA)** – were among the 21 covered by the JIU review. At the time of the review, UNDP and UNOPS (together with UNFPA and UN-Women) used the same PeopleSoft ERP system platform (called “Atlas”)⁵. **UNDP drove the implementation of Atlas, which went live on 1 January 2004**, this system being the result of UNDP’s first business-driven IT strategy, and a driver for change within the organization, supporting its push to become a practice driven, knowledge management and advisory organization. When launched, **it was the largest ERP implementation of PeopleSoft attempted anywhere**⁶, this being achieved in a relatively short space of time, particularly bearing in mind that it was introduced to all 166 offices worldwide.

While initially a partner on the Atlas implementation, more recently **UNOPS has moved to a new system (Unit4 Business World)**⁷, the implementation of which is the subject of this study. This system – which UNOPS refers to as oneUNOPS – grew out of an overall business strategy (in this case the 2014–2017 Strategic Plan), which focuses on ways of making the organization a favoured and adaptable development partner, through **excellence in the areas of business relationship management, business intelligence and analytics**. The move

to a new ERP was pursued because UNOPS identified the **potential to deliver a dramatic cost reduction as well as improvements in functional areas** not currently covered by the common Atlas ERP facility.

In 2012, at the time of the JIU review, IAEA had commenced implementation of an Oracle e-Business Suite system. **IAEA’s ERP solution – called the Agency-wide Information System for Programme Support (AIPS) –** was implemented to tidy up the fragmented systems environment that had evolved in the agency, and to create “one version of the truth” based on real-time, consistent and accurate information at all levels, which in turn would **help improve the effectiveness, efficiency and ease of use of the programme management support processes and systems so staff can devote more time on the Agency’s core mission**. This case study looks at what can be learned from this implementation now that IAEA is in the final phase of the project and thus nearing the full extent of the intended functional integration.

The fourth of the featured entities – the Pan American Health Organization (PAHO) – has only recently implemented its first ERP system. Smaller than the other entities, yet with a significant geographical footprint of more than 30 country offices, PAHO’s ERP implementation provides a valuable comparison. The implementation has taken place in a “post-modern ERP” context, where **configuring business applications accessed from the cloud (called “software as a service”, or SaaS) has profound implications on balancing customized integration with business flexibility and agility**.⁸ **PAHO was among the first UN organizations to select a SaaS-based ERP solution**. PAHO chose a system provided by Workday and implemented it between January 2014 and 2016. Conceived as a once-in-a-generation opportunity for

⁴ The gratitude of UNLOCK is extended to all the participating organizations, representatives of which gave willingly of their time to discuss their cases. They also helped identify and share useful reference documentation that has been critical to this research.

⁵ WHO and UNAIDS were also using a common ERP system.

⁶ It was the largest in terms of the number of modules/functionalities launched simultaneously across a vast number of geographical locations.

⁷ Formerly “Agresso”.

⁸ So termed by Gartner, a research and advisory firm providing information technology-related insight for business and technology leaders.

modernization of legacy systems, the SaaS-based system has introduced new change management challenges and provides the UN a valued learning opportunity.

To unlock the learning from each of these varied cases, research was conducted into what their ERP implementations aimed to achieve and how change management contributed to realization of these aims. Research was conducted in collaboration with representatives of each of the organizations, through a series of discussions and document reviews. The comparisons are not intended to assess the merits of the different systems that have been implemented, but rather **to help identify what change management tools and techniques are most likely to work under different circumstances.**

It should be noted that, except in the case of UNDP, the **reference projects have either only recently been completed or are still being implemented.** Consequently, it has not always been possible to properly assess the degree to which benefits have been realized, also limiting the degree to which comparisons can be made across projects. The case study therefore focuses on those lessons that can most reasonably be drawn and that can point to practical recommendations for those engaged in complex systems implementation projects.

Whilst the research was limited in scope and each organization's learning needs to be considered in context they all illustrate a shared appreciation that **change management is essential to getting the most from ERP system implementation**, both to help contain costs and to ensure that the investment delivers the required benefits in full. **All the ERP implementations presented here were driven by strong visions for the business, and a range of efforts were taken to communicating the “case for change” to the internal**

stakeholders, with strong and dedicated governance mechanisms being established to drive through the change process. Such approaches reflect what are widely considered to be best practices in change management, implying improvement since the JIU review which highlighted weaknesses in these areas. It is clear the four featured organizations appreciated that ERP implementations require comprehensive change efforts, and each applied a broad variety of change management approaches and techniques.

Critical to the success of these change exercises has been the **careful management of staff expectations** which, before implementation, may be highly varied. For example, at IAEA, numerous Programme Managers were under the impression that AIPS would also include an operational project planning tool, although this was not the intention; others hoped for even more streamlined processes and more delegated authority. It can be difficult to respond to such misconceptions after the fact, and this can detract from what might otherwise be successfully managed change, this emphasizing the need to promote – without over-selling – the benefits of the new system, and to keep communications factual.

As an element of managing expectations, all four cases also reveal a concerted effort to limit the degree of system customization and thus benefit from organizational best practices. This is another significant development, the JIU Inspectors having **warned against high customization of ERP systems**, on the basis that this can have a negative impact on ERP systems' usability and accessibility, as well as the total cost of ownership.⁹ All the cases presented show that, to varying degrees, **the implementing organizations sought to reengineer their business processes and limit ERP customisations**, taking the

⁹ The total cost of ownership of an ERP consists of software and hardware acquisition costs, implementation costs associated with the deployment and roll-out of the system (including the costs of external consultants and system integrators), operation costs pertaining to the maintenance of the system once it has been deployed, and ongoing change and growth costs regarding the upgrade of the system and addition of new functionalities. It also includes associated or hidden costs, such as: data cleansing; documentation update; migration, validation and reconciliation of data; user testing; and ongoing training costs.

opportunity of upgrades to revisit business processes, and working hard to control costs, particularly with respect to maintenance and upgrades.

To varying degrees, the four organizations used phased implementation as one way of managing risks. While this approach was most strongly favoured by IAEA and UNOPS, even one of the more ambitious “big-bang” implementations (UNDP) adopted a phased approach to roll-out to mitigate risks, while PAHO phased in its cloud-based system, although primarily due to software maturity considerations. **It is clear a phased approach often makes sense; at the same time, it should not automatically be assumed that this is preferable.** Mixed opinions were found even within those organizations that did phase implementation, some pointing to the danger of increased change fatigue and wondering whether it would have been preferable to “rip off the band aid in one go”.

Irrespective of whether implementation is phased, **the key lesson may be that adequate time must be allowed for all the complex and interdependent change management activities.** UNDP’s timeline was undoubtedly hugely ambitious, and seems to have been met with mixed feelings. The amount achieved in such a short space of time is impressive, and those involved in managing the change point to the need to drive through the implementation as quickly as possible to achieve the intended organizational realignment, the indication being that a slower pace may have in fact invited more user resistance to change. On the other hand, available evidence indicates that some of the users resented the pace of change, feeling that they were given inadequate opportunity to influence the system, consequently ending up with a system that offered them less functionality than they were used to. A comparison is worth

making with the highly systematic approach taken by, for example, IAEA in understanding and responding to user concerns, and addressing the chain of organizational impacts through measures such as modifications to job profiles.

To some extent, the need for user engagement in the set-up of systems is fundamentally changing. **Given the overall preference for implementing standardised ERP systems, users should not necessarily expect an opportunity to influence the design of the software.** Indeed, the trend towards cloud-based SaaS makes such a process somewhat redundant, the implication for change management being that effort must be spent engaging users in a clear dialogue on the objectives of the system implementation, what it will mean for the users, and how organizational processes and practices will need to be adapted to the standardised software facilities.

The critical importance of intensive user training also emerges strongly from all four cases. This is consistent with the conclusions of the JIU review, although the focus of such training, as well as related engagement activities, is evolving and may now need to be on **up-front efforts to gain acceptance of the system’s underlying philosophies, rather than on specific ways to navigate applications**, which should become increasingly user friendly. This is likely to become ever more important as the user base of ERP systems broadens beyond their typical base, encompassing programme staff and senior management to fully capture potential benefits of efficiency and effectiveness. While greatly improved access to data has the potential to improve decision making, IAEA found that additional efforts had to be taken to help users learn where to find and grasp the meaning of new (often more granular) data structures, including by ensuring that this information is presented in a user-friendly way.

Even when mindsets have been shifted, the right types of support will be essential to users adapting their behaviours.

