Collaborative BPM for Business Transformations in Telecommunications: The Case of "3"

Thomas Karle and Kurt Teichenthaler

Abstract

Many business changes in the telecommunications sector are initiated by mergers and acquisitions, and the fast pace of this sector requires that businesses adjust or extend business processes in a minimum of time. "3," the mobile communication brand of CK Hutchison Holdings, whose headquarters are in Hong Kong, is a leading global mobile telecommunications, data services operator, and pioneer of mobile broad-band technology. Therefore, "3" constantly faces the challenges associated with take-overs and mergers. To master these challenges a comprehensive social BPM environment with predefined process structures was developed to master these challenges within given time restrictions. Corresponding process structures support the merging of telecommunication processes during a merger and can be used for collaborative drafting of business processes across organizations. The key task in these projects is to use the knowledge and experience of all parties involved efficiently and in a short amount of time in order to carry out process consolidations or to build comprehensive processes. Therefore, support for collaborative work was implemented on all project phases, from requirements specifications for designing, implementing, and testing the respective software components to launching the new processes and providing training.

T. Karle (✉)
Horus software GmbH, Ettlingen, Germany
e-mail: thomas.karle@horus.biz

K. Teichenthaler
Hutchison Drei Austria GmbH, Wien, Austria
e-mail: kurt.teichenthaler@drei.com

J. vom Brocke, J. Mendling (eds.), *Business Process Management Cases*,
Management for Professionals, DOI 10.1007/978-3-319-58307-5_13

(a) **Situation faced**: Many business changes in the telecommunications sector are initiated by mergers and acquisitions, and the fast pace of this sector requires that businesses adjust or extend business processes in a minimum of time. "3," the mobile communication brand of CK Hutchison Holdings, whose headquarters are in Hong Kong, is a leading global mobile telecommunications company, data services operator, and pioneer of mobile broadband technology. Therefore, "3" constantly faces the challenges associated with take-overs and mergers.

(b) **Action taken**: A comprehensive social BPM environment with predefined process structures was developed to master these challenges within given time restrictions. Corresponding process structures support the merging of telecommunication processes during a merger and can be used for collaborative drafting of business processes across organizations. The key task in these projects is to use the knowledge and experience of all parties involved efficiently and in a short amount of time in order to carry out process consolidations or to build comprehensive processes. Therefore, support for collaborative work was implemented on all project phases, from requirements specifications for designing, implementing, and testing the respective software components to launching the new processes and providing training.

(c) **Results achieved**: A business process repository with predefined process and function documentation was built, and a collaborative BPM environment, embedded self-service training components, and integrated test management system were established to provide the basis for conducting projects during acquisitions, mergers, and other businesses transformations.

(d) **Lessons learned**: Four lessons learned were identified: (a) Successful implementation of BPM in a company requires combining it with other fields of operation, such as testing and training; (b) interconnecting a variety of model types helps to manage the increasing demands regarding speed of change and complexity of both business and IT; (c) embedding BPM in a collaborative environment also supports active knowledge management; and (d) business transformations require that management provides the necessary strategic control.

1 Introduction

"3" is the mobile communication brand of the Asian corporation CK Hutchison Holdings (CK Hutchison), whose headquarters are in Hong Kong. CK Hutchison is a conglomerate with five core businesses—ports and related services, retail, energy, infrastructure, and telecommunications. In 2015 it had a turnover of 36.8 billion euros and 278,000 employees in more than fifty countries. The company's success is founded on a commitment to innovation and leading-edge mobile technology. Because of the brand's commitment to innovation and leading-edge mobile

technology, mergers and acquisitions have to be managed in as little time as possible. What's more, changes in business processes, which occur regularly in this fast-paced segment, must be implemented both technically and organizationally on short notice. "3" relies on a global single instance (GSI), which is based on a global ERP instance, to implement its processes in the areas of finance and logistics (Karle and Teichenthaler 2015).

To meet the challenges, "3" wanted to build an extended social BPM environment for the GSI. To build such an environment, the company pursued a strategy for enriching the GSI using a BPM repository, collaboration functions, integration of a test management system, and integration of self-service training components.

The GSI's core are the processes and functions implemented with an ERP standard software (Oracle E-Business Suite). In addition, a BPM repository with all the documentation of the processes implemented was created that contains both organizational processes and technical-detailed processes. In building this repository, the company implemented a process hierarchy based on the organization's processes, with the activities and the respective business roles on the upper levels and the technical, detailed processes and concrete user instructions on the lower levels. A collaboration platform was implemented on top of this BPM repository that allows a joint design of GSI processes both organizationally and technically. The foundation for this collaboration was laid by providing a synchronous interface between the BPM repository and a wiki-environment.

In addition, a test management system was integrated technically through a corresponding interface and methodically with an integrated BPM approach. Thus, the detailed processes in the process hierarchy down to the ERP software user instructions are automatically transferred to the test management system and are tested there, partly automatically and partly manually.

The BPM repository also contains self-service training components for the business users. Here, the micro-processes of the system-handling for each possible business transaction were recorded with an appropriate tool. The components can be used in various training modes and are provided in the BPM portal's process model descriptions.

The extended collaborative BPM environment that was realized provides an adequate base for fast analysis, design, and implementation of the requirements during mergers, acquisitions, and other business transformations in a global context. The detailed process documentation supports comparison of processes between two companies. New global requirements can be evaluated quickly based on available process variants for different countries, and rollouts can be done efficiently based on predefined processes, including documentation, test cases, and self-service training components. Collaboration functions and connections between different model types and artefacts help to manage complexity and knowledge.

