

ERNI Experience reports on management, processes and technology

Experience



NO.62
SEPTEMBER 2014

INNOVATION IN PROCESS AND TECHNOLOGY

Integrating innovation into the company's DNA

MANAGING SPEED

Higher speed toward more market opportunities

REDUCING COMPLEXITY

«Reduce to the max»

UNDERSTANDING AND MOTIVATING PEOPLE

People at the heart of software development

FROM A VISION TO BEST PRACTICE



In October, ERNI celebrates its 20th anniversary; two decades at the service of «Swiss Engineering», helping our customers to achieve lasting success. The significance of software engineering as a key driver for digital transformation and continuous innovation has increased steadily over these twenty years. As an independent international consulting firm, ERNI focuses on the software disciplines of requirements management, software development, testing, project management and process improvement, and has continued to develop these disciplines, supplement them with new methods and incorporate additional services into the portfolio.

Now more than ever, the success of the company is coupled with strength in innovation and a command of speed and complexity. As ever, people are still at the heart of this success: people make progress possible and benefit from it.

The first article therefore focuses on innovation in process and technology: not only must innovation be generated constantly, but it must also consistently flow back into the company so that new ideas can build on what already exists. We will demonstrate what is needed to achieve this.

Whoever is quicker than the competition in getting an innovation to the market will be successful. In the second article you will find out how to master speed and turn your development partners into allies in the race against time.

Many creative ideas fail at the implementation stage due to a high level of complexity. In our third article, you can read how to break a project down into «digestible» sub-steps and achieve your objectives as desired.

Finally, we will once again put the spotlight on people and examine the question of what really matters when it comes to software development and the successful development of your company, as well as ours.

I hope you enjoy reading this issue and celebrate 20 years of ERNI with us!

Best wishes,
Dominik Bischof

DOMINIK BISCHOF:
dominik.bischof@erni.ch
Business Area Manager at ERNI Switzerland

Advisory Activity: Project Management, Change
Management and Workshop Moderation



INNOVATION IN PROCESS AND TECHNOLOGY

INTEGRATING INNOVATION INTO THE COMPANY'S DNA

If a company wants to develop, it must ensure that every single employee is developing as well.

BY PATRICK KUPFERSCHMID AND ROBIN ZIEGLER

4



MANAGING SPEED

HIGHER SPEED TOWARD MORE MARKET OPPORTUNITIES

The more is invested in project setup at a conceptual level, the greater the speed of its implementation.

BY IVETA ŠIŠKOVÁ AND MARCO DIETRICH

10



REDUCING COMPLEXITY

«REDUCE TO THE MAX»

Complex problems often entail complicated technical solutions. If the complexity of the problem is reduced, its solution is also simplified.

BY VLASTIMIL KUDRNAC AND SEVERIN DIETSCHI

16



UNDERSTANDING AND MOTIVATING PEOPLE

PEOPLE AT THE HEART OF SOFTWARE DEVELOPMENT

Software is not an end in itself. Wherever it is used, it always serves to simplify the work of and between people.

BY SASCHA MEYER AND MICHAEL MARTY

22



Now you can also read all of our articles online!
We will gladly answer your open questions sent to: info@erni.ch

INTEGRATING INNOVATION INTO THE COMPANY'S DNA

If a company wants to develop, it must ensure that every single employee is developing as well.

Innovation is frequently brought about by pushing existing knowledge in a new direction or developing a new application for existing tools. In the best case, the experience gained from the practical test flows back into the company. However, the right methodology is required for this.

BY PATRICK KUPFERSCHMID
AND ROBIN ZIEGLER

The CFO asks the CEO: «What happens if we invest in developing our people and then they leave us?» The CEO replies: «What happens if we don't, and they stay?» This witticism illustrates the dilemma that companies find themselves faced with. Innovation comes from people. People want to evolve, progress, experience and try out new things. Training and further training cost money. However, if employees do not gain further qualifications and literally remain at a standstill, this costs more – potentially even the survival of the company. The solution sounds rather simple: invest in employees AND make sure that they stay.

If employees remain at the company with their experience and know-how, valuable knowledge is preserved. And if employees are encouraged to pursue personal development, it is not only the individuals who make progress, but also the company as a whole. What's more, an employee who is trusted and simultaneously given responsibility is more motivated at work because he can bring his own development objectives into line with those of the company.

A company must also seek to ensure that knowledge and experience from daily work can flow back into the productive process.

There is rarely a lack of innovative technology and expertise to manage this. Particularly in software development, innovation

cycles are becoming increasingly short in terms of launching new tools, versions or systems. In addition, the proportion of software in product development is also increasing. Companies that only look at capacities and prices in this field are relinquishing a highly effective lever: namely, the conceptual superstructure. Conceptual consultancy cannot be provided at the level of software development, i.e. the implementation, but rather only by its architects, who, as requirements engineers or project owners, draft the «blueprints» for the software. However, it is precisely at the point of interface between the idea and practical implementation, between knowing and doing, that the friction that leads to findings, and thus to new experiences, arises. Frequently, smaller companies have neither established processes nor methodologies that enable the gaps between the generation of best practices and their return to the organisation to be closed. Larger companies often see themselves confronted with the fact that, although processes have been defined, the situationally correct methods and tools for this continuous improvement process are lacking. In both cases, external consultancy can help extract the ingredients for future innovation from the interaction between processes, technologies and individuals, and make them available. In this respect, innovation management is equivalent to the interface between the processes and technology of haute cuisine: knowledge of the ingredients and preparation methods pertain to the craft of a chef. Creating something original out of a familiar menu, using the right seasonings and variation,



«Innovation is not measured in terms of technical feasibility, rather by whether the new requirement of a user can be met.»