The evolution of the nature of technology also **highlights the opportunity that “postmodern ERP” systems offer the UN for driving through the reengineering or streamlining of processes so that they align with best practices.** While this opportunity did previously exist, in the past there has sometimes been a tendency to resist this approach, the claim being that the “uniqueness” of UN policies and procedures makes the customisation of systems essential. Standardised systems offer a path to increased efficiency and effectiveness at a lower “total cost of ownership”. There is little evidence that the UN is so unique that these benefits cannot be realized, even if implementation of “out-of-the-box” offerings may not be viable in all circumstances. Rather, the introduction of more standardized systems should be seen as an opportunity to encourage enhanced understanding – as well as the creation of vital support documentation – of the strengths and weaknesses of existing policies and procedures. Having done so, organizations can seek to optimize their methods, most likely by focusing on those elements (the procedures) that are readily adaptable. By comparison, it tends to be far harder to change policies, and will probably only be worthwhile where existing policies cannot be worked around.

The focus of this type of change management is behaviour change – encouraging people to explore and adopt (sometimes radically) new ways of working. **What is often forgotten in such change is that, for behaviour to willingly change, it is first necessary to shift people’s perspectives and mindset.** When different behaviours are enforced but the mindset remains unchanged these new behaviours may not be consistently applied. PAHO discovered

this in trying to introduce its PMIS, concluding that the techniques used to shift perspectives and mindsets will need continual refinement if postmodern ERP systems are to deliver the full potential benefits for organizational change that they promise.

This echoes an earlier observation, relating to the lack of systematic evaluations of what has and has not worked in managing the implementation of ERP systems, and the level of benefits that can be expected when specific approaches are applied. The summaries of the four cases that follow¹⁰ highlight what has been attempted and what can be inferred from the information available. **It will be interesting to return in a few years’ time to the three cases recently implemented to see whether a more systematic approach to measuring benefits and capturing lessons learnt has been applied.** Among other things, it should be hoped that these will help the UN understand how best to encourage a diverse set of users to make full use of the functionality offered by the latest generation of ERP systems.

¹⁰ Because it is the oldest of the four cases, that of UNDP is presented first. This is followed by UNOPS, given that their current ERP system replaces the one that they previously shared with UNDP. Next is IAEA, with PAHO being the final case presented, to help contrast the somewhat different approach it has taken.

USING ERP SYSTEM IMPLEMENTATION TO DRIVE REALIGNMENT AT UNDP¹¹

The Context

Beginning 2001, the new business plan of Mark Malloch Brown¹² was pushing UNDP to be a practice driven, knowledge management and advisory organization. At the same time its Country Offices (COs) were faced with changes in their funding environment, with efficiency increasingly playing a major role. However, the organization was simply not equipped with the right IT tools to support its business needs, at that time using 21 different IT systems that were not integrated. With the benefit of external advice¹³, it was decided that **the best way forward was to introduce an integrated, global ERP system, the recommendation being that UNDP should re-engineer its business processes based on best practices in the ERP world.** This implied a considerable effort in both business process re-engineering as well as systems implementation. Taking this approach was expected to deliver benefits such as streamlining payroll across country offices, increased comparability and transparency of data, and enhanced ability to prevent fraud.

In September 2001, an ICT budget incorporating the ERP system recommendations was approved, based on a **benchmarking** against similar ERP implementations in both commercial as well as public sector organizations. The established budget was considered very conservative, so considerable effort was devoted to re-prioritization of key internal resources, with different stakeholders being requested to commit some of their key human resources to it. Additionally, UNDP sought budgetary commitment from the two partner agencies¹⁴ (UNOPS and UNFPA), amounting to 10–15 % of the total budget.

From October 2001 until January 2002 the project team worked on the ICT strategy, **this representing UNDP's first business driven IT strategy.** It provided the overall vision, **defining ICT as a driver for change within UNDP and establishing dedicated governance for its realization.** Previous experience with an SAP ERP implementation in UNDP Brazil and other SAP implementations at different UN agencies (such as WFP and UNICEF) led to expectations that SAP would be preferred as a platform for the entire organization. However, UNDP, following a unanimous panel decision in April 2002, chose PeopleSoft, as it was judged to offer better functionality (especially in the HR and project area). It was also considered the least expensive alternative.

How Change was Managed

Atlas – as the new system was named by UNDP – is a large-scale system. Indeed, **this was to be the largest ERP implementation of PeopleSoft attempted at the time of its launch,** with UNDP establishing an ambitious go-live deadline (1 January 2004). This challenge must be seen in the context of a global organization with 166 offices worldwide, not always able to make decisions as quickly as circumstances demanded. **Being able to work dynamically while satisfying the diverse interests of users would be critical to success and demanded new management approaches.**

Central to these approaches was the governance structure established, which was designed to ensure efficient decision making and effective

¹¹ In addition to information obtained during the case study, the review of UNDP has drawn on a prior internal case study document, "Realigning the UNDP", by Jens Wandel, Jan Mattsson and Georges van Montfort.

¹² Administrator of UNDP, 1999-2005.

¹³ Advice was provided principally by the Gartner Group and SPI.

¹⁴ While UN-Women (originally UNIFEM, prior to the creation of UN-Women by merging this with three other entities) uses Atlas, it is not part of the partnership implementing the system in the same way as UNOPS and UNFPA.

communication throughout the project. A key element in this structure was **the role of the Head of UNDP's Bureau of Management (BOM), as Executive Sponsor. This ensured that the project was placed high on everybody's priority list**, clearly communicating its vital importance to all concerned and helping attract some of the best people in the organization to contribute to it. Throughout the implementation, the Head of BOM spent around 25% of his time on this project, predominantly focusing on communication within the organization as well as with the different partners, making it clear that he was to be held accountable for the results.

Coordination and governance:

Coordination between the Decision Group and the Trilateral Advisory Panel (TAP) was achieved through overlapping membership as well as information sharing. The Decision Group was chaired by the Head of BOM as the Executive Sponsor and member of the Senior Management Team, while the TAP was facilitated by the Project Manager and operational coordinator for both policy and ICT aspects. Both groups met regularly (the Decision Group every 10 days and the TAP fortnightly) during the implementation. The TAP managed any decision that could not be taken outside of the governance structure, which motivated people to settle issues within the different project tracks rather than escalating them. Additionally, within certain restraints, the Project Manager was empowered to take decisions as and when needed, daily meetings between the Project Manager and Executive Sponsor greatly facilitating this rapid decision making process.

Under this Executive Sponsorship, **the governance structure had to on one hand enable adequate coordination between the partner agencies and on the other allow for UNDP to quickly make effective decisions** within the

organization's own hierarchical accountability structure. The first need was addressed by the establishment of a "Trilateral Advisory Panel" (TAP), charged with recommending decisions related to the implementation, including allocation of resources for customizations, building of interfaces, reports and conversion efforts. These recommendations were then to be confirmed by the Senior Management Team, the primary internal governance body of UNDP. Internal accountability was catered for by the "Decision Group", UNDP's dedicated mechanism for rapid turnaround on business re-engineering needs, approval of key contracts for system, system integrator¹⁵ and other support, internal staffing of key units, and coordination around ICT Strategy issues.

The scoping phase tested the governance mechanisms, given the large number of stakeholders and the tension between them. It proved difficult to achieve agreement on scope, discussions tending to focus on the modules rather than the essential processes. A solution was proposed by PeopleSoft, in the form **a prototype of 12 modules, which enabled stakeholders to clarify their requirements. Nevertheless, some of UNDP's requirements** were inadequately defined this ultimately resulting in 13,000 hours of unplanned time and material having to be included in the system integrator's contract, primarily to cater for interfaces with legacy systems and specific reports.

Notwithstanding any shortcomings, the prototype provided invaluable lessons and acted as a morale-booster for everybody involved, renewing their confidence that the project aims could be accomplished. PeopleSoft subsequently provided four of their key advisors (chosen by UNDP) from the prototype phase to continue working with the team during system implementation, which proved to be critical as it ensured both

¹⁵ Cap Gemini, Ernst & Young (CGEY) was contracted as system integrator, starting work on 1st January 2003.

technical and functional continuity, and was consistent with PeopleSoft's commitment to work as a strategic partner. **Day-to-day management of the project was generally open and informal, project management aligning with the milestones in the project plan, which helped create a true partnership between the integrator and UNDP.**

Given the urgency of the implementation, as well as the limited scope for change in the rules and regulations relevant to Atlas functions, **it was decided at the outset to minimise customisation to the system.** This approach contrasted to that taken in Brazil, where the highly customized SAP system then in place had to be given up to align with the rest of UNDP.

This commitment to minimise customisation necessitated significant re-engineering of processes to match the requirements of the ERP system. Given the absence of the kind of costs-benefits analysis typically associated with business process reengineering (BPR), UNDP devised a modified approach, initially identifying high level processes and then breaking these down into sub-processes. By applying standard questions to these sub-processes, it was possible to quickly identify those that needed re-engineering. **Radical decisions were taken to simplify processes where required, including in some instances to outsource the work. The key principle applied was that simplification comes from integration,** for example to eliminate the need for re-entering of information and the kind of difficulties that often arose in these handovers. Other concepts that were emphasised included the value of transparency and speed.