2 Situation Faced

2.1 Problem

"3" conducts acquisitions and mergers in Europe, requiring numerous adjustments in processes across organizations because of, for example, changes in partners in the supply chain. These adjustments lead to many business transformations that must be managed. When businesses are merged, the challenges can include consolidating divergent business processes and joining implementations that often have different system components. Whenever processes across organizations are changed, they must be managed well, especially concerning procedures related to technical details, system components, required integration, and organizational business processes. The "3" Group Europe pursues the GSI concept, which requires a centralized ERP system with consolidated business processes for every associated operating company (Karle and Teichenthaler 2015). The concept is shown in Fig. 1. This centralized ERP instance, which is physically located in Vienna, Austria, provides common and country-specific ERP processes and functions that the company uses also in other local operating companies in the "3" Group Europe (Ireland, the United Kingdom, and Italy).

The GSI consists of the standard ERP system Oracle E-Business Suite (EBS) and the so-called Belt Systems. Modules for nine areas are used within the scope of the standard ERP system (Karle and Teichenthaler 2015):

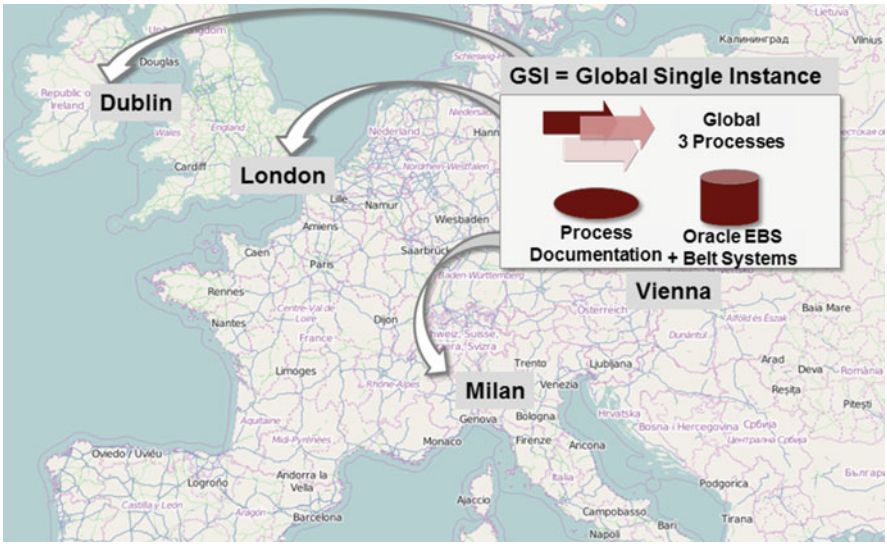

Fig. 1 Global single instance (Karle and Teichenthaler 2015; Map from OpenStreetMap)

- Order management
- Inventory management
- Manufacturing
- Purchasing
- Receivables
- Payables
- Assets
- Cash management
- General ledger

The Belt Systems, custom-developed systems that are integrated into the ERP standard software (Karle and Teichenthaler 2015), are connected via standard interfaces and are also an element of the GSI. Individual components of the Belt Systems are usually developed based on a database and specific development tools. One of the biggest GSI Belt Systems at the moment is the SCM Hub, which covers the specific logistical telecommunication requirements in an individually realized component.

The current solution, based on configurable business software and the global business processes it supports, has reached such a high level of complexity that it is barely manageable.

2.2 Needs

A BPM solution had to be implemented for the GSI that met nine requirements:

- Support the implementation of new or adapted processes and functions of the global ERP instance.
- Provide an extensive documentation of processes, functions, and the corresponding IT implementation.
- Ensure efficient management of mergers and acquisitions—that is, alignment and adjustment of processes and functions.
- Establish an environment for and an approach to a global requirements management system.
- Support execution of rollouts of the centrally administered ERP system.
- Harmonize global business processes and local particularities.
- Provide an integrated test management system; that is, use the defined business processes to create corresponding test cases in a semi-automatic way.
- Establish knowledge management for all parties involved (e.g., business, IT, management).
- Ensure that the approach and environment can manage the complexity of the global ERP instance, including process variants, the IT systems to be integrated, and so on.

After building an adequate BPM environment, the ERP solution of the GSI must be documented with models for the business processes, business objects, and the corresponding GSI solution functions and components (Karle and Teichenthaler 2015). These models should be used for changing and merging businesses. The essential processes had to be predefined for the global solution to be aligned and possibly extended according to new business requirements. Mergers and business process implementations across organizations should be supported based on an extension for collaborative business process management that includes all phases, from requirement analysis to training. The content provided should be used as a knowledge base for the rollout of ERP processes in order to minimize the risks of such extensive ERP projects.

2.3 Objectives

3 Group Europe wanted to build such an environment for the implementation and extension of business processes across organizations within the frame of differently sized ERP projects (Karle and Teichenthaler 2015). During this BPM case, the business processes that had already been implemented in the GSI were initially provided as models in a centralized repository and were subsequently extended and adapted collaboratively by all parties involved. In order to do so, the environment had to support the alignment and definition of country-specific variants for particular operating companies, as well as corporation-wide business processes across organizations, such as corporation reporting.

3 Action Taken

This section describes the decisions made and actions taken to create a social BPM and knowledge management environment for the corporation. Social BPM combines the classic BPM with a collaboration that includes a corresponding integrated environment and a specific approach (Erol et al. 2009; Swenson 2011). The case covers all phases of the typical process lifecycle: identification, discovery, analysis, design, implementation, and monitoring and controlling (Dumas et al. 2013). The corresponding ERP implementation projects were done based on a phased approach, and an agile approach for implementing new projects is in evaluation. There is no focus on a specific area of BPM capabilities; the objective is to build capabilities in strategic alignment, governance, methods, information technology, people, and culture in all areas (Rosemann and vom Brocke 2015).

In a first step, a BPM repository for the GSI processes was created, the BPM environment was extended by means of collaborative functions, and a corresponding approach was established at the company. Based on this approach, the divergent business processes of different business entities were coordinated and the technical integration between relevant system components was aligned. Finally, the

BPM environment was integrated with the test management system to provide a generation of test cases based on the business process models.