«An innovation process depends on people controlling it and filling it with content and life in an active feedback culture.»

is the real art. These innovations are subsequently recorded in a «cookbook», ensuring that the acquisition of knowledge is secure.

In an ideal scenario, the consulting firm itself will set up an internal improvement process, enabling the customer to benefit from constant further development on the basis of practical experience. Better still, is when the improvement and innovation process of the organisation is linked with the individual employee development programmes. In this way it can be ensured that the development of personnel and the company keep in step with one another and that innovative services are provided for everybody on the basis of the insights of individuals.

Example 1 INNOVATION IS A CONTINUOUS IMPROVEMENT PROCESS

A consultancy service provider strives to extract best practice from a project in order to then be able to make it usable for other customer projects. The service provider is aware that his consultancy and services must be tailored to each customer. Nevertheless, the proverbial wheel does not need to be reinvented in every project. Innovation often arises from reapplying something that has already been tried and tested or systematically implementing findings that have been drawn from previous projects. To this end, the consultancy company has set

up a multi-step process that methodically controls the return of best practices into the organisation: a project management office is responsible for making sure that the findings from the numerous individual projects are combined and made available to all employees. For this purpose, a reporting concept, which systematically gathers practical experience, sample solutions that can be reused elsewhere, suggestions for improvement and corrective measures from all participants in the project, has been developed. In the project activity report (*PAR*), the individual employee reports, for example, on his role, the methods and tools used in the project, and on what he would like to pass on to the organisation as knowledge gained from the specific application. In the assignment status report (*ASR*), the project lead reflects on his project and indicates what works well and where there is potential for improvement. In the project review report (*PRR*), the project status is described by a third party who is also involved in the implementation of the stated improvement measures. The post-project report (*PPR*) extracts and documents findings from each project.

The project management office aggregates all the findings from these sources of information and submits suggestions for innovation to the management in a management summary report. These flow back into the education and training of employees via the campus. The same objective is also served by topic-specific workshops and a quarterly forum. At the

same time, the reports are saved in the internal Wiki, which acts as a platform for the exchange of opinions, comments and suggestions. Here, individual communities are formed that further develop tried-and-tested procedures in practice and theory (see fig. 1).

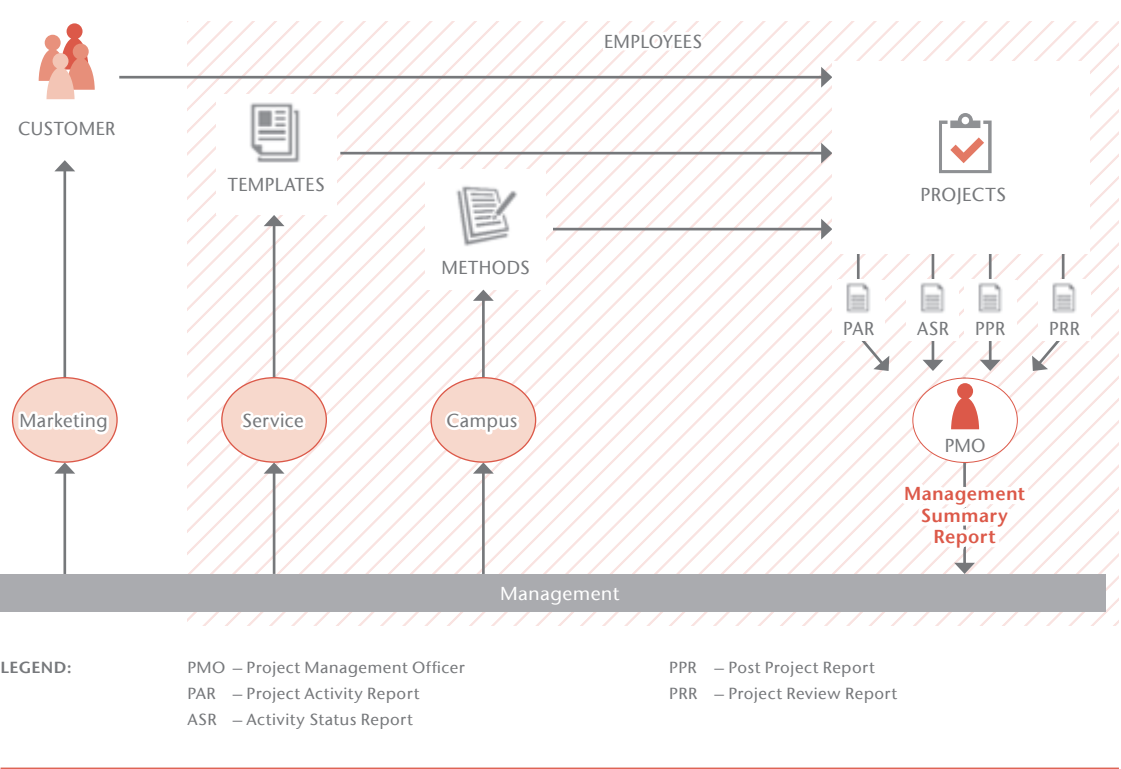
By means of repeated application in customer projects, the processes, methodologies and tools are refined and ultimately moulded into a new standard. To achieve this, the project management office, together with the service (*the respective department that is responsible for developing new services*), specify which of these findings are to be adopted in new service items or service patterns. A service item (*a method, service, tool or product*) in turn has an «owner», who manages this element and is responsible for it. A service pattern (*a larger unit such as a setup, framework or modular tool kit*) is evaluated and documented by a panel of experts, who then makes it available to employees in the knowledge database for further application. Additionally, visualisation and simulation methods help to illustrate findings and maintain their presence at the workplace in the form of posters. All methods and processes must also have been tested in several customer projects in various sectors and organisational units before they are standardised and generalised as a service.

