



## Combining and Uniting Business Intelligence with Semantic Technologies

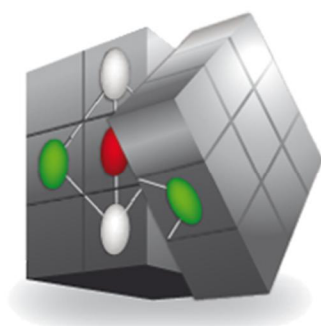
Acronym: CUBIST

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Small or Medium-scale Focused Research Project

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# cubist

*Your Business Intelligence*

## D5.1.6: CUBIST Dissemination Report v2

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Version	Description	Contributors
0.1	draft	Frithjof Dau (SAP)
0.2	Updated publication list, added section about teaching at ECP	Marie-Aude Aaufaure (ECP)
0.3	Added section about teaching at SHU	Simon Polovina (SHU)
1.0	Final version with comments of reviewers addressed	Frithjof Dau (SAP)

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# 1 Introduction

In CUBIST, Task 5.1 “Dissemination” will promote and empower the dissemination, transfer, exploitation, assessment and broad take-up of CUBIST project results to the target audience and stakeholders. The goal of the CUBIST dissemination activity is to ensure high visibility of the scientific results of the research project, leading to an increased profile for European researchers in the field of Semantic Technologies, Business Intelligence and Visual Analytics, and to early use of these results by the European industry.

Dissemination activities on one hand will focus on scientific institutions in order to spread the scientific progress and establish external quality assurance. On the other hand, the project results will be continuously provided to a broader public audience interested in the results of CUBIST, in order to gain domain related feedback.

## 1.1 Dissemination Approach

The project and its results will be communicated to the internal audience, the scientific community and the potential business users of CUBIST. All partners are aware of and committed to this communication. It is the principle of all dissemination activities to use research results to create value within the targeted communities of the European Union, to ensure that government funding will lead to further advancements and to keep industry at the leading edge of BI solutions using ST. Thus wherever possible, research results will be communicated to create awareness and add to knowledge within targeted user and scientific communities of the European Union.

## 1.2 Instruments

In Deliverable D5.1.5 “CUBIST Dissemination Report v.1”, we already discussed a rough distinction between different dissemination instruments w.r.t. to the target audience on the one hand and the information direction (means which only push information to the target audience, and means which allow the audience to provide feedback) on the other hand. We recapitulate and refine this distinction as follows:

- First of all, some “classical” means for dissemination are set in place. These means particularly address interested business users and stakeholders and comprise:
  - The CUBIST website
  - General information material like factsheets and presentations
  - Press releases
- Next, to address a wider audience, the following web 2.0 channels have been set in place:



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- YouTube Channel
- Wiki (external)
- Blog
- LinkedIn Group

Similarly to the classical means, these channels mainly address interested business users and stakeholders, but in contrast to the classical means, they allow the information consumers to provide feedback to the CUBIST consortium.

- All new means, which have not been addressed in D5.1.5., are events like internal or external demo jams, or non-scientific conferences like SAP DKOM or SAP Sapphire. Such events target business users and stakeholders and allow CUBIST members to gain feedback.
- Finally, there are dissemination means which particularly address the scientific community. As discussed in D5.1.5, These means comprise:
  - CUBIST Workshop
  - Articles and talks
  - Invited talks

In addition to the techniques outlined above, CUBIST dissemination now includes academic teaching.

### 1.3 Short overview over this deliverable

In the earlier deliverable D5.1.5 “CUBIST Dissemination Report v.1” a comprehensive overview of the dissemination means of CUBIST has been given. In Deliverable D6.1.1 “Updated implementation plan including updated dissemination plan”, an update of the dissemination plan and corresponding activities has been provided. In this report, we summarize the dissemination channels of CUBIST and focus on activities which have been conducted after the delivery of D5.1.5. If we recapitulate information provided in D6.1.1., this will be explicitly mentioned.



## 2 Maintaining and Updating exiting Means

In this chapter, we describe maintenance and updates of dissemination channels which have been already identified in D5.1.5.