3.1 Creation of a Business Process Repository for the GSI

"3" conducts projects for the realization of business processes across organizations on the basis of predefined reference processes that depict the current state of the global solution (Karle and Teichenthaler 2015). The purpose of these reference process models is to describe business processes (e.g., procurement process, order process), business objects (e.g., order, customer, item), functions (e.g., order entry, order approval), and their relationship to each other in order to depict and communicate the possibilities for realizing business processes using already existing GSI system components (Karle and Teichenthaler 2014). The management of the operative business and the further development of such complex solutions is supported by the separation of business process descriptions on several levels, each with a particular amount of detail. The process descriptions are based on the assumption of generally intelligible business processes on the highest abstracted level, which are specified on the lower detailed layers through a realization that is predefined by the GSI solution. In addition, more models that deal with process descriptions are provided that support the implementation of business software like business object structures, organization structures, and work instructions for the system's use in particular business transactions. Furthermore, a link between the business transactions and procedures to respective test cases can be executed automatically. The models and other artifacts in the repository are linked to each other, enabling an extensive view on the business processes. The GSI reference processes are generally structured like the business's core processes—that is, Order2Cash, Procure2Pay, Work Orders and Manage Stock, and so on. Figure 2 shows an overview of the core processes of the applied GSI reference model.

Figure 3 shows the GSI repository's general process structure, including the process hierarchy and the types of process models and levels that are currently being used. The rough, top-level business services and the detailed procedures of the underlying levels are described. Business transactions are depicted by business use cases (BUCs), which describe cases of the daily business from the specific business department's point of view. BUCs are assigned to the individual process steps, so they are depicted in the GSI processes and functions. On the lower function level, the standard functions and detailed procedures of the available GSI are provided, and predefined integration components in the form of main integration processes (MIPs) are documented. A MIP describes the technical process within the integration of involved systems. It is common that user interaction is needed when processes are based on standard ERP functions or special telecommunication-specific extensions of the underlying ERP software. In the GSI repository, this need for interaction is documented using correspondent instructions, also called user instructions. These instructions are micro-procedures that describe the GSI handling. On this level self-service training components are

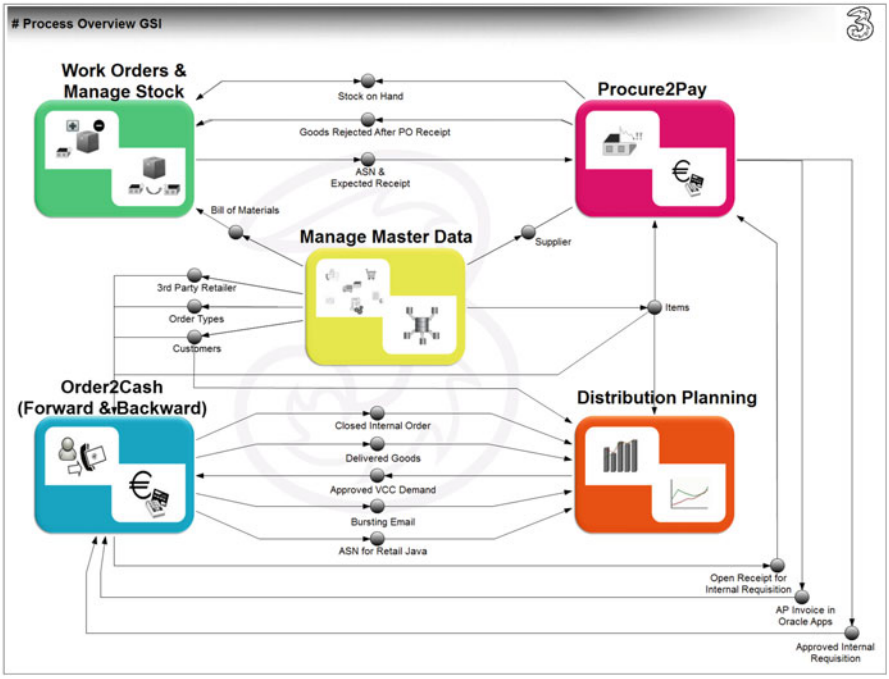

Fig. 2 Core processes of GSI reference model (Karle and Teichenthaler 2014)

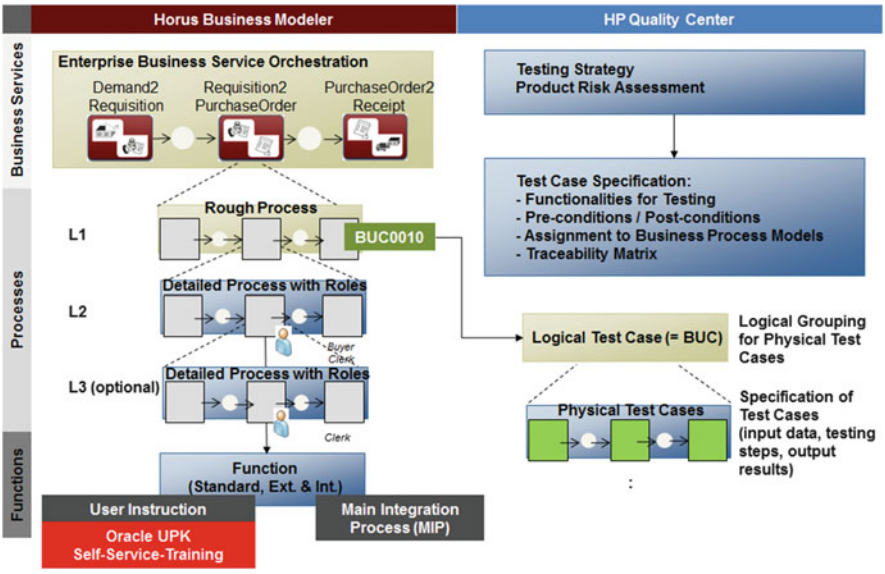

Fig. 3 Core processes of GSI reference model (cf. Herfurth et al. 2008)

also provided that offer exemplary handling records for the particular procedure while also offering the possibility for the user to document and practice interactively. In addition, the link to the test management system is shown, for which BUCs are carried over as logical test cases. They stand for basic, subject-specific groups of individual physical test cases on the test management system's environment side.