Example 2 PROMOTE AND CHALLENGE

In consultancy firms, employees are constantly encouraged to participate in the improvement process. Furthermore, personal development within the framework of the internal development program is

an integral part of annual target agreements. The individual levels of hierarchy in professional careers systematically build on one another; careers with progression in a line or specialist field are possible. Employees are not only promoted in their development process, but are also challenged. Specifically, the submission of a master-work is required for a promotion from senior to principal. This is not intended as a professional paper, rather it is purposeful: the work to be submitted must have a demonstrably practical use for the consultancy firm and, above all, for its customers. The master-work usually results in a new service item or even a service pattern, which can be used by a customer to solve a problem. The consultancy firm's focus on customer-orientation, methodological expertise and innovation management at the interface between processes and technologies provides a wide range of possible topics. Particular attention is often paid to requirements engineering and requirements management. After all, software can only fulfil its intended purpose if the requirements on which it is based are formulated correctly. A «fitness check» method is already in existence for revealing gaps in the area of requirements engineering at the customer's premises. In a «master-work» on this topic, the existing idea of the fitness check is adopted and transferred to the area of «user-centred requirements engineering». Nor is user-centred requirements engineering something new. There are already standard methods that can be used to classify future users, their objectives and requirements, model the application context and increase understanding between developers and potential users. If we consider how important the software is to the user – who is he, what objectives is he pursuing, in what context is he working, how does he

FIG. 1: THE PROJECT OFFICE CONSOLIDATES THE FINDINGS FROM THE PAR, ASR, PRR AND PRR AND DERIVES MEASURES AS SUGGESTIONS TO SUBMIT TO ERNI MANAGEMENT



work, what does he need? – then it is nearly incomprehensible how often a purely technical approach (*e.g. based on use cases or activity diagrams in UML that are abstract for users*) neglects the user requirements that are truly relevant to the project. In order to arrive at functioning software that meets the requirements, it is necessary to consistently place the focus on the user and find the right methods to consistently and appropriately communicate with him beyond the technical implementation. However, for this it is important to know how user-friendly a development project is in the first place and how satisfied the users are with the system that they are working with.

In the master-work, tools are developed that can be used to measure the range of different types of requirements involved in user-centred requirements engineering, the quality and quantity of engineering methods and the usability of the existing system on the basis of industry standards in different dimensions. These inquiries provide concrete values as a degree of fulfilment (%), an index that can be used to empirically demonstrate to the customer where gaps exist, and, subsequently, how to fill them.

The master-work undergoes a structured process in the consultancy firm: it is presented internally in both the specialist and service department, critically scrutinised, validated and made suitable for a product in a feedback cycle. In a subsequent step, it is documented in the Wiki service, where new inputs and other contributions from a wide range of people, which further develop the method, are entered. The new method of the «user-centred requirements engineering» index is subjected to a practical test on-site at the customer's location;

in the project activity report, the application of the method is evaluated, findings are extracted, and this external feedback is returned to the consultancy firm. A cycle is completed. Practical relevance, methodological expertise, the will to advance yourself, the customer and your own company: all this creates approved, systematic and sustainable innovation on a step-by-step basis.

ERNI – Innovation in Process and Technology



PATRICK KUPFERSCHMID
patrick.kupferschmid@erni.ch
Advisory Activity: Requirements Engineering/
Management, ERNI Project Management
Office Leader



ROBIN ZIEGLER
robin.ziegler@erni.ch
Advisory Activity: Requirements Engineer,
Usability Engineer, team member of the ERNI
Requirements Engineering Service

DISCOVER
ERNI Experience Digital



Now you can also read
our magazine online!

HIGHER SPEED TOWARD MORE MARKET OPPORTUNITIES

The more is invested in project setup at a conceptual level, the greater the speed of its implementation.

Time pressure is not a good advisor. Nevertheless, deadlines must be met. But not at all costs. After all, if collaboration with a technology partner is planned correctly, cost-effective solutions can be found that simultaneously serve to accelerate the implementation process.

BY IVETA ŠÍŠKOVÁ
AND MARCO DIETRICH

There is nothing more costly than a delayed software development project. Market opportunities are missed, costs are accrued and the opportunity costs will also make themselves felt. For example, if a product is set to be launched at a renowned trade show and is not ready on time, the trade show presence becomes expensive and is wasted, furthermore, the opportunity is possibly lost for a whole year. But even if this worst-case scenario is excluded, time and speed are key drivers in everyday business life. Every company is a supplier in some form and must meet its customer's deadlines. Every company wants reach the market more quickly than the competition and every company wants to increase its productivity by producing more per time unit and with higher quality.

A further issue when it comes to the subject of speed is the fact that the half-life periods, in which knowledge ages, are constantly shortening: know-how that is accumulated in a particular sector or domain is only worth half as much after 8-10 years. Processes lose efficiency even more quickly and quickest of all is the downward spiral for technologies, for which half of all accumulated knowledge becomes irrelevant approximately every 18 months. The more familiar a technology partner is with these mechanisms, the sooner he will consider time a planable variable.