### 2.1 YouTube Channel

As described in D6.1.1, in March 2012 four new videos have been uploaded to the YouTube channel, which address specific features of the CUBIST prototype. In September 2012, a new, high-quality video has been created by the CUBIST partner HWU, which provides a concise overview of the overall prototype.



**Fig 3: New, high-quality video on the CUBIST YouTube channel (September 2012)**

As the screenshot in Fig.3 shows, this video gained more than 50 views in the first 24 hours. This video will serve as the first official demo video for CUBIST and is thus featured on



SAPTube (see Section 3.3.2) as well as on the CUBIST website (see Section **Error! Reference source not found.**).

## 2.2 CUBIST Website

As already stated in D6.1.1., the sections “Objectives”, “Structure” and “Publications” have been updated. Since then, minor updates took place, like updating the news section and adding the above mentioned video to the “about the project” section of the website.

## 2.3 Blog

The SCN blog of Frithjof Dau in the SAP Community Network (SCN), which is used as blog for CUBIST, has not been updated since D.61.1. In the next screenshot, an overview over the posts in the blog is provided, in order to provide the number of views for the entries.

Title	Author				Views
<a href="#">Semantic Technologies for Enterprises</a> in Data Services and Data Quality	Frithjof Dau	0	0	0	62
<a href="#">A very concise and personal comparison of different Visual Analytics means (bar charts, graphs, FCA)</a> by Frithjof Dau	Frithjof Dau	0	0	0	147
<a href="#">CUBIST: Combining and Uniting Business Intelligence with Semantic Technologies</a> by Frithjof Dau	Frithjof Dau	0	0	2	51
<a href="#">An Expert Networking Session at SAP TechEd 2010 in Berlin about Semantic Technologies in the Research Project Aletheia</a> by Frithjof Dau	Frithjof Dau	0	0	2	8

**Fig 1: CUBIST blog (September 2011)**

The blog is located in the SAP Community Network (SCN). It should be noted that apart from the CUBIST blog as such, CUBIST is mentioned in different places in SCN as well. An example is the overview of BI-related activities in SAP research, including CUBIST, as shown in the next screenshot.



**SAP Research: Business Intelligence**  
 Version 6  
 created by Jennifer Reese on Mar 16, 2012 9:58 PM, last modified by Jennifer Reese on Mar 30, 2012 7:10 PM

**Mission**  
 User-centric business intelligence & analytics

**Vision**  
 Lean research principle:  
 Research should positively impact the business user and support the SAP 1B users strategy

**Simplicity:**  
 Focus on simple, powerful design demonstrating a tangible breakthrough value proposition in analytics

**Challenges**

- Easy Data Access:**  
 Analytics on heterogeneous structured and unstructured data (e.g. databases, smart items, linked open data) with no common semantics
- Easy Consumption:**  
 Visual analytics on big data -- intuitive, consistent and interactive visual data consumption on any device
- My Analytics:**  
 Contextual and collaborative delivery of personalized information according to user situation (profile, activity, community, location...)

Learn more about our publicly-funded research projects

Project	Type	Description/Themes
CUBIST	FP7	From classical to semantic BI Visualization, unstructured IM
DEEPFLOW	InvestNI	Change management for complex projects Unstructured IM
GINSENG	FP7	Performance control in wireless sensor networks RT infrastructure for IM
LinkedDesign	FP7	Linked engineering and manufacturing platform Data mashup, contextual BI

Fig 2: Overview of BI-related activities within SAP Research (see <http://scn.sap.com/docs/DOC-25191>).

## 2.4 External Wiki

As already described in D6.1.1, the Wiki has been updated with CUBIST-specific sections about FCA, BI, and related topics. After the delivery of D6.1.1, further sections have been added which inform about topics relevant for CUBIST. Moreover, the consortium agreed to use the wiki in order to document the functionality of the CUBIST prototype.

To name the most important pages which have been added so far:





- Information on the core themes in CUBIST (Semantic Technologies, Formal Concept Analysis, Information Visualization, Business Intelligence).
- A comparison between different types of analytics.
- Information about the prototype (e.g. CUBIST backend information like the architecture or data preparation, as well as information about the capabilities of the CUBIST frontend)
- Information about the different use cases.