The BPM repository for the GSI consists of three main components, as shown in Fig. 3 (Karle and Teichenthaler 2015):

- Horus Business Modeler: Hierarchical business process and business transaction descriptions
- Oracle User Productivity Kit: Additional self-service training components on the functional level of the business process hierarchy
- HP Quality Center: Test cases that are linked to the particular business transactions (BUCs)

3.2 Implementation of a Collaborative BPM Approach

In order to use the knowledge of all parties involved in the projects effectively, the design and the implementation of business processes is supported by an extension of the BPM environment for social media to provide a collaborative environment (cf. Erol et al. 2009). Process experts and IT can simultaneously adapt the models needed for realization of the new business processes in the modeling tool (Karle and Teichenthaler 2014). The key users from the departments use wikis that contain the self-service training components for the business users, made possible by using a wiki environment that is linked to the business process modeling tool with a bidirectional synchronization mechanism. The processes that IT must implement technically are deposited in the IT view and linked to the subject-specific business processes. As a result, all three views of a business process (business, process, and IT) can be created, as shown in Fig. 4.

Figure 5 shows the wiki access for the department in which key users can submit textual changes easily (Karle and Teichenthaler 2014). They can also share comments on necessary diagram modifications that are then handled by business process modelers. Figure 5 also shows the synchronization between subject-specific input from the wiki and the changes in the business process model made by the process modeler. Here, modifications can be aligned and conflicts can be resolved when modifications have been made on both sides.

3.3 Coordination of Business Processes Based on Environment and Approach

The alignment of the future business processes of merged businesses or other business transformations usually starts with mapping the business transactions in

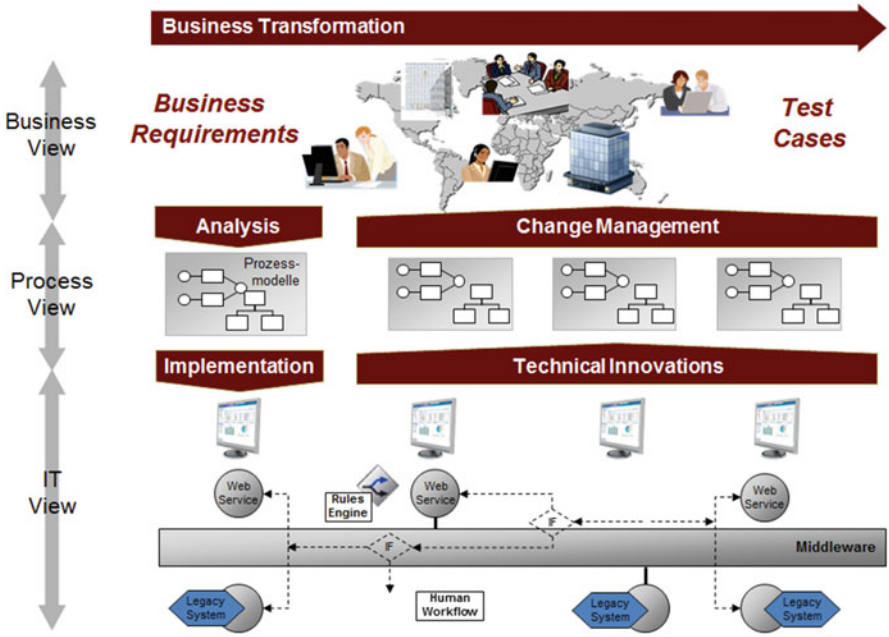

Fig. 4 Views of business processes for adaptation (Schönthaler et al. 2012)

the form of BUCs (Karle and Teichenthaler 2015). Then the essential process level must be discussed and adapted to the appropriate level. First, the GSI must be analyzed based on the predefined procedure, looking for modifications of the global process that need to be made. If there are modifications or extensions identified during the analysis, they are highlighted in the particular process. In this context, some activities in processes are covered by GSI standard functions, and no modifications are needed, while some activities must be modified or existing functions must be extended. Some process steps represent integration steps between systems are additionally, and some are extensions—that is, additional developments that accompany the standard software.

These technical components are part of the parallel processed system architecture, which is described in the same tool with special system architecture models. As a result, the allocation of individual modules of the ERP software or technical components like additional development packages or interfaces is possible. Since the system architecture models are constructed hierarchically, the process models' abstraction levels can be used with the respective levels of the system architecture. Individual extensions and interfaces are provided on the lower levels of the system architecture.

Figure 6 shows an exemplary process for creating new sales orders. Sales orders have to be imported from web shops or distributor systems via interfaces within the scope of predefined business transactions, but it must also be possible for sales orders to be manually created in the ERP system. All recorded and imported