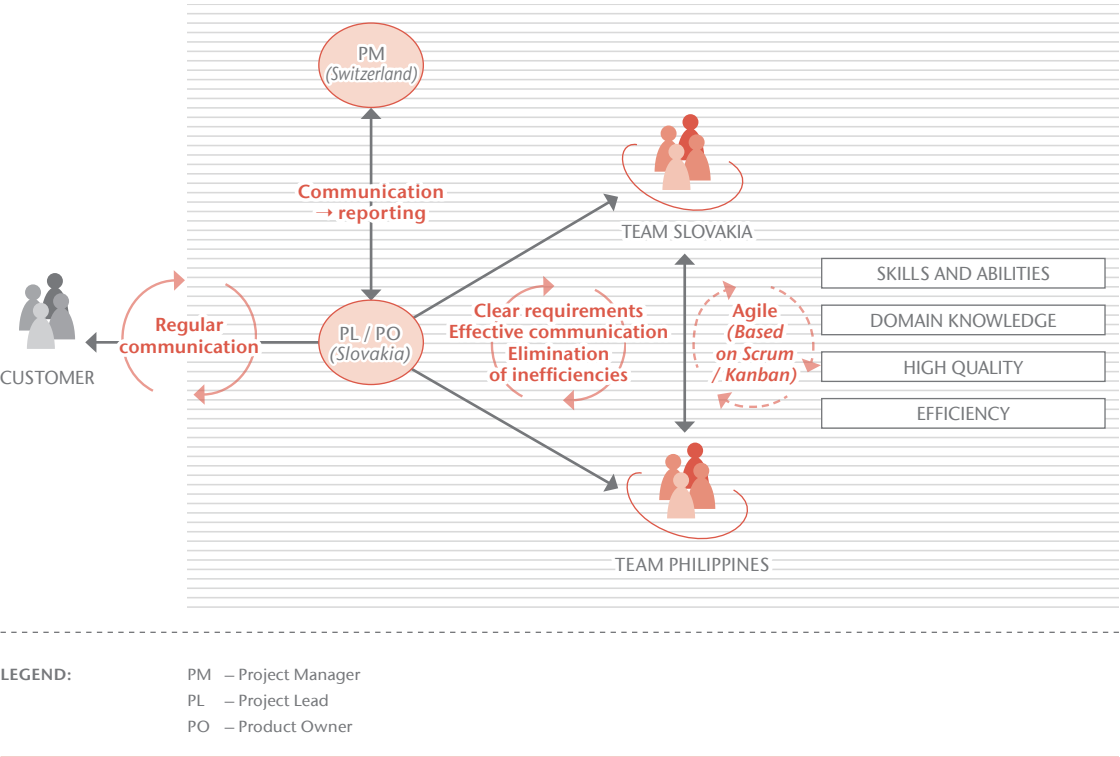
Although domain knowledge generally has a relatively long shelf life, different sectors and segments change at different rates depending on the proportion of technologies involved in the handling of processes. In many service and industrial sectors, traditional production and sales channels are being replaced by new channels; the trend of integrating online platforms or social media platforms into the business strategy is bringing about changed framework conditions, increased dynamics and, depending on the competitive environment, genuine paradigm shifts in established sectors. For example, purely online banks are attacking traditional branches, cars are being designed via the social media community, and apps are revolutionising the taxi business.

The interesting thing is that, of course, technology is the enabler for such digital platforms, but underlying them are completely new business models that are born-digital per se. If we follow this philosophy, companies can be divided into two categories. Firstly, firms whose DNA is digital. These companies have been programmed from birth to respond quickly and flexibly in adapting to changing customer requirements. The second category contains historically rooted companies that want to jump on the online and social media bandwagon, and gradually open themselves up to the associated challenges. For the technology partner, this means adapting to the customer's tempo as well as is possible. Depending on the customer, a cooperation model



«The «tortoise and the hare» in software development – thanks to a methodical technology partnership, a smart approach is more productive than simply being fast.»

FIG. 2: MANAGING SPEED BY MEANS OF A CASCADED SERVICE CENTRE



will have to be drawn up, combining methodology in the setup with speed in the implementation. If the customer is under time pressure, he will often want to rush through the details as quickly as possible. However, it is worthwhile to consistently plan the collaboration methodically, even from a time-saving point of view, and ask oneself key questions: how much complexity does the project contain and how can the level of complexity possibly be reduced? What tasks require the immediate proximity

of experts on-site? How soon will additional capacities become available? What must they be capable of? In which phase of the project are which resources needed? What work can potentially be standardised so that the corresponding processes can be sped up?

Generally, if the complexity of the task is high, the closest possible cooperation with the customer is required. Above all, this applies to the requirements management at the start of a project. On the

other hand, if rapid scaling is required for pre-defined and well-structured work, it must be possible to mobilise flexible employees. These employees do not need to have direct contact with the customer, but they must be in a position to be productive as quickly as possible. Additionally, the more routine a task is, the more automated the deployment of its handling process can be, thus increasing the speed. If resources are allocated correctly, tasks of differing complexity can be worked on simultaneously and valuable time can be saved.

Cascaded cooperation models are well-suited for this purpose. Proximity to the customer in order to ensure innovative strength can be perfectly balanced with specific requirements in terms of speed, complexity, costs and scalability. The involvement of service centres with different technical specialisations and geographical distribution can be a key success factor for speed management. In particular, if all requirements are clearly defined and a rapid market launch for a product is required, the transition from a nearshore service centre to an offshore service centre can be a very sensible move. From the specifications to the implementation and maintenance, the links in the value chain can exploit their respective strengths in line with the product development cycle: the higher added value related to innovation remains with the customer. With each step away from the customer, the cost curve decreases while the rate of standardisation, and thus the speed, increases. The customer also benefits from the fact that he can concentrate on his domain expertise and free up his own resources for new developments in this area.

Example
**REDUCING TIME TO MARKET
 BY MEANS OF A CASCADED
 SERVICE CENTRE**

A service provider in the pharmaceutical industry wants to forge stronger links with his customers by means of a mobile application. The specifications are ambitious, as software that is intended to achieve an unrivalled position in a fiercely contended competitive environment, and thus a larger market share, is concerned.