Once integration had commenced, a project team covering the ERP implementation as well as other tracks within the project (e.g. portal,

e-documentation) was assembled, a team of 18 professionals being handpicked by the Project Manager. All members were well respected and trusted in the organization and, through their networks, well positioned to engage a large part of the organization. The chosen team reflected ethnic diversity and was gender balanced; to enhance teamwork all members agreed to be based in a large conference room. The team came to be known as the **Work Improvement Tools (WITs) team, with members divided over several project tracks** (specifically finance, procurement, HR, project, e-documentation), each track having its own team leader and constitution. When specific resources were needed for any given track, the team leader could easily branch out and find the appropriate person wherever he or she was sitting in the organization, they then becoming part of the team and an additional knowledge source.

To ensure that UNDP was ready to cope with the radical change that the Atlas system would bring, **several initiatives were created to measure organizational readiness, communicate within the network and prepare the network for change.** One prominent initiative was the International Computer Driving License (ICDL) initiative which was designed to establish a minimum of computer knowledge for UNDP staff. This was the first-time UNDP introduced third-party standards into the organization. The initial aim was to have about 1,000 staff members trained in ICDL within about one year; in fact, around 4,500 staff members obtained their ICDL.

Another initiative was the **creation of the ERP readiness dashboard**, which contained basic information on each unit (e.g. staff size, user community), technical information (e.g. connection readiness, hardware), data readiness in each of the different data areas, as well as

organizational readiness (e.g. with regards to team and work planning). Country Offices as well as HQ divisions were asked to update this dashboard on a regular basis, wherever possible this information being validated by others. The results of the dashboard were openly available to everybody in the network and thus acted as a means of communication between the nodes in the network. An element of “Fame and Shame”, with a strong focus on the good performers, helped rally efforts and ensured on-time and quality delivery within all the different units. It was transformed into a performance dashboard after go-live where COs and HQ units could report on their progress in the usage of the new system.

To aid information sharing throughout the organization, **several functional e-mail based networks were created, providing an avenue for staff to demonstrate action and their corporate commitment.** The networks also helped sweep the landscape for issues, contributed to individual learning, and invited people to provide feedback. This feedback was not always positive, sometimes providing an outlet for frustration. However, they did help increase engagement; during the summer of 2003 the Human Resources network was launched as the first of the four functional networks, and within the first 24 hours it received a total of 84 postings. People felt that they finally belonged to a community and were tremendously empowered by it. The WITs team was astonished by the power unleashed by the HR network and quickly launched the other tracks’ networks.

Training was also a vital part of readiness efforts. The ICDL experience had validated the potential of Internet-based training, and highlighted the need for a similar tool for PeopleSoft training. The “OnDemand” tool was

found to meet requirements, the challenge then being how to populate this with the relevant training materials. The resources with the required knowledge were already fully occupied with development and testing of the system, so a team combining internal resources and consultants was established to perform this task. Nevertheless, populating, maintaining and updating the tool was a challenge. It was very positively received, as measured through the readiness assessment, although it could not respond to all the training needs and expectations, some of which could likely only be satisfied through face-to-face training methods.

Due to limited budget and compressed timeline, it was impossible to perform in-country training for each Country Office and therefore a **regional training approach was chosen.** A Training-of-Trainers was performed in New York, while a special allocation of training funds helped CO staff to participate in the regional training events, from which they could obtain basic understanding sufficient to pursue further self-development through use of the OnDemand tool. Follow-up training planned for five months after go-live would cover functionality needed at that stage of the system’s live-cycle.

Recognizing the particularly difficult challenges faced by crisis countries, these were given priority attention through around 50 tailored support missions to 21 country offices under the **so-called ERP in Crisis Country initiative.** After initial needs assessments support was provided to these offices in the local language across four modules: Business Process Re-engineering, Change Management, E-documentation and In-country ERP training. An initiative which was very positively received.

Not all the training was effective, in part due to technical solutions being taught becoming

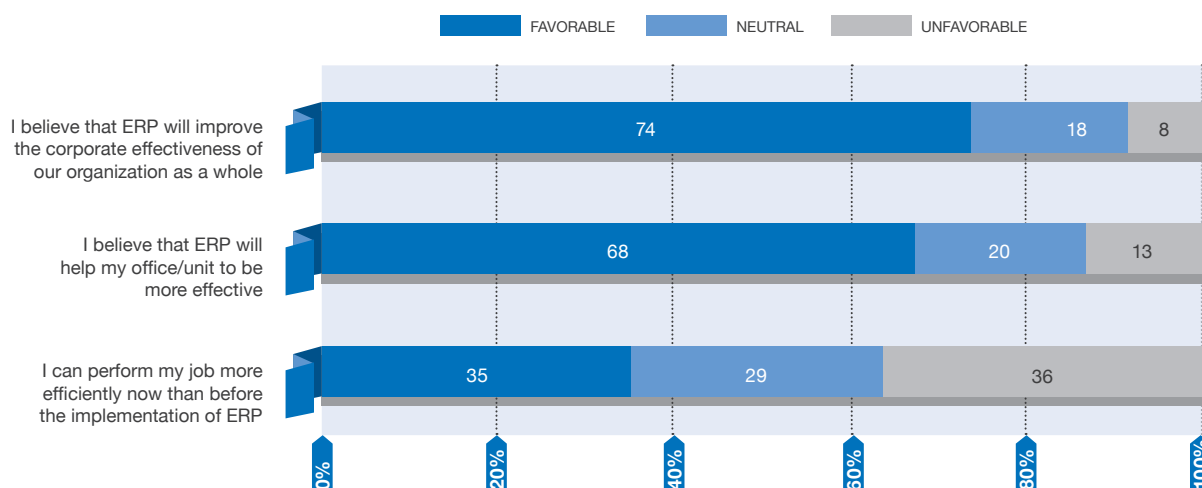
incorrect due to ongoing developments of the system. Nevertheless, the significance of the effort is evidenced by the regional events being the first ever training for HR staff, and providing approximately 70% of participants with their first ever management related training at UNDP. It was also a first opportunity for operations staff to consider aspects of functional integration.

During Spring 2003 UNDP identified a need for a helpdesk to support the different country offices and HQ units during and after system go-live. Another PeopleSoft module (the helpdesk module) was bought in April 2003, with a facility created to serve different time zones (based on best practices from commercial enterprises). Four locations were chosen – Malaysia, Bratislava, New York and Panama – supporting UNDP's business 24 hours per day in English, French and Spanish.

Despite the multi-faceted approach to change management, meeting the go-live schedule was a stretch for UNDP. During discussions on go-live scenarios, PeopleSoft and the systems integrator together indicated that it **would be high risk to go-live and that these risks were best mitigated via a staggered go-live scenario where 10 countries per day were being brought onto the system.** This would alleviate the pressure on the helpdesk and minimize the risk; if something went wrong it would only go wrong for a limited set of countries. The staggered approach would allow for some

time to resolve issues encountered during the live time of the first countries before the next batch of countries was to be engaged. Even at the time of deciding whether to go live, the system was not at 100% of the needed functionality and some testing had not been completed in full. However, feedback (such as through the dashboard) indicated that the organization was ready for the change; there were also many disadvantages associated with a delay. Taking all the different factors into account, **all three partner agencies agreed to a staggered go-live as planned on 1 January 2004. Within two weeks, 16 PeopleSoft modules including Global Payroll with multiple currencies had been rolled out to the 166 COs worldwide.** In February 2004, one month after the first country go-live and thus only two weeks after the last country went live, 80% of UNDP offices had made payments in the finance, procurement and project management areas system, altogether entering close to 10,000 transactions with a combined value of over \$186 million. Surveys held each month after the go-live date found that most of the users believed that the ERP system would help them perform better in their jobs, and that the efficiency of their office and UNDP overall would improve. This percentage continued to increase over the months after go-live. Moreover, the country office adaptation of the 'ERP system as the main tool to support business processes' increased steadily in the years that followed according to the annual global staff survey.

Results July 2004



What can be Learned from this Case?

Post-implementation reviews and the annual global staff surveys provide useful insights into how the change management efforts were received. Unfortunately, and perhaps surprisingly for a project of such scale and significance, it was not possible to obtain a comprehensive evaluation of costs and benefits, an observation that echoes a more general point made in the JIU review.

A Wave I implementation review from 2005 states “We fully recognize the formidable challenge of this joint and immense effort of implementing a worldwide complete ERP solution across three agencies under the effective and committed leadership of UNDP as acknowledged by the implementing partners we consulted. The immediate goal of implementing Atlas in UNDP was achieved successfully. However, some application / production issues and areas for improvement were noted during our review and our report includes recommendations to further achieve system stability and to improve the efficient implementation of Wave II”.