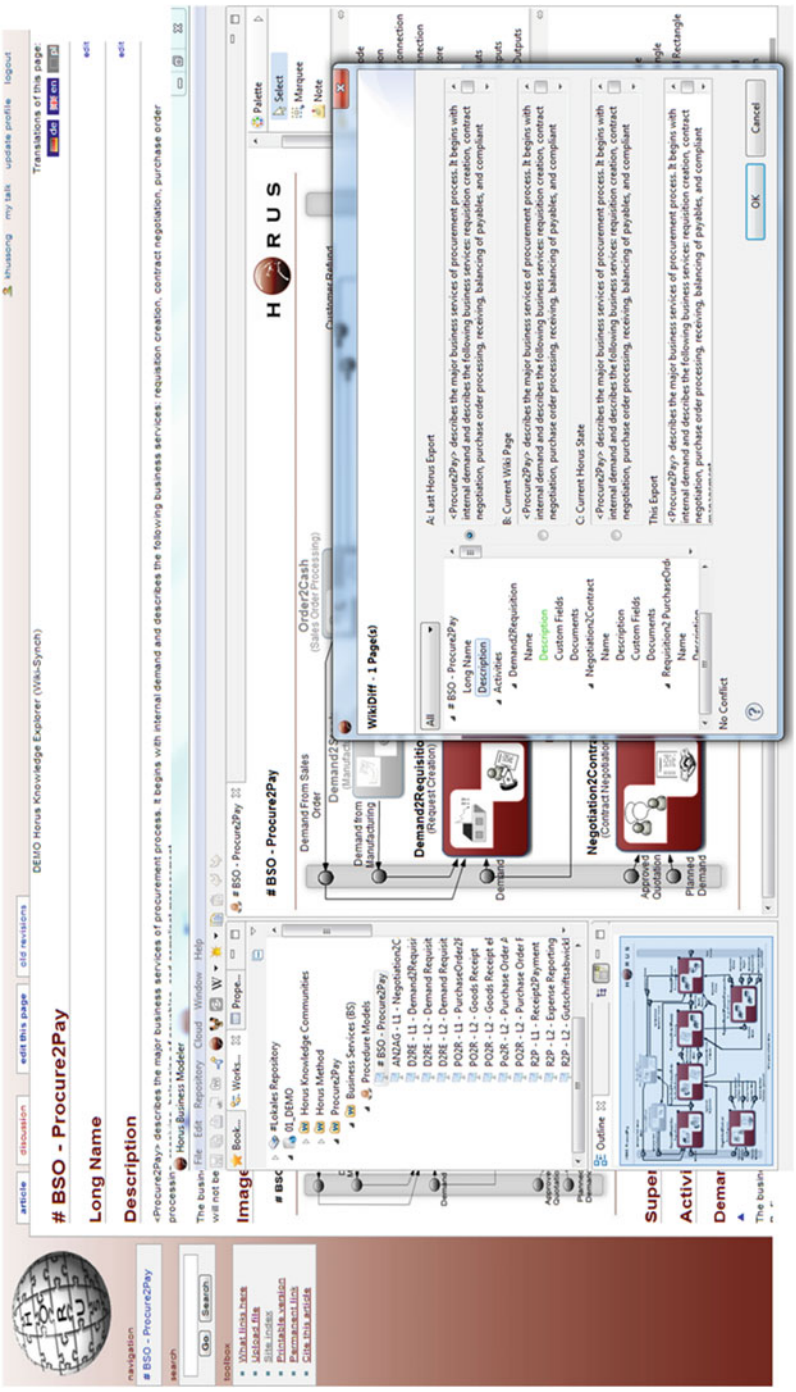

Fig. 5 Wiki for key users and synchronization by process expert (Karle and Teichenthaler 2014)

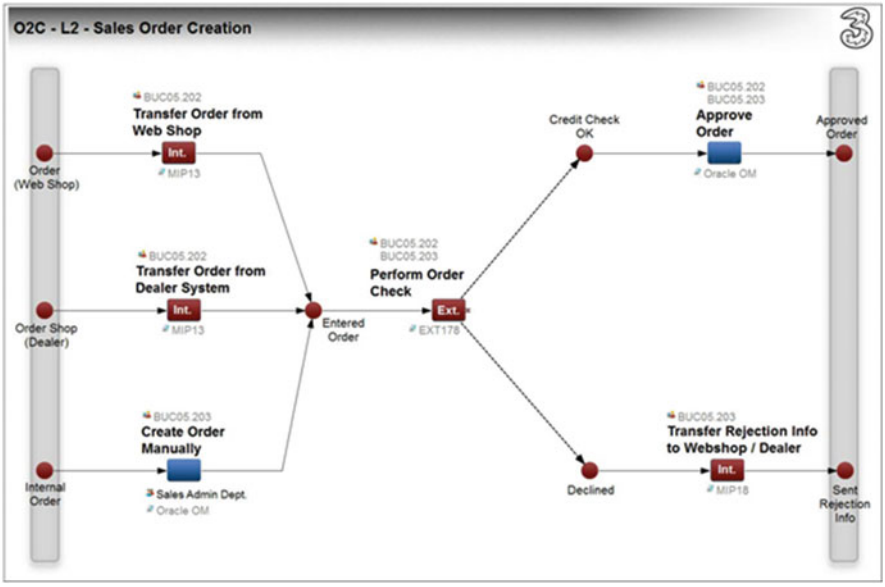

Fig. 6 Definition and alignment of detailed processes (Karle and Teichenthaler 2015)

sales orders must be checked and approved. For each process step, one or several business transactions (e.g., BUCs), the department responsible for the execution of manual tasks, and the necessary system components are assigned to the activities of the detailed processes. Assigned system components can either be MIPs needed for integration or an extensions that have to be developed.

In the example at hand, both the integration and the checking of orders must be changed and extended within the project scope. Such changes often occur in these kinds of projects based on systems to be integrated, or other distribution channels must be taken into consideration. Even the process of checking sales orders often differs from one country to another.

The Oracle User Productivity Kit (UPK) (Oracle User Productivity Kit 2016) records handling by business users, which records can be used to attune business process details. Descriptions of detailed processes on the user instruction level can also support this task. Here, procedures related to handling of individual business transactions are documented in the scope of GSI documentation with UPK. Users can then work with them in several modes, including a mode called "See It," which exemplarily demonstrates a particular business transaction or another mode called "Try It," which enables the user to practice treating the respective business transactions with the implemented GSI solution functions. The special handling knowledge is deposited with the business process models at the appropriate steps and is provided by the wiki environment, creating a coherent model and artifact knowledge base that broadly describes the whole system.

