Forschungsinstitut für Rationalisierung e.V. an der RWTH Aachen

UdZ 3/2007

Unternehmen der Zukunft

FIR-Zeitschrift für Betriebsorganisation und Unternehmensentwicklung

Schwerpunkt:

Informationsmanagement

Foto: © 2007 RACC, España

www.fir.rwth-aachen.de

ISSN 1439-2585

Tool-East: „Open Source Enterprise Resource Planning and Order Management System for Eastern European Tool and Die Making Workshops“

Role of regional information and communication technology SMEs as an open source collaboration platform provider for Eastern European Tool-and-Die making sector

Project info
Tool-East

Project-/ Reasearch-Promotor
European Commission – IST

Fördernummer
27802

Laufzeit
01.01.2006 – 31.12.2007

Projektpartner
FIR, Jozef Stefan Institut, Quintelligence d.o.o., Toolmakers cluster of Slovenia Zavod C-TCS Celje, PAK Processa automatizacia a.s. Kosice, Kuhn Technology Ltd., Herti Ltd., ZMM Metalik Jsc, IT Partners Ltd., Slovenian Tool and Die Development Centre, Mayking Spa., EMO ORODJARNA proizvodna druzba d.o.o., VALJI d.o.o. Štore, University of Bremen, authorized Institute: Bremen Institute of Insiel Spa, Open Strategies Inc. USA

Kontakt
Ali Imtiaz MBA, MSc

Web
www.tooleast.org

Information Society Technologies

Over the past couple of decades the ICT industry has gone through many of structural changes. from centralized huge enterprises to very diverse, small and specialized ICT SMEs (small and medium enterprises). These ICT SMEs vary a great deal in their roles; from providing basic IT support services to individual companies to more consultant and business solution networks. These ICTs are small to micro in size and can not cover all the needs without collaborating with other SMEs with complementing competencies. Such collaboration could range from development of technical manuals to combined development of modules for customized client applications. These ICT SMEs have clients that are also very specialized and are lean in organizational structure with very limited in house facilities as IT departments. Further, modern services require ICT (information and communication technology) partnering to offer sophisticated customized outputs that provide high value to the users. This aspect has to be catered to by an effective business approaches.

Case study: Eastern European Tool and Die making SMEs

Having a closer look at the Middle and Eastern European T&D making companies are mostly dispersed into isolated workshops (SMEs) with almost no organised collaborative structure. Further, some larger units have deployed off-the-shelf IT solutions thinking that these solutions might help them in operational processes, without realising that these products are much more complicated to implement and lack the flexibility to be customised according to their specific needs.

To resolve this dilemma, FIR along with T&D making SMEs and IT partners joined hands to look close into the core business operations of the Eastern European T&D making industry. An overall objective is to develop a system for internal optimisation as well as inter-collaboration among this industry. In other words, the aim is to develop and implement an ideal solution fitting dynamic nature of this industry.

Approach: Business process reference model for the Tool and Die Making Industry

The achieved aim was to develop a business process model highlighting the core business processes for workshops (SMEs) within T&D making industry. As a general framework, Porter's value chain model was used to distinguish between core/primary and supporting/secondary processes. The approach was to apply these methodologies to fragment and filter the business processes to develop a 'reference business process model' by analysing existing process chain of the respective industrial SMEs. Therefore for every workshop all individual process had to been documented and structured separately, leading to detailed „process landscapes“. Based on these process landscapes the core processes have been individually analysed in detail. The result of these detailed analyses of each of the participating T&D making SMEs led to the process models or flowcharts. These flowcharts are based on internal documents of the operation-flows of the company, like job characteristics, quality management descriptions e.g. After the generation of the business process models, the consolidated results have been represented in a 'reference business process model'. This model is the aggregation and abstraction of the company's individual models. Therefore 'reference business process model' can be regarded as a concept that can be used across the board for the T&D making branches.

Findings and Results: Networked ICT as solution for Eastern Europe T&D making industry

During the first year of the project Tool-East, it is realized that the ICT partners play key roles through development and then supporting the application for manufacturing industry. This stands true for the world around T&D making industry and therefore has a multitude of facets that are interesting for the Tool-East consortium. The figure 1 shows an overview emphasizing on a vast number of diverse stakeholders involved in the support respectively. This scenario developed in the project is derived through in-depth analyses of possible modeling methodologies in the respective ICT and Tool making industry and then justifying its feasibility for Tool-East partners.

