

Introduction

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Welcome to the Workflow Handbook 2002. This Handbook offers you four sections:

- **SECTION 1: The World of Workflow** covers a wide spectrum of viewpoints and discussions by experts in their respective fields. Papers range from an Introduction to Workflow through to XML workflow architectures and integrating Business Process Technology with EAI and BPM.
- **SECTION 2, Workflow Standards**, deals with the importance of standards, and details the new Wf-XML 1.1 binding recently published by the Coalition's Technical Committee.
- **SECTION 3** offers selected **Case Studies** from the annual Global Excellence in Workflow awards of 2001 and 2002.
- **SECTION 4:** The WfMC Glossary, an explanation of the structure of the Workflow Management Coalition and references comprise the last section, **Directory and Appendices**, including a membership directory.

SECTION 1—THE WORLD OF WORKFLOW

- ***Introduction to Workflow.***

Charles Plesums, CSC

Evolving from the Executive Briefing presentation, this paper is vendor independent and includes:

- What is (automated) workflow?
- What does Work Management accomplish?
- Benefits
- Technology and Standards
- Success stories
- How to get started.

- ***Workflow Application Architectures—Classification and Characteristics of workflow-based Information Systems: Prof. Dr. Jörg Becker and Michael zur Muehlen, University of Muenster, Department of Information Systems, and Dr. Marc Gille, Carnot AG, Engineering Division.***

This paper outlines different architectural approaches to information systems that rely on workflow technology. Based on the granularity of application components as well as on the specifications of the workflow system used, they develop a framework that helps designers and users of workflow applications identify the system type suitable for their specific application. In the organizational dimension, they distinguish between workflow applications at the inter- and intra-organizational level. In the technical dimension they differentiate

between workflow-driven applications, such as Enterprise Application Integration projects, and workflow-based applications, such as systems that rely on embedded workflow components. For each of the four resulting classes of workflow applications they describe typical applications, the role of standards as well as guidelines for successful project management.

- ***The Impact of Business Performance Monitoring on WfMC Standards.***

Carolyn McGregor, Faculty of Information Technology, University of Technology, Sydney.

Workflow Management Systems provide a unique vehicle for the organization to capture and analyse a rich set of information about the business processes as they are enacted by the organization. Such information would include, but is not limited to, volume analysis, product mix analysis, service level attainment and resource productivity. The existing assumptions for monitoring workflow enactment do not provide organizations with the ability to use this information for business performance monitoring also. To ensure maximum benefit from their Workflow Management investment, organizations must not only consider the enactment of the business process steps, but also the use of the information captured during these enactments that facilitate organizational performance measurement, together with the delivery of this information to management. This paper evaluates the data flow requirements to enable workflow process definition and workflow audit data to be captured in a decision support system to enable business performance monitoring. The key contribution of this research is an amended WfMC reference model that incorporates business performance monitoring needs.

- ***Workflow as a Web Application—the Grand Unification.***
Heinz Lienhard, ivyTeam, Switzerland. This paper proposes the direct way from process (be it a business, government or technical one) to the web application in two step: first a design, modeling and prototyping step followed by automatic upload on a suitably prepared web server. The program logic of a Web application is naturally defined and implemented by a graphical *process model*; i.e. the process model eventually controls the application's behavior. If the process is modeled by an appropriate modeling and simulation tool, its simulator can be transformed during upload to the application controlling engine—actually the workflow engine.
- ***Peer-To-Peer Architectures And Collaborative Work Management And Workflow: The Implications Of “Napster” For Document Management.***
B. John Masters, IMC.

The much-ballyhooed convergence of digital and wireless technologies will increase the dissemination and distribution of

information processing activities. One model for this is 'peer-to-peer' (e.g., Napster or Groove.net), where information is published locally, and distributed searching algorithms replace central control constructs like directories. Collaboration in this environment will be characterized by participants who grow ever more 'distant': separated by location, responsibilities, domain knowledge, and expertise.

- ***An XML based Architecture for Collaborative Process Management:***

David Hollingsworth, ICL/Fujitsu, UK

This paper discusses the background to XML and provides a classification of the various diverse standards now defined within the XML framework. Their relevance to workflow architectures is discussed in general terms using the Workflow Reference Model and Web Services Architecture as background. An assessment is made of existing XML based standards with direct applicability to collaborative workflow along with potential areas for further standardization. The paper concludes with a view of a consolidated architecture for workflow applications based on the range of existing and potential XML standards.

- ***Process Management: A Fundamental Component of Successful Web Service Execution.***

Michael Rossi, CSC—PMJICALS.