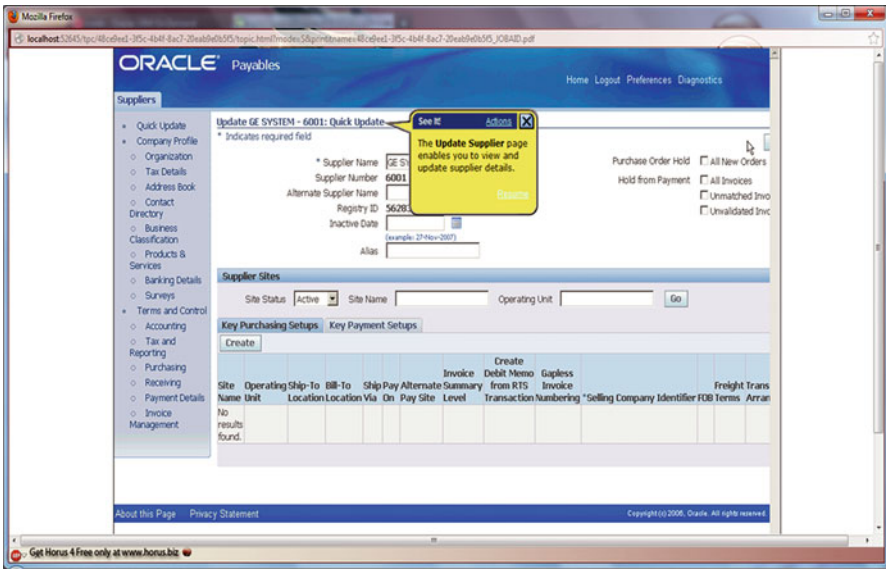

Fig. 7 "See It" mode for self-service training (Oracle User Productivity Kit 2016)

Figure 7 shows the "See It" mode for handling the ERP software. Here, the user is shown step by step how to create a supplier for the Procure2Pay process in the system (Karle and Teichenthaler 2015). The user is guided through the system and gets handling tips every step of the way. These tips, short texts that are shown in the corresponding forms, explain how the particular fields or other system controls should be handled. The systems' micro-procedures, which match the detailed procedures on the level of the business process hierarchy function, are executed in the "See It" mode based on example data. Analogously, the user can practice a procedure in the "Try It" mode, where the user's entries are validated according to the rules that have been set.

3.4 Alignment of the Technical Integration

Communication among all included parties' IT experts on a technical level is needed to align the technical integration (Karle and Teichenthaler 2015), so technical detailed procedures and data structures from the previously covered process level must be clarified for every step. Figure 8 shows the technical procedure for transferring and importing sales orders in a particular MIP. The starting point for the technical process is the ERP standard software, after which it is controlled by the middleware Qorus. PL/SQL programs are called up and executed depending on the process. The data is automatically transferred through preparation steps, loaded into staging tables, and then imported by the order management module via the order interface. Many of these technical integration processes must be checked and extended by IT experts in the scope of mergers of businesses or ERP rollouts, but it

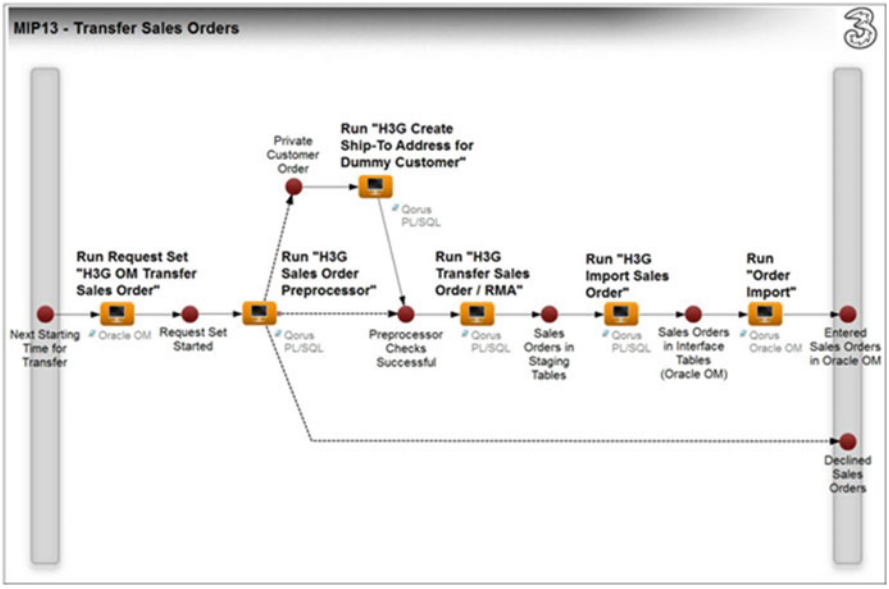

Fig. 8 Definition and alignment of technical integration (Karle and Teichenthaler 2015)

is often sufficient to adapt the individual components in terms of the particularities of the data structures that need to be handled. The according data structures are also a part of the BPM documentation of the GSI.

3.5 Integration of BPM and Test Management

The test management system was integrated into the BPM repository to realize adapted business processes and their IT-technical implementation by implementing an interface that delivers each detailed step of the micro-processes such that all possible runs of the ERP system's handling on the lower level of the process hierarchy are forwarded to the test management system (Karle and Teichenthaler 2015).

When respective tagging of possible runs in the micro-processes are created, all known outcome possibilities are marked within the process model. The allocation of the BUCs on higher levels allows for an automated inquiry of all underlying process models down to detailed levels. Consequently, all defined possibilities of micro-processes for a BUC can be established and delivered to the test management system as single steps, as shown in Fig. 9. This requirement is essential for further preparation of the test cases because of the test cases' structuring in the test management system. Here, each physical test case is summarized into a container, where one logical container exactly corresponds to one BUC and holds all physical test cases that are necessary for the functional test of the BUC. The single test execution is maintained in the test management system, while some tests are also automated in the test management system. If required they can be executed by the system itself.