In Fig 3 the entry page of the wiki is provided. An example page of the wiki is given in **Error! Reference source not found.** Moreover, the two-monthly update of dissemination channels (see section 3.4) ensures that the wiki is kept up-to-date.

**CUBIST Topics** [\[edit\]](#)

---

**Core Themes in CUBIST** [\[edit\]](#)

- [Semantic Technologies](#)
- [Formal Concept Analysis](#)
- [Information Visualization](#)
- [Business Intelligence](#)

**Misc** [\[edit\]](#)

- [Different types of Analysis: Bar Chart, Graphs, FCA](#)

**CUBIST Prototype Documentation** [\[edit\]](#)

- [Architecture](#)
- [Infrastructure/ Facilities](#)
  - [OWLIM](#)
  - [Data Preparation](#)
  - [Translation to formal contexts](#)
- [UI](#)
  - On overview over all means of information in CUBIST can be found here: [Factual search](#), [exploratory search](#), [analytics](#) . Below you find direct links to these means.
    - [Searching for facts with factual search](#)
    - [Navigating the information space with faceted search](#)
    - [Exploring the information space with graph-exploration of facts](#)
    - [A first glance at the Visual analytics features of CUBIST](#)
- [UC prototypes](#)
  - [HWU](#)
  - [SAS](#)
  - [Inno](#)