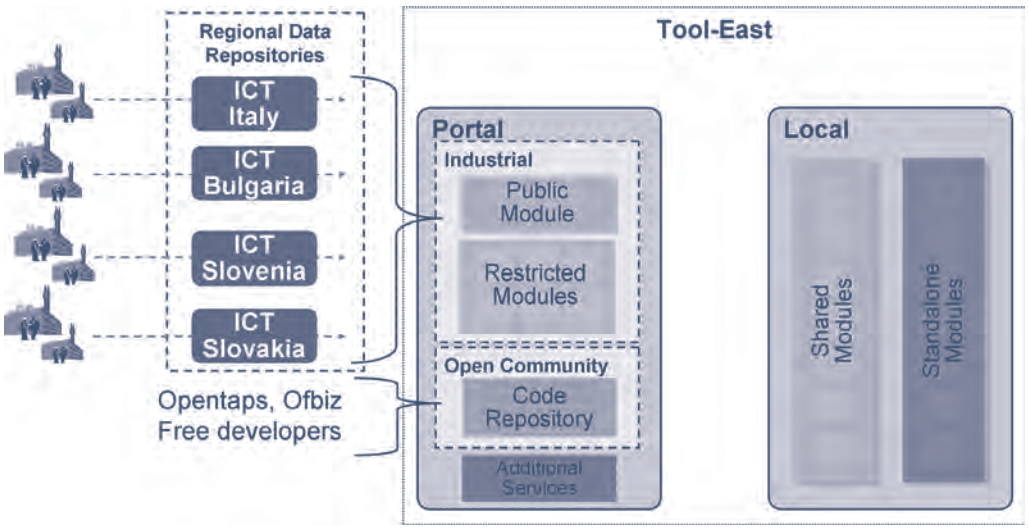

Figure 1: multi-tiered integrated information management solution

In the figure 1 it is highlighted that ICTs play different roles in the form of Regional ICTs having direct clients as T&D makers, Portal providers and Open source project coordinator/community providing second level support and application development. At the very end the scenario presented in this artical is a complete guideline for the respective roles/ actors to take-up and customize it according to their regions and business requirements. At this point the project presents a marketable scenario which is kept flexible for the partners to further customize for their respective business surroundings. This deliverable will be used for the bases of the exploitation activities in the next period of the project Tool-East.

Conclusion

A basic advantage of business networks for individual Eastern European industries is to achieve the power of large-scale enterprises, which leads to benefits in all business processes (economies of scale). The new adapted and modified processes will support the efficient coordination of intra-enterprise order processing and strengthens competition and competitiveness of Eastern European SMEs. Further, the benefits would include higher flexibility of product and selection of development and managerial software solutions.

Further steps in this ongoing project include the customisability of IT solutions and this is kept as a major focus through open source and web services initiatives. This will provide the T&D making SMEs with the flexibility to further develop and integrate their core process flows in the respective solution and also to coordinate joint product development with other SMEs in the industry.

Acknowledgement:

This work has been partly funded by the European Commission through IST Project *Tool-East* (No. IST-FP6-027802). The authors wish to acknowledge the Commission for their support. We also wish to acknowledge our gratitude and appreciation to all the Tool-East project partners for their contribution during the development of various ideas and concepts presented in this paper.

Ali Imtiaz MBA, MSc
Project Manager
Research Institute for Operations Management
at Aachen University of Technology
Pontdriesch 14/16, D - 52062 Aachen
Tel.: +49 241 47705-511
Fax: +49 241 47705-199
E-Mail: info@tooleast.org
www.tooleast.org

Impressum

UdZ – Unternehmen der Zukunft
FIR-Zeitschrift für Betriebsorganisation
und Unternehmensentwicklung
8. Jg., Heft 3/2007, ISSN 1439-2585
„UdZ – Unternehmen der Zukunft" informiert mit Unterstützung des Landes Nordrhein-Westfalen vierteljährlich über die wissenschaftlichen Aktivitäten des FIR

Herausgeber
Forschungsinstitut für Rationalisierung e.V.
an der RWTH Aachen
Pontdriesch 14/16, D-52062 Aachen
Tel.: +49 241 47705-0
Fax: +49 241 47705-199
E-Mail: info@fir.rwth-aachen.de
Web: www.fir.rwth-aachen.de
Bankverbindung: Sparkasse Aachen
BLZ 390 500 00, Konto-Nr. 000 300 1500

Direktor
Univ.-Prof. Dr.-Ing. Dipl.-Wirt. Ing. Günther Schuh

Geschäftsführer
Dr.-Ing. Volker Stich

Bereichsleiter
Dipl.-Ing. Gerhard Gudergan (Dienstleistungsmanagement)
Dipl.-Ing. Dipl.-Wirt. Ing. Peter Laing (Informationsmanagement)
Dipl.-Ing. Carsten Schmidt (Produktionsmanagement)

Redaktion, Satz, Layout und Database Publishing
Olaf Konstantin Krueger, M.A. (Informationsmanagement)
Tel.: +49 241 47705-150
E-Mail: OlafKonstantin.Krueger@fir.rwth-aachen.de,
redaktion-udz@fir.rwth-aachen.de
School of Communication, Information and New Media
University of South Australia, Adelaide SA 5001 Australia
Ph.: +61 8 8302 4656, E-mail: office@m-publishing.com

Design und Bildbearbeitung, Satz und Layout
Birgit Kreitz, FIR, Tel.: +49 241 47705-153

Bildnachweis
Soweit nicht anders angegeben, FIR-Archiv

Anzeigenpreisliste
Es gilt Tarif Nr. 4 vom 01.02.2007

Druck
Kuper-Druck GmbH
Eduard-Mörike-Straße 36, D-52249 Eschweiler

Weitere Literatur im Web
www.fir.rwth-aachen.de/service