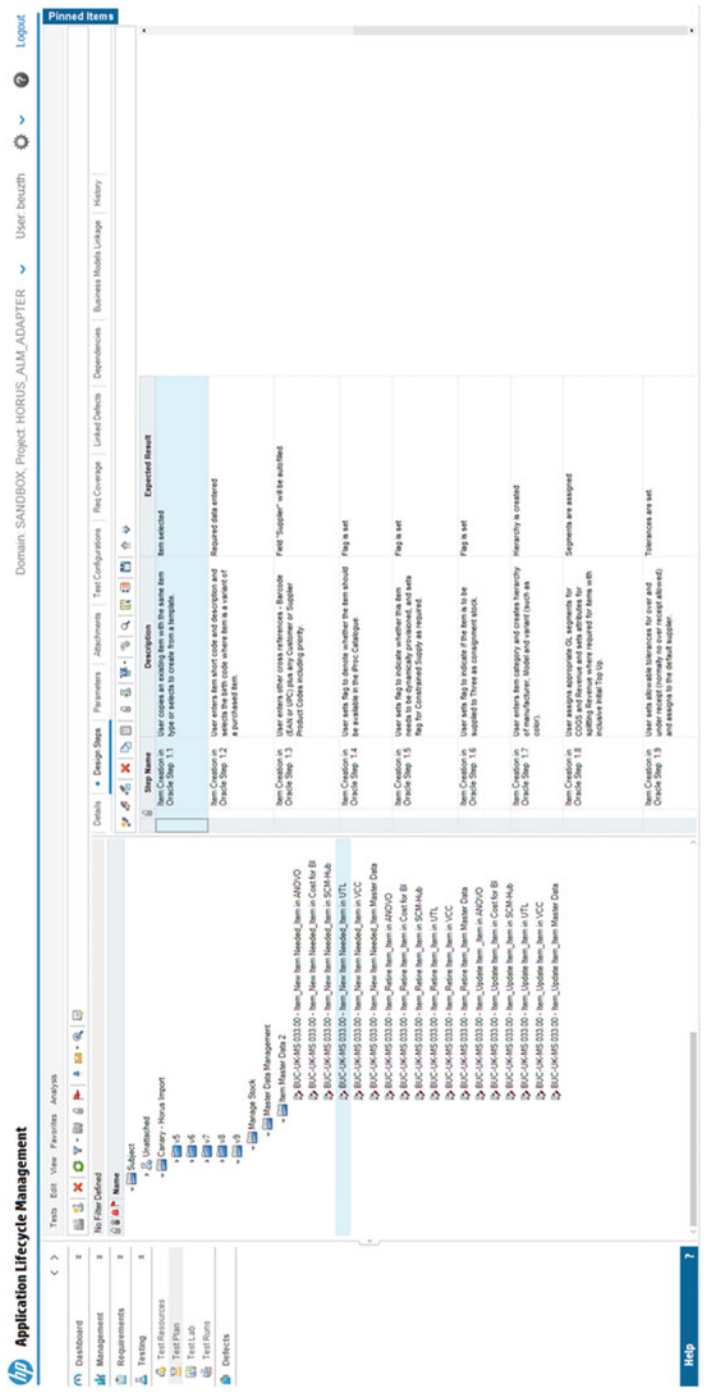

Fig. 9 Generated and transferred test cases (HP Quality Center 2016)

4 Results Achieved

Based on the realized BPM environment and the developed approach, many positive effects resulted from the actions taken.

4.1 Deliverables

4.1.1 Collaborative Global BPM Environment

In addition to the implementation of logistics and finance processes on a global instance, the main result is documentation of the entire global business process for the corporation on three levels: business services, rough business processes, and detailed business processes with assigned roles and system components. This documentation considers common processes and local, country-specific process variants. The corresponding technical processes are also documented in detail.

A collaborative environment supporting communication and cooperative work on business processes was also established. The new possibilities of collaboration based on social media were used for efficient access to experience-based knowledge, creative solution management, and implementations of best practices. Social BPM was realized by combining the procedures and technologies of social media with BPM methods.

4.1.2 Establishment of a Social BPM Approach for Projects

A corresponding approach for the projects was established based on the social BPM environment. Socialization in the projects starts with business requirements engineering, where the business members of involved companies and organizations are granted access to the social BPM environment for the purpose of modeling, analysis, design, and evaluation of the business processes to be discussed. In the social network, the requirements of the involved parties can be exchanged and BUCs, process models, and other artifacts can be defined for a common solution. An important improvement is the ability to collaborate to produce designs that are to be implemented based on previously defined requirements, such as the design of process consolidations and cross-organizational processes. The implemented environment supports this collaborative design by connecting the experts from different organizations and domains (business and IT). The processes are monitored after they are implemented, for which the functional key figures and the execution of the technical process instances and the social BPM environment are used. A general benefit of the combined use of social media and BPM was that the employees at CK Hutchison had fun at work and the motivation of the team that was working on a common solution increased.

A specific approach to managing mergers and acquisitions was created, starting with the existing GSI reference models in the BPM repository to compare processes between companies and to identify required adaptions. The alignment and design of consolidated processes are based on this documentation.

The BPM environment and the approach are also used for a global requirements management. New requirements from a country can be evaluated in terms of potential benefits for other companies operating in the corporation and in terms of these requirements' dependencies with particular implementations for other countries, based on implemented and documented process variants.

The use of social BPM also enables a much more effective alternative of global coordination and collaboration compared to the doing so through many face-to-face-meetings. On the basis of a repository that contains the respective GSI reference models, the reconciliation is accomplished in a social network using functionalities like context-related chat, forums, wikis, and collaborative modeling in combination with BPM in an integrated environment.

4.1.3 Active Knowledge Management

Another important result was creation of a knowledge net based on types of models that are connected with each other (e.g., process models, object models, organization models, system architecture models). This net provides information about the dependencies of business processes and their technical realization. The net helps to identify efforts and license costs for changes or rollouts to the corporation's other operating companies and, since it is provided in the collaboration functions of the social BPM environment, all involved parties (e.g., business, IT, management) can use it. In combination with the collaboration functions, the knowledge net supports active knowledge management.