This paper describes the role of process management in the Web Services environment. While there are several important facets of a Web Service, such as discovery, description and collaboration protocol agreement, one equally important facet is the ability to control the execution of a desired service. That is to say that there must be a way to request that the service be initiated, to monitor its status (if it is long-lived), to suspend or terminate its execution on demand and to be made aware of its completion. Not only must such a mechanism exist, but it also must be sufficiently standardized so as to be uniformly accessible by all service requesters. It must be a part of the Web Service infrastructure.

- ***Business Process Technology—from EAI and Workflow to BPM***
Mike Marin, FileNET

Business process technology goes from simple component assembly technology to very complex workflow technology. The challenge for an organization is to easily classify the technology, and apply it to the right problem space. In today's business environments problems often require the integration of several business process technologies to address different areas of the complex problems faced by the organization. This paper describes and classifies the different types of business process technology. It can be seen as a complement to last year's paper by Martin Ader. Martin's paper described the trends; this paper describes how those trends are giving birth to business process

management. It also answers the question of what is the difference between business process management and workflow.

SECTION 2—WORKFLOW STANDARDS

- ***The Value of Standards.***

Betsy Fanning, AIIM.

Ms Fanning provides an overview of standardization and explains that industry standards and specifications are developed as the result of members of a given industry identifying a need for standardization and then developing the standard or specification to fill that need. She shows specifically why workflow standards make sure the essential criteria the users ask for has been met, which reduces the risk in implementing the workflow software in their enterprises.

- ***WfXML Challenge—Interoperability Demo by SAP and Staffware.***

Justin Brunt, Staffware, and Rainer Weber, SAP.

In the fall of 2000, the WfMC issued a challenge to its members to demonstrate their support for the latest XML based version of the interoperability standard—WfXML 1.0. SAP and Staffware accepted the challenge: because they shared common aims: SAP software drives the ERP, CRM and B2B components in most blue chip companies and Staffware is the leading independent Workflow/Business Process Management solution provider.

- ***Workflow Standard—Interoperability WfXML 1.1 Binding (Document Number WfMC-TC-1023).*** Edited and coordinated on behalf of the WfMC by Program Manager, Joint Computer-aided Acquisition and Logistic Support (JCALS) with technical support from Computer Sciences Corporation (CSC), this document represents a specification for an XML language designed to model the data transfer requirements set forth in the Workflow Management Coalition's Interoperability Abstract specification (WfMC-TC-1012). This language will be used as the basis for concrete implementations of the functionality described in the abstract in order to support the WfMC's Interface 4 (as defined by the workflow reference model).

SECTION 3—GLOBAL EXCELLENCE IN WORKFLOW AWARDS

The prestigious ***Global Excellence in Workflow Awards***, now in their twelfth year are highly coveted by organizations that seek recognition for their achievements. These awards not only provide a spotlight for companies that truly deserve recognition, but also provide tremendous insights for organizations wishing to emulate the winners' successes.

The WfMC, Giga Information Group and the Workflow And Reengineering International Association (WARIA) joined forces to honor organizations that have demonstrably excelled in implementing innovative solutions to meet strategic business objectives.

To be recognized as winners, companies must address three critical areas: excellence in *innovation*, excellence in *implementation* and excellence in strategic *impact* to the organization. Further information is available at www.waria.com.

While successes in these categories are prerequisites for winning a *Global Excellence in Workflow Award*, it would reward all companies to focus on excelling in innovation, implementation and impact when installing workflow technologies. Without doing so, they will not achieve the full potential that workflow offers.

These companies profiled in this section recognized that implementing innovative technology was useless unless they had a successful implementation approach that delivered—and even surpassed—the anticipated benefits.

- Dutch-based medical insurance firm **Anova**, part of the Agis Group, completely overhauled and updated its document management and workflow system with software and consultancy from **Staffware**, with dramatic long-term benefits to the organization and its competitiveness. Since implementation, Anova has seen an improvement of 93 percent in outstanding work-in-progress jobs. The number of calls to the call center has reduced by 44 percent (with the nature of calls changing from mainly problem solving to mainly information dissemination) and 75 percent of Anova's jobs are now processed within a single day.
- **The City of Salzburg** municipal authority set itself the challenging tasks of putting customer-oriented administration at the top of its priorities to re-emerge as a strong business center in the future. Working with **Unisys** and **Fabasoft**, their productivity improvements included the building permission process being reduced from 150 days to approximately 50 days and paper mail traffic dropped by 60 to 80 percent. Their real achievement, however, was taming the “jungle of signs” which involved the legally obliged two-yearly approval of 20,000 road signs and elimination approximately 6000 redundant traffic signs with a total cost saving of 1.320.000 Euro.
- Every document that enters **Dubai Police** from the outside passes through the general administration department. Their daily volume is over 700 cases with average of 30 papers each. Using the latest communications technology and networking enables the managers to administer their documents through workflow and daily work not only from the offices but also from their houses and cars. Integrator **Emirates Computers** used **IeStreamWMS** software imaging and workflow to successfully implement a paperless management solution for the Dubai Police that is considered the first and largest workflow enterprise for the region.
- A bilingual province of Canada, the **Government of New Brunswick** generates a large volume of documents to be