This review went on to list a number of recommendations for Wave II including broadening and strengthening of the governance mechanisms, better planning and resourcing of change management and training, and better involvement of business process owners in system configuration and testing. It also listed a number of classic ERP gains already being achieved such as adaptation of an online workflow, a single point of data entry at the point of origin eliminating duplication and reduced likelihood of data entry error, and better quality information and less document processing.

Reinforcing such impressions, it is clear from the annual UNDP global staff survey results that the acceptance of the ERP system as the main tool for managing business process increased

steadily in the years after the implementation. Favourable responses moved from 54% in 2005 to 60% in 2006 and 63% in 2007. However, the number of unfavourable responses remained at 19% in 2007, down only a few percentage points from 2005 (the remainder was neutral), likely reflecting the fact that parallel systems and offline business processes remained in place in many locations.

As such, while considerable efforts to manage change were made and many successes achieved there was still resistance from some quarters. Some CO's felt like they were taking a step back, especially those – particularly Brazil – that already had sophisticated and highly customized systems in place which they had to give up to align with the PeopleSoft implementation across UNDP. In response to the concerns expressed by certain COs on the limited set of available reports, particularly in Latin America, BOM decided to invest in a home-grown reporting interface that allowed users to access Atlas data on the UNDP intranet.

It may be that such resistance reflects cultural issues, and a lack of willingness to adopt to a new way of working (for example, electronic approvals required changes in behaviour). The implementation of Atlas also increased transparency, which might have created a perception of loss of autonomy. However, research identified possible specific causes of some resistance, notably Atlas' unfriendly user interface that looked too much like a mainframe system and that was difficult to learn. The result was **often slow adoption of new processes due to required increase in skill and need for system familiarization**. Still today, some staff remain reluctant to use the system themselves (particularly for running of reports) and request that others work the system for them. Reporting emerges as a significant problem, as every

report must be customized, which usually requires that someone from the Office of Finance perform the task. Issues which in part were countered by creating various data platforms for business unit performance data. There is also an impression that Atlas has not evolved as it should; every time something needs to change in Atlas it requires a lot of time and effort, and the more customized that part of the system has become, the more this is true.

These observations should be qualified by recognizing the success of completing implementation of such a large-scale system on time and budget, something that was acknowledged by both the system provider and integrator. Critical to this seems to be the management structure that was created, which helped to engage the full potential of the network. The dashboard appears to have been a very useful tool both for monitoring organizational readiness as well as to enhance communication

between the nodes in the network. The WITs team also helped reinforce key messages, benefiting from their representative nature.

At the same time, **it was clear that it was an extremely ambitious effort with significant operational challenges and risks.** At the more operational level decisions were sometimes unmade as the understanding of the implications grew, and the changes were not always properly reflected throughout the change management process. Also, lack of upfront agreement on the maintenance and upgrading budget for a system of this magnitude lead to lost opportunities in the years that followed as investments required to get the full benefit of the system were lacking. So in the end, and despite considerable efforts and a series of successes **with regards to managing the change process related to the initial implementation, perhaps insufficient resources were devoted to continuously updating and fully leveraging the ERP system.**

ENHANCING ORGANIZATIONAL AGILITY AT UNOPS

The Context

The Atlas partnership was expected to leverage the commonality of accounting standards, project budgeting and transactional business processes, integrating these in an ERP system. The partnership reflected the operational interdependence of the three agencies and aimed to increase harmonization of project accounting while reducing system investment costs for all partners. As with the other agencies, Atlas was implemented at UNOPS in 2004, with a significant upgrade (Wave II) implemented between 2005 and 2007.

In 2012, in response to an organizational wide review of IT systems, UNOPS initiated a study to evaluate its current systems and their alignment to its business, considering various ways of achieving improvements in its systems as well as cost savings. This study **found that UNOPS was suffering from a high degree of fragmentation of IT systems and data within the organization at all levels of the organization**, as summarised below. The review also highlighted that this fragmentation was **severely limiting the flow of information within numerous essential business processes**, such as “project to schedule and resourcing”, “resources to payments”, “recruitment to personnel”, “contracts to milestones”, and “milestones to payments”. This problem was in some cases compounded by patchy coverage of IT systems, it being discovered that Atlas covered only 34% of process areas, with in-house systems covering 27% and a full 39% having no IT system coverage. Combined, these system deficiencies were diverting much focus and energy away from service delivery and achieving UNOPS’ aspirations to simply managing the systems.

As the study progressed, it **took heed of the UNOPS Strategic Plan of 2014-2017, which focuses on sustainability and organizational excellence with the aspiration to be a development partner providing world class services**. This highlighted the need for an ERP system that could enhance and facilitate business relationship management, business intelligence and analytics, and institutionalization of UNOPS’ programme and, as well as the integration of any functionality of significant value. Analysis showed conclusively that **the replacement of Atlas with a dedicated ERP system had the potential to deliver not just a dramatic cost reduction¹⁶ but also improvements in functional areas not currently covered by the common ERP facility**. Consequently, in 2014 UNOPS started the process of implementing its own ERP system as a critical component of its Business Innovation and Improvement Programme (BIIP), culminating in the launch of oneUNOPS, the organization’s new ERP system, on 1 January 2016. It was estimated that the new system would cover 76% of process areas, with 10% being covered by in-house systems, leaving just around 14% uncovered.

How Change was Managed

A major driver for UNOPS was the need to be agile and flexible. As an operational arm of the UN, UNOPS derives its credibility from its ability to meet the expectations of its stakeholders, even under very trying of circumstances. To this end it was believed that a more agile IT system would enable such projects to be delivered more quickly, and/or with less effort. A major aim of the new ERP system was to increase various dimensions of organizational agility,

¹⁶ The cost of implementing and running Atlas over 12 years (2004-2015) was \$18m. Various in-house systems were developed to complement Atlas and the cost of these systems over the same period was estimated at \$13m, giving a total system cost of \$31.5m.

specifically strategic agility, portfolio agility and operational agility. In delivering on these aims, **two factors tended to reduce the need for customization of the new system**. First, UNOPS had already been striving to streamline internal processes as much as possible. Second, UNOPS had over the past 10 years sought to adopt industry best practices in the main areas of its operations – project management, infrastructure, and procurement. This emphasis on standardization has helped UNOPS become more effective in, for example, accounting for liabilities and, among other things, **was expected to reduce the degree of disruption that system users would experience**.

The potential advantages of oneUNOPS were therefore substantial. Nevertheless, **UNOPS was aware that the introduction of large-scale IT systems or similar changes are often met with resistance**. Previous ERP implementation experiences within UNOPS (including that gained from Atlas) as well as outside the organization helped it address this risk in various ways, including through the following measures:

- **Creation of a compelling rationale for change:** efforts were made to understand the views of users, managers and executive leadership their aspirations, frustrations

and needs in serving partners of UNOPS. The rationale for change was multi-faceted and based on extensive dialogue in the organization about business needs, strategic requirements, risks, partner demands and operational necessities;

- **Ensuring the project had strong executive backing:** the rationale for change had the full weight of executive leadership behind it. It was clear from the outset that the success of the programme would depend on the support of the Senior Leaders;
- **A robust change management approach:** the programme used a series of change management approaches such as a change readiness assessment, a campaign approach to communication with a wide number of stakeholders, establishment of a champions network, and comprehensive face-to-face and online training delivered to hundreds of practitioners at different levels throughout the organization.

This focus on understanding the potential impediments to successful change enabled the identification of specific challenges as well as the steps necessary to manage them, as summarized below.

CHALLENGE	MITIGATION STEPS
Issue of ownership: simply another IT system vs. a new way of working?	<ul style="list-style-type: none"> Held Corporate Operations Group (COG)¹⁷ meeting to have all directors agree and sign-up to the project. Performance management goal that related to support of directors to the ERP implementation – challenge of influence vs. direct supervision. Every practice seconded their “best” to the project as “Process Coordinator” to link practice knowledge and expertise to ERP implementation – didn’t always work perfectly.
Change fatigue within the organization. Several significant change initiatives were taking place simultaneously – such as restructuring of the regional offices, relocation of the key functions from HQ to the field.	<ul style="list-style-type: none"> Built urgency for change – town hall meetings, webexes and tailored presentations. Demonstrated that oneUNOPS success was the priority for Senior Management. Executive Director involved in communication about oneUNOPS. Highlighted benefits and managing expectations – strong business case, supported by communication campaign. Rolled out programme in three stages, avoiding the risks and pressures of implementing all at once.
Addressing political nature of decision making within UNOPS.	<ul style="list-style-type: none"> Created stakeholder assessment and engagement plan. Built bridges between groups/teams that found it difficult to cooperate. Building on the common benefits. Created strong accountability.
Engaging and managing a diverse group of organizational stakeholders.	<ul style="list-style-type: none"> Performed stakeholder assessment and engagement. Created campaign based communication plan. oneUNOPS champions network (superusers).F Focused on individual relationship building with the key stakeholders. Performed workshop/training in the field.