4.1.4 Support of Process-Based Testing

The predefined test cases linked with the corresponding process models support a fast rollout of business processes in newly acquired operating companies. Test cases for new business processes can be created semi-automatically out of the process models based on the process descriptions on the detailed levels (e.g., user instructions and technical process executions). To create the tests, the business analyst who is responsible for implementing a set of requirements defines possible testing paths and outputs with the testing team, tags these paths in the process models, and transfers them to the test management system as physical test cases. An interface between the BPM system and the test management system generates the individual steps of the test, each of which contains the required information, such as the description of the activity, the system component used, and the expected output. The relationship between process models and test cases is also used during the test execution to clarify the testers' current test task by showing it in context of the process. A recording of an automatic test execution is done in the test management system for some of the test cases, as changes in these processes cause the test cases to be adapted and recorded for automatic execution. This recording can be identified by the links between process models and corresponding test cases. The self-service training components integrated into the BPM environment's process documentation support the objective of efficient rollouts. Involvement in the test management and in the training provide "living" process models that are permanently in use.

4.1.5 Management of Increased Complexity

The combination of predefined GSI reference process models and social BPM has proved to be helpful in managing the existing complexity. The predefined processes, functions, business objects, and system components define a basis on which the communication regarding cross-company processes between parties involved (e.g., in supply chains) can be coordinated. When a merger or an acquisition of companies occurs in this sector, using the described approach to identify and consolidate differences and similarities provides a substantial advantage. The key to managing the complexity is the associations built between the different types of models and between models and other artifacts, such as test cases and self-service training components. These associations provide transparency about the as-is state, allow navigation through the knowledge net, and help to identify deltas to estimate the effort required for changes and to support design, implementation, documentation, education, and testing.

4.2 Business Outcomes

The collaborative BPM environment and the established approach provide fast implementations of ERP projects; for example, a rollout of the finance modules was accomplished in 3 months. Regarding the collaborative work based on this social BPM approach, there is currently almost no staff turnover among the people working in this area.

5 Lessons Learned

This section describes the four lessons learned from the HK Hutchison case.

5.1 BPM Must Be Combined with Other Fields

BPM must be combined with other fields of activity to provide "living" process models. Considered only by themselves, process models are often created and used only in certain phases of projects, such as analysis and design, and tucked away after the projects are finished, never to be used again. If the process models are connected with related areas like test management or training, they become "living" process models. "3" has a large software-testing team, and connecting the BPM environment with the test management system improves the collaborative work between the business analysts and the testing team. A second field of activity that is combined with BPM at "3" is education. In addition to documentation, the self-service training components were integrated in the process portal of the BPM environment to make the training units available in the process context. That is, employees to be trained navigate in the process models to get to self-service training components for the ERP software in order to use training modes like

"See It" and "Try It." This combination helps employees become permanently aware of the processes and improves their understanding of their processes' dependencies on other departments involved in the entire business process.

5.2 Complexity Management Requires Linking Artifacts

Management of complexity in global environments can be managed only by linking model types with each other or with other artifacts. Separate models offer only limited help in managing complex systems for global processes and their implementation. The associations between model types are necessary to provide the required information in the corresponding business transformations. The affected processes should be directly visible or retrievable in the BPM environment, as one must determine which system components are used in the processes in order to identify the consequences of a change and know which process variants are implemented in the corporation for different countries. If business objects need to be extended, the dependencies to the assigned processes that use these objects should be retrievable. All process activities of a specific role of the organization model have to be identified for staff analysis and changes. Furthermore, associations with more strategic model types, such as objective models, strategy models, SWOT models, and key performance models, help to define the right priorities during a project. Business processes can be discussed in a more concrete way by also going through predefined test cases or showing the integrated use of the system by integrated training components.

5.3 Social BPM Increases the Effectiveness of International Work

Social BPM helps to connect people in an international environment to enable effective collaborative work. The combined use of a BPM environment and social media provides a framework for working together efficiently in a global context. People are accustomed to acting in social communities in their private lives, so building a community for specific BPM cases via social BPM is more cost-efficient than face-to-face-meetings in an international project. Social BPM also helps to limit work to specific artifacts instead of sending one e-mail after another.

5.4 Business Transformations Require the Involvement of Management

Embedding the steering of business transformations into the corporation's mechanisms for governance, risk, and compliance (GRC) is an important success factor. Business transformations are strategic projects, and they need the awareness and support of top management. Such projects can change the corporation's business model (cf. Schönthaler 2014) and can affect the business architecture by affecting the products, services, and corresponding business processes such that the software,

hardware, and other technical infrastructure have to be changed. Many decisions must be made, and the best way to make them efficiently is to include the business transformations in the corporation's GRC mechanism. The governance aspect provides the corporation objectives, strategies, and the global corporate culture, while the compliance aspect deals with rules, laws, norms, and standards, and the risk aspect covers the corporation's risk management. Business transformations must have support, and they have the best chance to be successful when they are included in this corporate management mechanism.

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Thomas Karle studied Computer Science at the University Karlsruhe (TH)—nowadays called Karlsruhe Institute of Technology (KIT)—and earned his doctorate at the Institute for Applied Informatics and Formal Description Methods. As a Senior Consultant and Project Manager he has been working in the area of web portals, integration workflow solutions and implementation of ERP systems since 1990. In 2000 he was appointed into the Management Board of the PROMATIS Group and is currently responsible for the division Enterprise Architecture, dealing with business process oriented implementations of complex solutions containing standard business software and customized components. He is advising customers on the subjects of strategy and business process management. Since 2013 he is COO and Executive Consultant of Horus software GmbH, the product company of the PROMATIS Group, providing a method and according software tools for holistic business modeling and for the execution of business transformations featuring Social BPM mechanisms.

Kurt Teichenthaler has been working within various IT Management positions for more than 20 years. Since 2013 he is the Senior Head of IT at Hutchison Drei Austria GmbH. Over the past 5 years Kurt consolidated the IT stack in course of M&A projects. He also integrated various companies on a single ERP Instance and owns the ERP development and operations for them. Within this transformation programs he introduced centralized documentation of implemented business processes to support test automation and high quality deliveries. Further on he supported stakeholders in order to successfully automate and manage their process landscape.