The app should be launched as quickly as possible on the most widely used operating system, whereupon versions for other common platforms should follow just as quickly. When the customer is very agile; the technology partner can adapt by also following an agile methodology, although this is streamlined in the process and optimised for the customer requirement. On the one hand, the manner and frequency of communication between the customer and the project lead is determined by the fact that the technology partner possesses a standardised process for the development of mobile applications. At the same time, the collaboration is organised around the SCRUM model, which is reduced to the basic modules so that the scope remain unchanged during the fortnightly sprints, and both planning and review meetings are maintained while daily meetings are limited.

During requirements engineering, the project lead must maintain direct customer contact and be able to access local consultants and contact persons. Once the requirements have been specified, it proves advantageous if the project



«If the setup is well prepared and the technology partner is able to scale his resources in a sensible way, and in accordance with the requirements of the product development process, high speeds can be guaranteed during the implementation.»

lead draws closer to the developers. The latter work in a service centre in Central Europe. The German-speaking project lead can focus on managing the team and reporting the progress made to the customer. For the customer, it is a great deal more important to keep the tempo high during the implementation phase than to know that his dedicated contact person is within reach. Given this background, the technology partner decides to relocate testing to his service centre outside of Europe. In addition to flexible resource scaling and cost effects, this has additional benefits in that development at the European development centre takes place during the day and the time difference can be used for testing (*overnight from this point of view*). Accordingly, the deliverables are already available the following morning when the software developers resume their work.

In this way the project for the first operating system platform can be concluded rapidly and the tempo maintained for the next version: the functionalities are the same, all required documents and process steps are documented – the adaptation to the new platform is essentially a reflection and an adaption to different user interfaces. For this reason, a software engineering team in the immediate vicinity of the test team is entrusted with the task. Testers and developers can exchange details directly with one another; the test team is already familiar with the first version of the application and can reproduce its knowledge. The customer not only saves money, but also time. The technology partner also opts for the same approach when the operating system is updated to a newer release: the application can be updated,

maintained and serviced economically and quickly at the most distant link in the service cascade, while the project team is already contemplating the next new modules together with the customer at the latter's location.

DISCOVER
ERNI Experience Digital



Now you can also read
our magazine online!

ERNI – Innovation in Process and Technology



IVETA ŠIŠKOVÁ
iveta.siskova@erni.sk
Advisory Activity: Project Management
and PMO



MARCO DIETRICH
marco.dietrich@erni.ch
Advisory Activity: Requirements
Engineering, Project Management and
Head of Service Center ERNI Slovakia

«REDUCE TO THE MAX»

Complex problems often entail complicated technical solutions. If the complexity of the problem is reduced, its solution is also simplified.

It is said that less is more. However, reductions are only possible when the essential has been separated from the non-essential. An external view can illustrate interrelationships that have been missed internally. Implementation on the process and technology level does not follow until the second step, i.e. when the requirements are clear down to the last detail, irrespective of the existing system.

BY VLASTIMIL KUDRNAC
AND SEVERIN DIETSCHI

Complexity inevitably arises within a company over the years: teams are reassembled according to the task, often geographically dispersed as a result of globalisation and assigned different competencies and responsibilities in matrix organisations. Processes are established in the course of collaboration and the handling of transactions, and over time are scrutinised with ever-diminishing frequency. IT systems and application landscapes grow historically and inevitably become more complex with every new functionality. An increasing number of interfaces are arising in heterogeneous architectures so that individual components can be brought together again at the process level. Meanwhile, many companies are grappling with the problem of sprawling in-house legacy systems, which are all too often insufficiently documented, outdated or unable to cope with forthcoming challenges. Even when the trend is towards standardisation, many individual systems form the infrastructural core with a multitude of dependences around them, which are not easy to dissolve and remove. This leaves management and technology consultants confronted with the transformation of entire companies, all the way down to the smallest organisational unit: there is rarely a single comprehensive solution that integrates all the requirements and makes any additional application superfluous. Usually, new functions bind to existing functions one

by one, and a patchwork of mini applications for highly specific tasks spreads out in the business units. It is to the great displeasure of IT departments, which bear the responsibility for the maintenance and support of these fragmented infrastructure landscapes and yet often find themselves subject to reproach, that their programs still lag behind the wishes of the users.

With the increasing digitalisation of all processes and the now habitual use of smartphones and tablets in everyday life, the demand for user-friendliness is also growing as every employee is expected to quickly be able to operate the systems intuitively without much training in order to increase efficiency in everyday business life. The expectation to get what is needed to accelerate the process routine at the touch of a button goes hand in hand with a lower threshold if requirements are not implemented 1:1 or do not function as desired. The in-house IT department is however often not completely without blame. Too often the specialist departments hear the following remarks when formulating their requirements: it's not possible, the system can't do that, it's too expensive, it's too complicated!

In the dilemma between technical feasibility and process-based implementation it is usually no longer possible to see the proverbial wood for the trees within the company. An additional factor is that many bad experiences have been had when outsourcing a contract for the



«Reducing complexity means asking the right questions, parting with old baggage and focusing on the relevant requirements.»



development of individual applications for additional requests: a tool or snippets of code come back that then have to be integrated into the landscape – instead of a simple solution, you are faced with a new problem.