The system is currently being rolled out and is not fully functional in all areas, but initial feedback suggests that the following worked well:

- Meeting expectations:** UNOPS met expectations in terms of timelines for going live and being on budget, providing a well-working system (although some

people would have liked more functionality), and usability, with 70% responding that it was easy to use. While too soon to draw final conclusions, there are indications that the system has surpassed the expectations of partners in certain areas (for example, UNOPS is now sending pay-slips to partners such as UNHCR, which it was not able to do before);

¹⁷ The Corporate Operations Group (COG) is one of three main management groups that meets monthly to advise on strategic issues for the medium and longer term. The other two are the Senior Management Group and the Global Leadership Group.

- **System adoption by users:** adoption assessments show that there are still many challenges to address, but overall people are making increasing use of the system. UNOPS senses that the organization is moving from a “this is broken” to “I would also like to have this” type of conversation. UNOPS plans to conduct further adoption assessments at the end of 2016, which will likely focus on issues such as: Whether oneUNOPS became fully accepted; the level of satisfaction of different stakeholders; if leaders and change champions at different levels are fully supportive of oneUNOPS; and if people believe that the changes introduced with oneUNOPS are sustainable; and
- **Culture change:** UNOPS plans to conduct assessments of the degree to which culture has changed after the project’s completion. However, initial observations suggest that the oneUNOPS implementation has been “not such a big deal” in comparison to, for example, the introduction of Atlas.

Identifying critical success factors is difficult at this stage. **UNOPS change managers point to the vital role of “Champions” as well as the training programme**, with the champions proving to be a very effective way to engage people in the field and to build an ownership of the system. The champions were closely involved in development and delivery of the **training programme**, the objectives of which are summarized below.

oneUNOPS training programme objectives:

- Build common understanding of oneUNOPS processes, roles and activities
- Build user confidence for oneUNOPS functionality
- Build expertise in areas requested by office
- Improve operational capacity
- Improve organizational understanding
- Improve cross-organizational collaboration
- Understand and improve data quality
- Enable better reporting
- Enable better monitoring
- Ensure that UNOPS personnel reap all benefits from oneUNOPS
- Understand which functionality can be expected by Jan 2017

Around **15-20 two-day onsite training programmes were delivered at key offices, each one being tailored to that office’s needs. Champions from nearby offices were invited to join these onsite trainings, so that they could in turn train their own offices.** Combined with WebEx sessions and on-line programmes this approach worked well

in cascading learning through the organization, thereby reducing resistance. Significantly, **around 90% of those involved as champions say they would like to continue in this role, and approximately 70% indicated they felt confident to deliver further training to their colleagues.** This represents a solid foundation from which to move forward.

What can be Learned from this Case?

Interviews suggested that the resistance to change has been managed well so far. It is the assessment of UNOPS that experience from previous change initiatives and its organisational culture – at least to some extent – conditioned it to embrace change more readily than might otherwise have been the case.

Part of this adaptability may be ascribed to the communication effort. The organisational benefits of oneUNOPS for internal and external stakeholders were communicated repeatedly through various formal and informal channels to the end-users. Consistency in the messages, focus on the benefits, and factual information, helped to make the end-users receptive to upcoming changes. Once the first version of the system was developed, the project team made considerable efforts to reach out to the end-users for feedback and accommodate the proposed suggestions.

This promised responsiveness, however, can be a potential risk for the further roll out of the system. If the communicated benefits of oneUNOPS are

not fully delivered and the end-users' feedback is not addressed, UNOPS employee receptiveness to change will transform into dissatisfaction and resistance.

In some ways, the major organizational changes might still be to come. To date, the work that has been completed has largely involved the replacement of an existing ERP system, leaving the introduction of the new functionality and ways of working required to fully meet the business case needs as work in progress. Additionally, some of the analytical functionality that was available in Atlas, has not been fully replicated in oneUNOPS yet.

The system changes required to meet these demands will be rolled out in the 2017, and it is possible that this will get a different reaction from users, especially given that they will be required to more significantly change their behaviours. This ultimately will test the efficacy of the approaches taken to reduce resistance to change.

INTEGRATION FOR “ONE VERSION OF THE TRUTH” AT IAEA

The Context

IAEA had incrementally introduced specialised packaged software and developed many applications to address pressing requirements in administration and programme management. However, external reviews concluded that continuing with the piecemeal evolution of both organizational processes and supporting systems was no longer effective. By the mid-2000's, **IAEA was committed to move to a holistic approach consistent with both external best practice and the strategic direction of the UN and other public sector international organizations.**

In 2006, a feasibility study was undertaken¹⁸ to assess the benefits and impact of creating an integrated Agency-wide information system to support programmatic activities. This encouraged extensive user involvement from all departments in a comprehensive review of relevant processes and systems. The conclusions of the study were that **implementation of an ERP system was the most desirable, maintainable and cost efficient foundation for creating an Agency-wide Information System for Programme Support (AIPS).** It was also concluded that **ERP software would also be the most effective means of incorporating external best practices and enhancing operational transparency.** Reinforcing the case for introducing an ERP system was the pressure to adopt International Public Sector Accounting Standards (IPSAS) throughout the UN system by the financial year 2011. It was estimated that IAEA would need to invest €6.4 million to upgrade and integrate existing systems to support the mandatory requirements of IPSAS, a need that would be eliminated by the implementation of a new standard ERP software environment. It was estimated that the Agency was spending approximately €48 million

annually (in staff resources) on administrative activities related to the eight support areas, and that **the system would deliver €5.8 million in net benefits annually, across the Agency, after all new processes and supporting systems are fully implemented,** as a result of the retirement of 45 out of the existing 60 support applications, more effective procurement through integrated vendor management and — the largest component — savings of staff time through process improvement.

Following a comparative evaluation, Oracle e-Business Suite was chosen as the ERP system, with Oracle being contracted in April 2009. **The original plan was to introduce AIPS in a series of four implementation phases known as “plateaus”.**¹⁹ Plateau 1 covered Finance, Procurement and Programme Implementation, and went live on 24 January 2011, on schedule and within its budget, enabling the adoption of IPSAS. Subsequently, the scope and timetable of the plateaus had to be adjusted to the **funding available, which was secured on a yearly basis from the Agency's regular budget. While this was not expected to affect the content or quality of the finished system, this funding arrangement did lengthen the project's overall timetable and increase overall costs,** as it required fresh procurement processes to be carried out from scratch for each plateau.¹⁹ Hence, while the original intention was to conclude project at the end of 2014, it is in fact being concluded in early 2017.

Notwithstanding this, Plateau 2 enabled the new project planning and monitoring system, known as “AIPS Planning”, to go live on 27 August 2012, which was used to prepare the 2014–2015 Programme and Budget

¹⁸ Atos was retained to assist with the feasibility study.

¹⁹ The Agency's procurement process normally does not allow that obligations are made before the funding is secured.

How Change was Managed

proposals. The system is also used for forecasting, project assessments and the recording of risks, **AIPS thus serving every stage of the programme cycle and fully supporting results-based management.** The domain of contacts management was introduced gradually starting August 2012. Plateau 3, covering human resources and the Agency's payroll went live on 24 December 2014. Plateau 3 introduced e.g. enhanced HR self-service facilities; a new recruitment system; dashboard reporting for managers, showing their financial, staffing and purchasing status at a glance. These changes affected all the Agency's 2,500 staff, around half of whom became AIPS users for the first time. Plateau 4 covers the management of travel and meetings/events, work for which began in 2014 with the drawing up of business requirements. The Travel component went live in September 2016 and Events management in December 2016. An on-line portal to allow Member States access to the new event solution is planned to be launched beginning of March 2017. This will complete the AIPS project, which was conceived primarily to serve IAEA's Member States and the delivery of its programme, the overall objectives being to:

- Improve the effectiveness, efficiency and ease of use of the programme management support processes and systems so staff can devote more time on the Agency's core missions;
- Ensure the availability of real-time, consistent and accurate information at all levels — “one version of the truth” — both internally to the Secretariat and externally to Member States, on programme delivery activities, thereby increasing transparency;
- Ensure a sustainable and well-functioning application support environment.