**Fig 3: CUBIST external wiki, entry page (September 2012)**

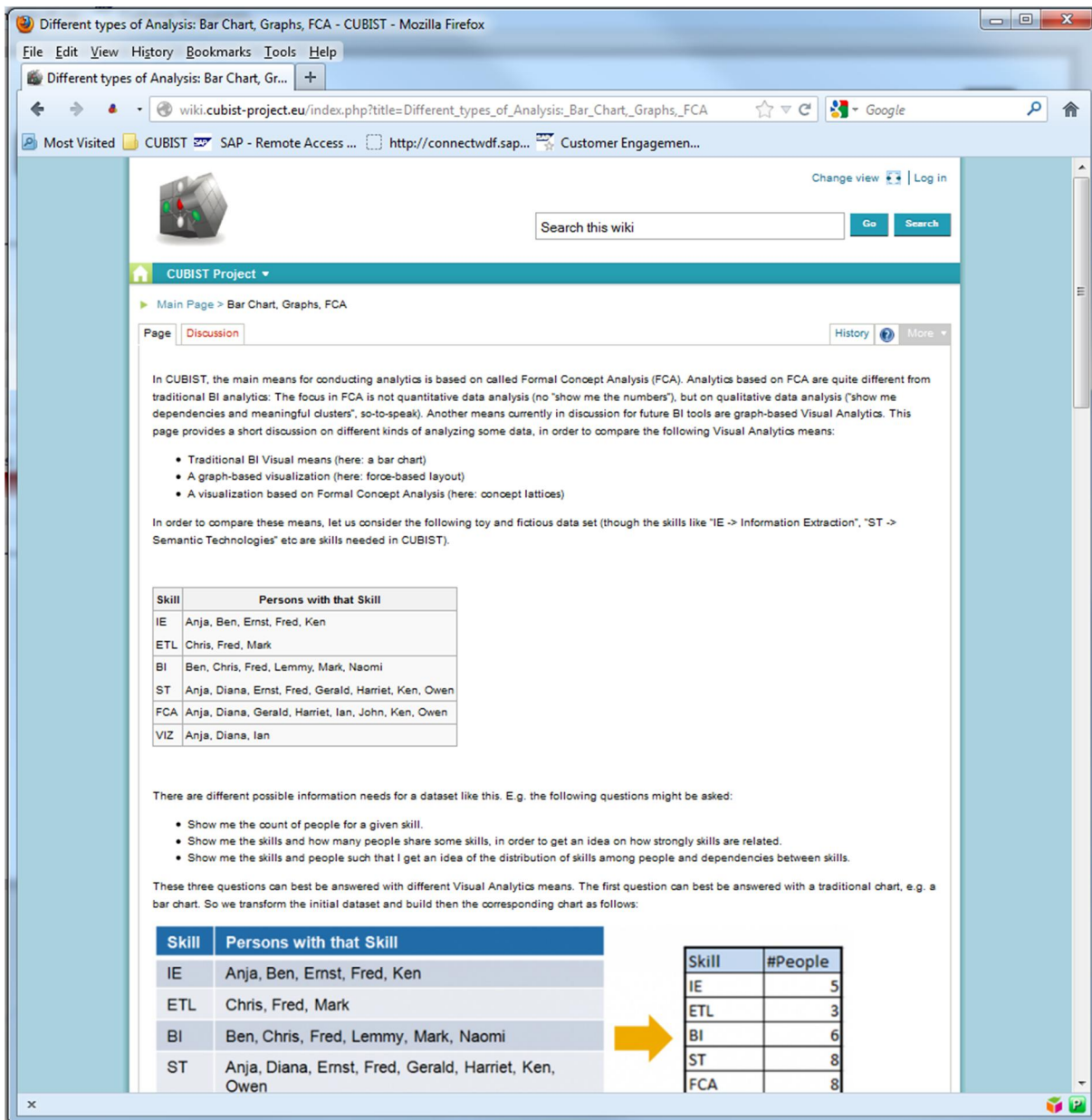


Fig 4: CUBIST external wiki, example page (September 2012)

## 2.5 CUBIST Workshop

Co-located with the 19th International Conference on Conceptual Structures (ICCS), 25-29 July 2011, University of Derby, UK, the first scientific workshop for CUBIST has been conducted. The workshop has been dedicated to topics related to CUBIST, but not restricted to CUBIST members. The proceedings of the workshop have been published on CEUR, Vol 753.



The workshop has become an annual event, colocated with appropriate conferences. The 2nd CUBIST Workshop had been held in conjunction with ICFCFA 2012 (6 - 10 May 2012, Leuven, Belgium). We received six submissions, three of them outside from the CUBIST consortium, with five submissions accepted. The proceedings are available on the CUBIST website and have been printed by KULeuven (ISBN-Number: 9789081409933, EAN: 9789081409933).

## 2.6 CUBIST Public Presentation

In Section 2.2.2 of the first dissemination report, we reported that we published an introductory presentation about CUBIST that is provided on the website. This presentation is currently under major revision in order to document the prototype and the use cases. It already contains information about the CUBIST infrastructure, an extended set of slides about FCA, a comparison of different visual analytics means, information about the capabilities of the frontend, and information about two use cases (HWU and SAS). Its size has grown from 16 to 60 slides. The current state of the presentation is documented in Fig 4. It is planned to finalize this presentation by mid October 2012 and upload it to the CUBIST website.