Nevertheless, there are many options for simplifying a problem if it is divided into manageable sub-problems. The most important thing is the right methodology. However, methodology does not mean opening a tool box and getting out the appropriate tool set. Above all, methodology means approaching something with a highly specific attitude. In principle, one can assume that the customer, the company, understands his business and is perfectly well-informed about the subject. The right solution, innovation, is often already in the heads of people, simply the connections are unclear and the know-how needed to extract this knowledge and

apply it is lacking. An external technology consultant can perform two functions in a situation such as this: firstly, record, structure, understand and visualise the complex issues. And secondly, embed the structured sub-issues into a big picture again so that the connections can be scrutinised and the derived requirements can be validated on a system.

In the process, it is advantageous if the technology consultant can draw on both best practice from his own industry as well as wide-ranging experience with comparable problems. Whereas the customer is often concerned with one-off stumbling blocks, the technology consultant is faced with the constant updating of practice-related expertise.

The actual procedure could, for example, take the following form: the internal IT department finds itself confronted with

a stack of requirements and needs help to implement them. A technology consultant who not only wants to sell his programming work, will also seek dialogue with the specialist department and also make inquiries into the requirements there. Often, this is the point where a disastrous inconsistency arises: the requirements recorded by the IT department only correspond in part to the needs formulated by the specialists. The technology consultant would do well not only to gather the requirements, but also to show a willingness to understand why particular requests are made. And this is where the next discrepancy appears: frequently, the technology consultant senses quite quickly that the requirements have already been adapted to the existing systems. With such pre-conditioned requirements, the focus is on individual features that would be desired from a new or additional tool, and the work process to be simplified is itself no longer described. At this point, the technology consultant is required to find out what the specialist departments want, irrespective of the platform, and how the business process could possibly also be completely redesigned if the restrictions of the existing system are disregarded. By no means is it a question of ignoring or working around these systems! Rather, it is a matter of realising that the correct solution is often not even of a technical nature. A technical solution is always found, but the technology consultant must make sure that it is the correct one. An everyday example may illustrate this: in terms of its technical parameters, a Ferrari is far superior to a lorry. However, for moving house a lorry is preferable to the Ferrari. The issue of finding the right solution is therefore also a question of the specific business benefit.

With systems in which requirements are stacked on top of one another like a patchwork for years, the question «But why is the process like this?» can quickly become uncomfortable if the answer is «Because we have always done it that way.» A technology consultant who not only brings methodological expertise but also domain competence, possesses the expertise to talk with both the IT and specialist department on an equal footing, and has the neutrality required as an external expert, as well as the implementation competence if, as a dot on the i, the IT solution that is ultimately developed makes the work process simpler and, therefore, more efficient.

Example

BREAKING ESTABLISHED PATTERNS OF THINKING

A financial services provider is in search of a new technology for dispatching form letters with a multitude of variables. The requirements of the document templates and text blocks must be described so that the IT department can draw up the rules accordingly. The project proves to be very complex, specifically, this is firstly due to the sheer number of standard texts, rules and matrices and, secondly, because the IT and specialist departments are unable to reach a common understanding of the task. An initial project with a database solution is a failure. The causes for this lie, among other things, in the fact that patterns of thinking and rules from the old system have become fixed in people's heads and have been transferred to the new tool. There is too much focus on the familiar routine and too little on the business benefit. After years of using



«The greater the variety of stakeholders involved in a project, the more complex it becomes. However, with the right methods and constant monitoring of the process, an understanding of diverging expectations can be achieved, and the essential requirements can be revealed step by step.»

«The opposite of complexity is simplicity.»

the old system, the idea of what it can and cannot do has solidified far too much. With his domain expertise, the requested technology consultant quickly notices in this initial situation that the solution does not lie in a new platform, but rather in an understanding of the fundamental interrelationships regarding how the processes are handled and what is to be brought about by this. The consultant quickly finds himself in the role of a business analyst who records the desires and requirements of the specialist department, from which he abstracts the effects on the processes and the structure of the tool to be created together with the future users. Filtering options, rules and criteria are defined in joint workshops, which allows the quantity of material to be structured, the process to be made visible and interrelationships in their execution to be presented. A visualisation of a multi-dimensional matrix of text blocks regarding the type, addressee, content, language, underlying rules and variables that must be incorporated from other systems over various interfaces comes into being. The significant added value lies not only in the fact that, with the help of the consultant, the requirements have been fulfilled so that the IT and specialist departments understand one another, but also that a tool is available that can be used to configure a desired document template step by step. In this way, the duration of the engineering and documentation of requirements can be reduced from several months to just a few days. The result

is a reduction in document types, clear user guidance in a simplified process and a specification that initiates the next process step.

ERNI – Innovation in Process and Technology



VLASTIMIL KUDRNAC
vlastimil.kudrnac@erni.ch
Advisory Activity: Project Management,
Requirements Engineering



SEVERIN DIETSCHI
severin.dietschi@erni.ch
Advisory Activity: Business Analyst

ENTDECKEN SIE
ERNI Experience Digital



Now you can also read
our magazine online!

PEOPLE AT THE HEART OF SOFTWARE DEVELOPMENT

Software is not an end in itself. Wherever it is used, it always serves to simplify the work of and between people.

If every individual in the team takes on responsibility, motivation increases, the area of responsibility widens, and the work becomes more interesting. The customer benefits from this if he is fully included in this participatory cooperation model and can have confidence in the fact that the consultant is investing in his employees and ensuring the transfer of know-how.