At the outset, it was recognized that a project of the proposed nature and size comes with a significant risk. However, **the Agency believed it could manage this risk by approaching the implementation in “plateaus” and building on its own systems in areas where the standard software is either not mature or is an imperfect fit.** IAEA also sought to benefit from the experiences of the early adopters in the UN system²⁰, such as FAO and UNICEF, which highlighted that the benefits are real and substantial but that the projects are large and complex, and that customizing the software to meet the needs of the UN system can become a painful experience.

In August 2009, the AIPS project's governance and project management structure were established and a dedicated AIPS project team created, **the complete management structure of the AIPS project comprising six entities:**

- **Project Executive:** senior executive with overall accountability of the project;
- **Project Board:** gives major direction to the project;
- **Business Process Owners/Governance Groups:** responsible for process harmonization, driving change within their organizational entity and acceptance;
- **Project Management:** responsible to deliver the project within agreed the constraints;
- **Project Management Office:** supports the project in all project processes, vendor management, project delivery and administrative matters; and
- **Quality Management:** conducts quality reviews, internal as well as external.

²⁰ IAEA sought to leverage the know-how gained by other agencies that had embarked on ERP system implementation. For example, the agency encountered significant problems with its Treasury module; a colleague from WHO worked with IAEA for several weeks to resolve the issue. Such collaboration has been reciprocated in areas where IAEA has been at the forefront (for example, in the context of TALEO and Hyperion, sister organizations have come to see how IAEA has changed its business practices).

Although the project is led by the Department of Management, **its governance encompasses all Agency Departments and is supported by subject matter experts from across the organization.** A permanent, centralized support structure — the AIPS Services Unit (ASU) — was introduced early 2011 to be responsible for the post go-live support working closely with the project team. To build capacity and organizational buy-in, and in addition to the support available from the implementation partner, each Lead-Position within the AIPS-project such as PMO-Lead, Work Stream-Lead and Technology Lead have been staffed by an IAEA Manager.

The objective of the Change Approach has been to **facilitate a fit among the three areas which are impacted by and benefit from the AIPS project, namely organization, process and people.** A comprehensive change management strategy, including communication and training plans, was developed for each plateau and shared with staff members to help them prepare for change. With the approval of the Board and the Director General, **the Agency's Financial Regulations and Rules were amended to reflect the business changes to be introduced by AIPS and IPSAS.**

Based on lessons learned from Plateau 1 specific Governance groups were established for each key functional area at the outset of each Plateau **containing representatives of the parties most significantly affected by or involved in the changes.** Holding authority and responsibility for determining business changes, the governance groups provided a clear structure for oversight and decision-making, and ensured that the project was constantly guided by the expectations of its key stakeholders. At the outset the governance groups identified their overall expectations for their respective domains. These were then refined into a **“vision statement” for each domain, which served as a point of reference**

throughout design and development. The vision statements were then circulated to all subject-matter experts (SMEs), departmental representatives and the AIPS Project Board. All relevant policy questions, along with their accompanying analysis, options and decisions, were captured in a special document to ensure transparency and traceability.

This process enabled specific organizational impacts of the planned AIPS implementation to be identified, in terms of the way people work, the defined practices, the integration between sections / departments, the used systems and tools (other than Oracle), and the relationship with vendors. **Organizational impacts were classified into four impact areas: people, practice, integration, and technology,** to enable clear definition of appropriate solutions and activities for the change impact²¹. To capture all information relating to organizational impacts, a comprehensive template was developed, to **create a master list for all changes, listing their expected impacts (categorized as high, medium or low) and their associated change and preparatory actions.** Based on the list of Organizational Impacts a **“Change Action Plan” was prepared** to highlight the needed Change Actions, designed to result in change deliverables such as targeted communication to specific stakeholder groups, tailored training and updated job profiles. The Change Management team and the domain leads jointly owned the list of organizational impacts, the actions needed in response to expected changes being determined in collaboration with those chiefly responsible for carrying them out. The representatives of the relevant business areas were required to confirm in checklists that change-related actions had been completed. For example, where process changes required alteration of staff responsibilities, and therefore their job descriptions, it was ensured that such changes were communicated to HR and other affected units so that they can act accordingly.

²¹ See Table 1, Annex A for categorization of organizational impact.

To ensure deep-reaching communication throughout the Agency's departments, a **"Change Network"** was set up during Plateau 1 (as part of the Organization Readiness team of the Organization Change Management work stream) to closely collaborate with the project on the one hand, driving the changes towards the end user on the other hand. The specific purpose of the AIPS Change Network was to:

- Establish a communication channel that supplements communications and training efforts directly from Divisions / Functions;
- Create acceptance among impacted employees by giving them an opportunity to be involved, voice their opinions, and to be correctly informed about how the change will affect their day to day work and what the benefits are;
- Build a change leadership for the future;
- Reduce change resistance by encouraging impacted employees to understand the need for change and its advantages; and
- Provide feedback regarding conducted change activities back to the project team.

In practice the change agent model was not successful, the conclusion being that the Agency's culture does not encourage the degree of proactivity needed for such a network to achieve its purpose. After Plateau 1 **the change agent model was replaced by a Super User Model, which was conceived with a similar purpose but organized to better fit with IAEA needs.** Under the new arrangement Departmental Super Users were defined as members of the intended user community who:

- Are process experts in their process area;
- Are Oracle module experts in their process area;
- Understand why processes have been so designed, and why systems have been so configured; and

- Will grasp the full implications of any proposed change to the existing design.

Super Users were permanently available to provide AIPS users with expert help and advice, and hence in comparison to the Change Network – were integral to AIPS development, testing and operational support, playing a crucial role not only in the transition to the new systems and processes but also in their acceptance and establishment.

For each plateau, **preparedness activities were organized to help institutionalize the new systems and processes.** The approach specifically recognized that in any large change initiative it is inadvisable for all communications to come from a single, partisan source, and that messages are more likely to be accepted if they are spoken by a variety of voices and authorities. For this reason, and wherever possible, **readiness sessions were managed jointly with departmental representatives, and business owners were encouraged to take the lead in explaining and advocating the imminent change** to their departments²².

As each new part of AIPS went live, the AIPS Project Team provided minimum three months of close support and training to the user community and the ASU to ensure a smooth introduction. For example, in 2013, five distinct classroom courses were given to around 2,200 trainees, and Plateau 3 go-live was accompanied by 16 different training courses and comprehensive arrangements for communication and support. Additional methods included: walk-in sessions, arranged so that during the weeks immediately after go live users could consult members of the AIPS team in person on any matter relating to the new systems and processes; and preparation of on-line help, self-teaching materials and printed

²² The approach adopted was informed by the realization that the departments which adapted to AIPS Plateau 1 most comfortably were those who had been most proactive in change management communication.

reference guides to support training and serve as permanent user reference facilities.

A support team serving the AIPS system and its users is now well established; support can be requested online or by an email or phone call to a dedicated help desk. **A vital component of this support has been the Super Users**, as they could:

- Act as local experts, providing guidance to colleagues and liaising with the AIPS support unit in resolving key user concerns (though not replacing the existing first line of user support);
- Serve as points of contact for newcomers;
- Help the AIPS Services Unit determine future training requirements;
- Contribute to the impact assessment for any change planned after go-live;
- Test proposed changes before these are introduced in the production system; and
- Support process owners in all key decisions leading to process changes.

This combination of change management approaches has enabled each plateau to be completed on time and within the set budget. Inevitably a change of this magnitude creates considerable upheaval and issues continually arose and had to be addressed, including through the delivery of additional training and support as appropriate.

Although the full benefits of AIPS will not be realized until all the plateaus have been completed and stabilized, **the system has already brought the Agency tangible improvements.** In repeated user surveys, most staff members (and especially within the Department of Management) have said that they like AIPS and that it helps them work better, while **the Agency can now deliver a substantially increased programme using**

fewer support staff. There has been a shift in the role of managers and executives from operational control to organizational guidance and “management by exception”; the portion of the Agency’s budget dedicated to Department of Management has decreased substantially and the overall number of General Service staff has been substantially reduced, due in part to greater automation and less use of paper (for example, self-service for time and attendance management and requests for benefits and entitlements). In the many areas where AIPS has required changes to policies and rules it has invariably brought simplification and clarity.

The new solution **supports the complete Results Based Management (RBM) cycle with planning, implementation and assessment**, something that is appreciated throughout the Agency, and the clear, **enforced linkage of IAEA’s Medium-Term Strategy to its programme delivery has been commended by its Member States**, with managers required to explain (in Hyperion²³) how their areas of activity relate directly to the fulfilment of the Agency’s programme. IPSAS implementation has brought full accrual accounting to the Agency, meaning greatly improved transparency. **Accountability has also improved thanks to a clear definition of project managers as allotment holders.** Reports which previously required great collective effort to generate can now be produced with a few clicks. The Agency’s draft Programme and Budget are now prepared over a period of weeks rather than months and annual financial closure is completed approximately one month sooner than before. The resultant savings in time and effort from these and other benefits have allowed IAEA resources (and therefore funds) to be used more efficiently.