translated. These translation activities are in keeping with complex assignment, management, and budgetary charge processes all of which are regulated by extremely tight deadlines, and are thus assigned to a large number of in-house Translators and Freelancers. **GENER-X** developed a **JetForm** solution enabling the user to submit, via the Internet, documents to be translated by including all essential parameters to be performed automatically, in real time and within a collaborative context on the Internet. This solution enables in-house Translators and Freelancers to not only improve the processing time, but reduce costs thanks to the retrieval of existing contents as well as follow project progress, improve quality using automated validation phases and evolve within a fully computerized environment.

- **iJET Travel Intelligence** embedded Fujitsu's i-Flow workflow engine into its WorldcuePro content management system. The application went to production rapidly, only taking three months. The combined products provide a continuous stream of updates that reflect the latest travel information from more than 3,000 sources worldwide, on topics ranging from health, security and transportation to entry/exit rules and communications. The workflow component of the content management system enables editorial and approval processes, ensuring the efficient verification of up-to-the-second travel intelligence. By providing timely, accurate and personalized information, the application helps travelers to circumvent potential travel difficulties and enhance the quality of their travel experiences.
- **R.R. Donnelley & Sons Company**, a leading North American printer, communications services, and logistics company required that their Graphics Management division produce custom educational projects with greater complexity than projects produced in previous years, resulting in the division to experience a challenge in managing their expanded workload. By developing PRISM, a web-based project management system using **ActionWorks Metro**, the Graphics Management team is on track to attain productivity gains in the 14 to 16 percent range. Prior to PRISM, Account Management Specialists could handle approximately 6 to 10 complex components; now with the help of PRISM, process improvement and training, AMS members work in teams and can work with more than 24 different components, and manage more projects at once.
- **Taylor-Nelson Sofres** is the French leader for market surveys, polls and consultancy. After implementing a set of quality processes from **W4**, and deploying the Intranet infrastructure and the groupware tools, they implemented a workflow solution allowing their employees to control the consistency of a highly critical, complex process driving their core business: surveys production. The application was developed according to the

spiral methodology, in close collaboration with the employees involved, and deployed step by step within the company.

- **Triumph International Japan** (TIJ), a leading apparel maker with sales of US\$400 Million in Japan, and 1800 Japanese staff operating 1,300 manned stores with a total of almost 10,000 outlets, has introduced a unique Integrated Workflow System utilizing ActiveModeler/ActiveFlow from **KAISHA-Tec** and supported by **NEC Corporation**. These innovations are considered to be at the forefront of Workflow technology, and fully cater to the demanding requirements of Japanese work practices. The integration includes 600 Head Office PCs, UNIX backend database systems and more recently CE devices in 1,300 shops and also NTT Docomo I-Mode mobile telephones. Substantial productivity cost savings, increased revenues, and increased productivity overall have been achieved.
- Lockheed Martin Mission Systems Data Capture System 2000 (DCS 2000) utilized barcode, digital imaging, optical recognition and **Staffware** workflow technologies to check-in and extract the data from 151.4 million forms. This is the equivalent of 1.5 billion 8.5" x 11" pages processed for the **United States 2000 Decennial Census**. Seventy percent of the data was extracted automatically with an accuracy of over 99 percent. Lockheed Martin estimates that the integration of commercial off-the-shelf packages, compared to writing the software from scratch, saved \$1 million. The generic application interface for COTS integration has saved development time through reuse and reduced administration.

SECTION 4—DIRECTORY AND APPENDICES

The WfMC Glossary, Document Status—Issue 3.0, Feb 99, is available on our website at www.wfmc.org. Compiled by Dave Hollingsworth, chair of the WfMC Technical Committee, it contains technical definitions for terms used in the workflow management coalition specifications and discussions. The Workflow Reference Model, published in last year's Handbook can also be downloaded from the WfMC website.

- The **Authors' Appendix** provides the contact details and biographies of the contributors to this book. You may contact them if you wish to pursue a discussion on their topic.
- The chapters listing the Officers and Fellows together with the section on the **WfMC Structure and Membership** describe the Coalition's background, achievements and membership structure and sets out the contractual rights and obligations between members and the Coalition
- **WfMC Member Directory**: All members in good standing as of December 2001 are listed here. Funding members are permitted to include details on their products or services.

The WfMC invites you to delve into the information presented in whatever manner suits your reading or research style and knowledge level.

Our thanks and acknowledgements extend to not only the authors whose works are published in this Handbook, but also to the many more that could not be published due to lack of space.

Selected papers and case studies are available for free download from our sister website www.e-workflow.org if you wish to continue your reading and research on the topic of workflow.