BY SASCHA MEYER
AND MICHAEL MARTY

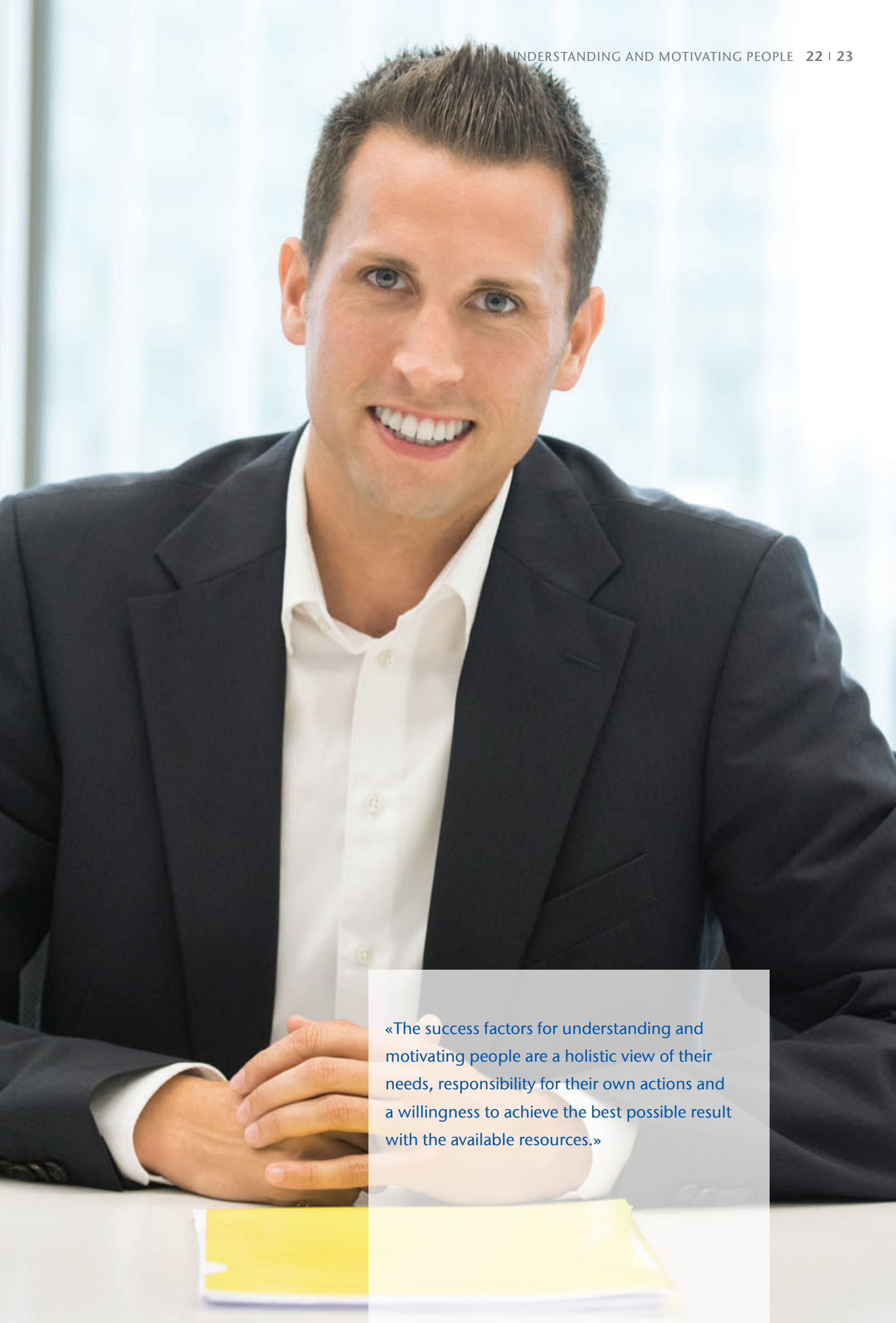
Innovation takes place where technology and processes intersect with people. However, its commercial success is influenced by the human factor to a far greater degree than by technology. When individuals work in groups, a common goal creates the type of solidarity that is generally associated with team spirit. It is no coincidence that almost all possible types of events that focus on cultural training – from joint raft building to luxury cruises – are booming in connection with management and leadership training, with the intention of facilitating strong team bonds. However, team building is not a one-off event, rather it is a process. It begins with the recruitment of employees – do they fit into the group in terms of their qualifications and, more importantly, their personalities? – and continues during their further training and accompanies them throughout all their interactions within their organisation as well as that of the customer.

Only people who are prepared to keep an open mind, listen, put themselves in the shoes of another person and are willing to push themselves and the customer forwards are able to make a career within a technology consulting company. The development curve in this space can be described with confidence as the «refinement» of software engineers. With time, the right education, further training methodology and increasing practical experience, a technical specialist with

specific expertise can become an advisor with wide-ranging knowledge who supports and coaches his customers in both the conception and implementation phases.

The top priority is to «pick up» the customer at whichever stage of the problem-solving process he is at, enable him to recognise problems as such and to provide him with decision-making aids when one option or another has to be chosen on the path to the correct solution. A consultant can never «impose» a solution on his customer that the customer does not want. To be able to assess the willingness and maturity of a customer and his organisation, does not, in the first instance, require technical know-how but rather good instincts, the appropriate knowledge of methods, as well as the will to understand and foster understanding. A service provider with this self-image will make sure that he is recognised by his customer as a partner on an equal footing, as an extension of the customer.

The consultant starts this process within himself: an internal continuous improvement process ensures that the correct lessons can be drawn from daily business practice and implemented. A corporate culture that aims to push employees forwards in their personal development and advance the organisation as a whole, creates confident individuals who base their commitment on a common interest. Both in internal communication as well as in education and



«The success factors for understanding and motivating people are a holistic view of their needs, responsibility for their own actions and a willingness to achieve the best possible result with the available resources.»



further training, emphasis is placed not on degrading employees to «recipients of commands», but rather to appeal to their inherent sense of responsibility and place trust in them. This also includes internal knowledge management and knowledge transfer: do the employees have insight into the overarching connections, do they understand the value of their own contributions and are they more motivated to increase this value? With this holistic view, an employee is not merely «performing his task», but is also considering what his work is triggering in the long term. From this intrinsic perspective, the consultant will, in each project, first ask himself the question: how can I provide added value for my customer without causing them additional expense?