²³ Hyperion, a leading provider of performance management software, was acquired by Oracle in 2007. IAEA’s decision to use a modified version of Hyperion for programme and project planning has proved highly successful, and is now regarded as an exemplar by other UN bodies.

What can be Learned from this Case?

The JIU report highlighted the **potential benefits of a phased approach to implementation and the IAEA case illustrates many of these**. The plateau approach adopted provided logical points of assessment where both project and solution design could be adjusted based on lessons learned or changes in technology. However, building and releasing the solution in stages made some integrations more complex, requiring temporary and cumbersome processes to bridge the period between plateaus. **In summary, the additional effort related to integration and the prolonged timeline for a phased approach most likely increased the cost compared to a ‘big bang’ approach**. Moreover, by lengthening the overall project timeline **this approach perhaps added to feelings of change fatigue** within the organization.

The multi-layered governance structure appears to have been vital, balancing inclusiveness with effectiveness, and emphasizing the principle that the business process owner must own and lead implementation. By being inclusive IAEA could

follow an iterative approach that helped gain genuine user acceptance. **The rigorous approach to identifying organizational impacts was pivotal in anticipating and managing change**.

IAEA discovered it was important to plan each major milestone, and to communicate the plan early and stick to it. **Generally, communications played a vital role in achieving required stakeholder engagement**, with members of IAEA’s change team reporting the importance of: engaging with the strongest critics, documenting decisions and prioritizing incremental adjustments; communications being continuous, factual and modest; and management giving public support and highlighting success. **Training also emerges as a critical element of success, with IAEA finding that it should be mandatory, and cover policy, business processes and system issues**, and that the best results are achieved when the business and end-users have been involved in training development.

RENOVATION OF WORKING PRACTICES AT PAHO

The Context

The PASB²⁴ Management Information System (PMIS) is PAHO's first ERP system. From a project that started in 2010, PMIS was conceived to address the challenges posed by PAHO's aging administrative and management information systems. The continuation of the status quo was not an option. Some systems were over 30 years old and required substantial and costly levels of maintenance. Critical data were hard to gather and not always reliable. Different technological platforms did not speak to each other, while key components of the old system were hosted on mainframe computers slated for decommissioning.

PMIS was implemented on time and within budget between January 2014 and 2016, with human resource modules going live in 2015 and finance modules employed in 2016. **Intended as a once-in-a-generation modernization and renewal of legacy systems, PMIS is a cloud-based ERP solution.** PMIS aligns PAHO with the trend towards systems operated through the internet, instead of on servers physically at a particular location.

Various considerations drove PAHO's preference for a cloud-based ERP solution. Functionally, cloud-based systems tend to have **better mobile interfaces** than traditional systems, allowing users to perform tasks on tablets and smart phones. This consideration was especially important, given PAHO's decision to make system use compulsory for staff, regardless of role and location. All personnel use PMIS to integrate programme delivery, through PAHO's results-based management framework, with operational management, using International Public Sector Accounting Standards. Day-to-day programmatic and administrative work occurs through PMIS transactions.

Additionally, the **cloud-based option was judged to be safer** than an on-premises system, due to the backup structures that cloud-based systems use to prevent data loss. Access to PMIS in a post-disaster or emergency situation was also an important PAHO consideration. A cloud-system is highly unlikely to be disabled by a natural disaster and can be accessed by PAHO personnel in a disaster-stricken area, provided an internet connection exists. "In the cloud" systems mitigate PAHO's disaster risks because, after catastrophes, internet access is often quicker to be re-established than physical infrastructure.

Due to their greater standardisation, cloud-systems can also be cheaper to maintain, easier to upgrade, and faster to enhance. **Accurate calculation of PMIS maintenance and upgrade costs, and ability to re-configure the system to meet the changing needs of staff and managers, were fundamental to PAHO's system selection.** PAHO has performed hundreds of enhancements through PMIS re-configurations in the first ten months of using the system. These frequent updates permit optimization of business processes, a clear benefit. However, system reconfigurations also pose hidden costs by consuming PAHO personnel's time and requiring re-training.

The main constraint imposed by PAHO's preference for selection of a cloud-based system is that PAHO is forced to customize its procedures to fit the use options of the cloud-based PMIS' applications, rather than the other way around. PAHO was aware from the outset that it could not replicate its complex and diverse procedures one-to-one in PMIS. PAHO had to adapt many

²⁴ The Pan American Sanitary Bureau (PASB) is the executive arm of PAHO.

existing procedures to PMIS. PAHO also must continually monitor and manage PMIS system enhancements, which are released in the cloud and may require additional changes to PAHO's work practices.

How PAHO Managed Change

A cloud-based, configurable-not-customizable, ERP solution like PMIS meant that **PAHO was unable to perform a classic “as-is to-be” analysis** on which to base change management interventions. Instead, PMIS offered best practices that had to be integrated into change management efforts.

PAHO had to manage a rather abrupt move from a legacy world of specified functionality to more limited PMIS business processes and configurations. The inability to specify or re-specify existing business processes led to a **change management challenge that was much more than a systems-only replacement.**

PAHO faced a considerable change management challenge because PMIS' human resources module

was more developed than its finance module. **Gaps in system functionality necessitated PAHO's close work with the PMIS systems developer** to find creative systems responses to PAHO's requirements.

Another important change management issue for PAHO are the **challenge and opportunities of frequent, automatic ERP software upgrades.** These rarely match existing or internally designed business processes, requiring PAHO to redesign internal working procedures.

Anticipating these PMIS change management challenges, PAHO made **special, ring-fenced line item provisions for change management and training in the overall implementation budget.** A dedicated, cross organizational change management team applied change management approaches across the organization in support of the ERP functional implementation.

The following are examples of the support work that illustrate PAHO's response to the identified change management challenges.

Scale of Implementation

- Challenge – PMIS is more than just a systems replacement. The sheer scale of PMIS implementation affects virtually every system and worker at PAHO.
- Response – **PAHO top executives understood the importance of their role as sponsors.** Throughout the multi-year PMIS project, the PAHO Director and Executive Managers affirmed the PMIS approach through briefings, presentations, and documents. Each member of the senior team expressed their support for PMIS in a video that was translated in four languages and distributed throughout PAHO for the first phase of the implementation in 2015. The following year, when PMIS' effect on individual PAHO personnel became clearer, the change management team organised an all-PAHO conference where senior management made a series of presentations on a written booklet, "Mandate for PMIS-related Organizational Change".
- Response – PAHO recognised that PMIS was a large-scale implementation that would affect everyone in the organization. **Rather than waiting until the impact of the new solution was understood, PAHO began training and empowering change agents within every department and country office.** As the project progressed, change agents were continually informed about system functionality, implementation plans, and identified challenges. Change agents ultimately became the first-level support network for unit-level staff both before and after PMIS go-live.

Configurable-Not-Customizable

- Challenge – PMIS was built upon a cloud-based programme, which incorporates best business practices from a wide variety of organizations. These pose a challenge for any organization, like PAHO, with a long history of unique business practices. Instead of designing new processes that incorporated PAHO's existing terminology, **PAHO had to learn new terminology that did not always have a clear relationship with current terms.** This initially created confusion and anxiety.
- Response – **PAHO made significant investment in training for subject matter experts** to ensure that they understood the cloud-based solution and how this differed from current practice. These "business process experts" (BPEs) became authoritative translators of old to new terms. BPEs also helped develop enhancements, manage and communicate changes about processes.
- Response – PAHO developed and implemented a **multi-step end user training programme around a PMIS Passport.** The PMIS Passport gave staff definitions of key terms and lists of training courses. The Passport also offered team exercises to clarify and encourage intra-staff dialogue about the expected impact of PMIS on day-to-day work and the overall mission of the Organization. The PMIS Passport was a physical document for each staff member to use and keep.

Future Platform versus Complete Solution Today

- Challenge – PAHO chose a cloud-based solution with a mature human resources module and a developing finance module.
- Response – Knowing that the human resources module had more functionality, PAHO chose to implement that module first. This meant that everyone learned the PMIS user interface early, before tackling the more difficult module.
- Response – To communicate clearly the rationale for PMIS, **every sponsor heard directly from the Executive Sponsor why PAHO chose this path.** The overall message conveyed was that PMIS was an opportunity for PAHO to move to a new platform, not simply a new solution, and that the platform would serve as a baseline for future functionality and enhancements.
- Response – Given the storied and difficult history of custom-developed applications, there was wide-spread concern among PAHO staff that they would have to live with whatever PAHO implemented for many years. When staff saw **early system enhancements made to the Human Resources module soon after go-live in 2015**, staff began to believe that on-going system enhancements were a real and practical answer to changing business needs.

Best Practices versus Historic Practices

- Challenge – Like many legacy system business practices, PAHO's had been developed and modified over time. As legacy systems did not always talk to each other, many PAHO processes required extensive, out-of-system administrative actions. Within PAHO, many managers were concerned that data entry would become an overwhelming burden to them. And many administrative workers were concerned that their data entry tasks – and therefore job workload – would also change.
- Response – **Several change agents grasped the improved data analysis and decision-making that the new processes could provide.** As they became vocal proponents they won others over, and made recommendations for system enhancements that would build on the new approach.
- Response – New, ERP-supported best practices place the data entry responsibility on the person who has the greatest understanding of that information. PMIS allows for delegation of tasks or roles, so managers can delegate data entry to workers more familiar with this type of work.

Ability to Use Classic Change Management Philosophies for a Cloud-based System

- Challenge – The change management team wanted to use the philosophy and approach traditionally used for ERP implementation. Yet PAHO's distinct organizational culture, and PMIS' cloud-based systems, prohibited employing the same change management techniques that had been successful elsewhere.
- Responses – PAHO change management team adopted different tactics unique to PAHO:
 - Inside-Out Change Management – As described above, PAHO asked each departmental sponsor to identify and assign Change Agents. While not every change agent embraced the role, those that did formed a strong cadre of catalysts for change within their spheres of influence. Change Agents were honoured and empowered by participating in activities and receiving materials prior to the general population.
 - Across the Board Involvement – PAHO conducted **dozens of events** for a handful to several hundred people to ensure that everyone was engaged, involved, and informed about PMIS. These events included opportunities for questions and answers from the Project Team and Sponsors.
 - Wide Variety of Interactions – **PAHO recognised that people need to be involved many times in a variety of ways.** In addition to being involved in organization-wide events, staff received reference documents in four different languages.
- Practical Tools and Techniques:
 - Many people within PAHO equated “training” with “instructor-led classroom training”. Based upon the scale and the scope of the training required, PAHO could not deliver instructor-led classroom training to each individual. The PMIS team recognized the importance of helping people understand that **training would be delivered in a new way.** Staff would assume responsibility for their own learning through a variety of methods.
 - The PMIS team developed a “PMIS Passport” to communicate PMIS learning goals and approaches. This multi-colour document was the size and shape of a typical passport, with places for stamps when training activities were completed. Following the Change Agent philosophy outlined above, Change Agents received their passports first and were trained on how to deliver this information to their assigned constituencies. **Every PAHO staff member received a personal PMIS passport in their native language.** This tangible tool helped underscore the new approach to PMIS training.
 - As PMIS progressed, everyone began to learn more about how the cloud-based solution would actually work. Questions arose as to whether the end solution would honour PAHO's unique environment, mission, and business policies. The PAHO Director and Executive Management Team developed the Mandate for PMIS-Related Organizational Change, an **eight-page brochure to underscore the reasons why PAHO was proceeding with PMIS,** how this would affect staff, and why PMIS was a good for the Organization. Elaborating the PMIS Mandate required each member of the PAHO Executive Team to be in full agreement about PMIS goals and approaches.
 - The Mandate document was **delivered to every individual in their own language with an attached message from the PAHO Director.** The Executive Team then conducted briefings for several hundred people at a time using the key points from the Mandate. Everyone could clearly see that the entire Executive Team supported the Mandate.

What Can Be Learned from PAHO?

PAHO implemented an ERP solution on time and on budget, and the choice of a cloud-based solution was a critical factor in PAHO's success. However, **cloud-based solutions pose change management challenges that are different from classic ERP implementation.** Because PAHO selected an ERP that could not be customised, PAHO had to customise its change management approach to address the challenges and opportunities offered by PMIS.

PAHO approaches to successful implementation of a cloud-based ERP system could apply to more traditional systems. One such example is how PAHO overcame initial staff scepticism of the proposed PMIS project. PAHO had discussed PMIS for several years, and many personnel were uncertain whether the project would indeed go forward. However, when each member of the Executive Team appeared in an early video to express support and sponsorship for PMIS, staff began to believe that PMIS was real. Staff recognised that PAHO's top executives were personally committed to PMIS' success.

By comparison, **one of the challenges more peculiar to a cloud-based solution is the difficulty of explanation – in terms that were understandable to PAHO staff – of how the system would work.** Staff could see demonstrations of sample processes, but demonstrations did not always make sense as the terminology was foreign and the processes were different. Staff members were going from the certainty of how they did things today, to the uncertainty of how things might be done in the future.

Full answers to “how will PMIS work” were not provided until personnel were trained. However, during the many months prior to training, the PMIS team focused on answering the questions that could be answered, providing information on how the project was proceeding, continually explaining the configure-versus-customise philosophy. These activities focused on building trust

through transparency and giving staff access to those with the most insight. **Essential to success was honouring staff's concerns, hearing their questions, and taking them seriously.** While not everyone got the answers that they sought, they did participate in on-going dialogue. Staff stayed involved rather than disconnecting.

Finally, as the PMIS project progressed, team members recognised that many **staff members did not understand the distinction between policy and procedures.** Staff interpreted potential procedural changes required by PMIS as violating PAHO's policies. In some cases, policies had not been clearly documented, so the procedures had been considered as policy. Yet, in other instances, policies were construed as barriers to necessary PMIS-related changes to business processes.

PAHO launched an effort to educate everyone on the differences among policies, processes, and procedures. PAHO also launched an effort to document and catalogue in a library the new standard operating procedures of PMIS. Further, PAHO recognised that implementing a best-practice driven, cloud-based approach would require some policy changes. When essential, and by following PAHO's policy revision processes, the Executive Team revised policies and communicated these changes to the Organization.

The inability to customise the cloud-based PMIS system had an unanticipated benefit of forcing a clean-up of the enabling, policy environment. Through PMIS, PAHO was able to establish sensible policies that supported actual work processes and were clearly linked to implementing Standard Operating Procedures (SOP). These new policies and SOPs brought PAHO gains in efficiency and effectiveness through a renovation of working practices at PAHO.

LOOKING AHEAD

All four cases highlight lessons in change management that can be applied to the implementation of ERP systems, and indeed any other large scale organizational change initiatives. The strategic nature of the business cases underpinning the systems, high-profile sponsorship from senior leadership, dedicated governance infrastructures, broad mobilization and engagement of staff, intensive training activities, and highly targeted communications – are all considered to be essential to the successful transformation of organizations. Evidence of such approaches is a positive response to some of the concerns raised by the earlier JIU review.

to fully define what success will look like, so that it is possible in some way to measure the cost savings or other benefits that derive from fundamental changes in behaviour. Until this happens, it will remain difficult for the UN to confidently grasp the full potential of the technology now available.

What is also clear from these cases is that they **should be considered transformative, as all demonstrate the opportunity that exists to use technology to drive beneficial change in behaviour and practice.** There is evidence that latest technology increases this opportunity, but will demand different ways of promoting the enabling necessary changes in behaviour. It also seems likely that the opportunities afforded organizations will continue to increase, but perhaps become more complex. A postmodern ERP strategy offers the possibility to build hybrid systems by “shopping around” and integrating applications sourced from others, for example through the many new shared services centres that are being created within the UN.

Such opportunities tend to further emphasize the need to address what emerges as a continuing weakness in ERP implementation projects in the UN, namely that of adequately measuring the benefits that arise from the systems. **Considerable effort will be required**

ANNEX A: DETERMINING ORGANIZATIONAL IMPACT AT IAEA

ORGANIZATIONAL IMPACT CATEGORY	DEFINITION
People	Refers to an impact in following sub-categories: change in tasks, responsibilities, skills, competencies, workload, culture.
Practice	Refers to an impact in following sub-categories: new, changed, and/or automated process and/or process steps, adapted rules.
Integration	Refers to a change in integration between departments/sections, i.e. through integrated processes.
Technology	Refers to an impact in following sub-categories: new tools, hardware, software, etc. (other than Oracle).

LEVEL OF ORGANIZATIONAL IMPACT	DEFINITION
High	<ul style="list-style-type: none"> • Significant number of functions and/or users (more than 250 staff members) will be affected. • Change in individual responsibilities and/or new or different skills. • Change should be supported by training and communication.
Medium	<ul style="list-style-type: none"> • Moderate number of functions and/or users (up to 200 staff members) will be affected. • Changing or additional skills required. • Change should be supported by targeted communication and some training.
Low	<ul style="list-style-type: none"> • Small number of functions and/or users (up to 50 staff members) will be affected. • No new roles or changes to existing roles. • Change can probably be supported by communication alone.



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