For example, if involving external consultants and implementers results in geographically dispersed teams, the service provider will first and foremost consider what effects this will have on communication, infrastructure and processes, as well as how he can set up collaboration so that the customer does not have to completely reorganise his processes from one day to the next. The ultimate aim of the project is working software or a functioning application; process optimisations are a welcome additional benefit in this context – no more but no less.

If the customer desires additional resources for specific activities, he must be able to assume that they not only will bring with them the appropriate



specialist know-how, but also that they have been instructed in depth beforehand on the status and objective of the project. If the consultant can ensure this, then he is in a position to offer the customer flexibly scalable resources around a core team. In this way, peaks in the workload can be absorbed without requiring specialists to be permanently integrated into the team.

So-called «self-managed teams» have proven useful for such tasks: in this case, tasks are no longer assigned to a specific person, but rather to a team. In this approach, the team must bear joint responsibility and ensure sufficient design leeway in order to provide an optimum result from the point of view of the customer.

Example

FLEXIBLY SCALING A CORE TEAM

A large company from the insurance industry is faced with the challenge of developing applications on an ongoing basis and having to expand them constantly. Meanwhile, the company is driven by natural fluctuations in the course of business, which influences the release cycles over the business year.

Depending on the point in the release cycle, the customer requires differing qualifications, such as requirements engineers, developers or testers. Furthermore, the customer's domain is complex, meaning that this industry knowledge must be acquired or shared in addition to software engineering expertise. The technology

«A customer will not let himself be squeezed into a mould; his needs are always individual. He will only be satisfied by a tailored service, for which the best selection is made from the multitude of available methods.»

partner analyses these circumstances and agrees on an innovative scaling model together with the company, in which a core team ensures that the know-how is obtained and flexibly increased by additional resources in terms of number and skills – depending on how many and what type of specialists are required for the process.

Since the customer has already gained experience with geographically dispersed teams in the area of testing, part of the development process will also be relocated to the service provider's European service centre. From practical experience, the technology consultant is aware that the form of organisation and collaboration in dispersed teams requires the processes and methods to be adjusted: communication becomes less direct and must be managed in a more targeted manner, the infrastructure must be designed according to this new type of interaction and the predictability of the team's workload must be readjusted. In a first step, the consultancy firm does its «homework»: for communication within the team and with the customer, additional feedback rounds are established in the process and quality checks are set up in the requirements engineering process. If work is outsourced to the service centre an «implementation readiness check» is performed, which makes sure that there is a common understanding of the task. In

order to obtain know-how, targeted measures are initiated, such as an «onboarding» programme, which enables specialists to be ready for action quickly and not to lose the acquired knowledge outside of their deployment. The successful onboarding concept is introduced both in the consultant's service centre and on-site at the customer's location; by means of target-oriented sessions, the people involved are provided with the necessary skills so that they can be productive as quickly as possible.

For the technology consultant it is important that the impulses for process optimisations emanate from his own organisation, although the customer retains the decision-making power. At the same time, he ensures that the employees in the individual service centres do not passively let the scaling «wash over them», but rather see themselves as an active and integrated element of the team. To this end, a type of «onboarding light» is introduced, which facilitates the return of team members after a break in their workload. To achieve this it is important to close the gaps in knowledge that have arisen since the employee's last deployment and, depending on the employee's profile of strengths and weaknesses, to find tasks in which he can demonstrate his potential «on the job» as quickly as possible and contribute to the positive overall result.





«The first step a good consultant will take is to optimise his own service before he commits the customer.»

Meanwhile, the project is so successful that the technology consultant scales up rather than down and confidence in him to supervise further applications is maintained. This is notable, particularly because he has proven that he has good control of the framework for the flexible scaling of resources and, furthermore, can also prove process maturity in the transfer of knowledge. The customer in turn has the satisfying certainty that he can determine the volume and quality of the resources at any time and that his interests will be understood. This is because at the right moment, he will be empowered with the proper decision-making aids necessary to take the next step towards the correct solution.

DISCOVER

ERNI Experience Digital



Now you can also read
our magazine online!

ERNI – Innovation in Process and Technology



SASCHA MEYER
sascha.meyer@erni.ch
Advisory Activity: Project Management,
Software Engineering, Requirements
Engineering and Test Management



MICHAEL MARTY
michael.marty@erni.ch
Advisory Activity: Software Engineering,
Requirements Engineering

ERNI

enables & delivers

<http://erni-consultants.com/digital-publication/en>

LEGAL NOTICE

Publisher

ERNI Consulting AG,
Baar · Bern · Lausanne · Zurich

ERNI Consulting España S.L.U., Barcelona

ERNI (Deutschland) GmbH,
Frankfurt · Munich

ERNI Development Center Philippines Inc., Manila

ERNI Singapore Pte Ltd., Singapore

ERNI (Slovakia) s.r.o., Bratislava

Editor

James Shepperd, ERNI (Slovakia) s.r.o.

Tel. +421 2 3255 37 43

leserservice@erni.ch

<http://erni-consultants.com/digital-publication/en>

Layout

Diana Cencer Garafová

Production

von Ah Druck AG, Sarnen

Circulation

4000 copies in German, 1000 copies in English

Published quarterly

ISSN 2235-7262

Copyright © 2014

by ERNI Consulting AG

All rights reserved.

ERNI
enables & delivers

www.erni-consultants.com