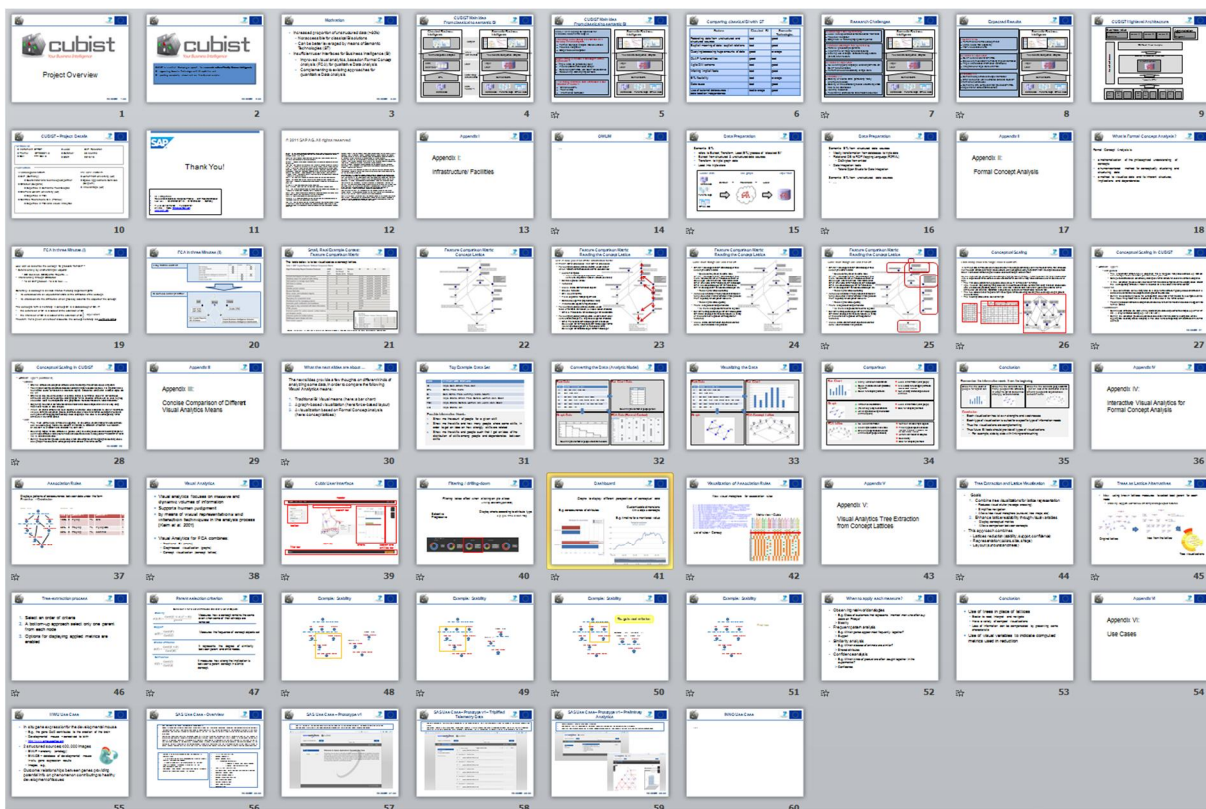


Fig 4: draft of new CUBIST overview presentation



## 2.7 List of Papers

Below, an updated list of scientific papers which have been written in the context of CUBIST (with consortium members being authors) is provided.

### 2010

- **K. McLeod, K. , Ferguson, G., and Burger, A.: Argudas: arguing with gene expression information**  
BMC Bioinformatics 2012, 13(Suppl 1):S8 doi:10.1186/1471-2105-13-S1-S8
- **K. McLeod, K. , Ferguson, G., and Burger, A.: Argudas: arguing with gene expression information**  
In Proceedings of the 3rd International Workshop on Semantic Web Applications and Tools for the Life Sciences, 10 December 2010, Berlin, Germany.
- **Andrews, S., Orphanides, C.: Knowledge Discovery through Creating Formal Contexts**  
In Hill, R. (ed.): First International Workshop on Computational Intelligence in Networks and Systems (CINS 2010),  
in Xhafa, F., Demetiadis, S., Caballe, S., Abraham, A. (eds.): Second International Conference on Intelligent Networking and Collaborative Systems (INCOS 2010), pp. 455-460. ISBN: 978-0-7695-4278-2/10. DOI 10.1109/INCOS.2010.53. IEEE Computer Society, 2010.
- **Andrews, S. and Orphanides, C. (2010). Analysis of Large Data Sets using Formal Concept Lattices.**  
In: Kryszkiewicz, M. and Obiedkov, S. (eds.). Proceedings of the 7th International Conference on Concept Lattices and Their Applications (CLA) 2010, ISBN 978-84614-4027-6. Seville: University of Seville. pp. 104-115
- **Andrews, S., Orphanides, C., Polovina, S. (2010). Visualising Computational Intelligence through Converting Data into Formal Concepts.**  
In: Bessis, N., Xhafa, F. (eds.), Proceedings of the 1st International Workshop on Emerging Data Technologies for Collective Intelligence (EDTCI) 2010, in: Xhafa, F., Barolli, L., Nishino, H., Aleksy, M. (eds.), Proceedings of the 2010 International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3GPCIC), Fukuoka Institute of Technology, Fukuoka, Japan. ISBN 978-0-7695-4237-9/10. IEEE Computer Society. pp. 302-307.

### 2011

- **Andrews, S. and McLeod, K.: Gene Co-Expression in Mouse Embryo Tissues.**  
In: Dau, F. (ed.) 1st CUBIST Workshop, at ICCS 2011, Derby, UK. CEUR Workshop Proceedings, Vol. 753, pp. 1-10. ISSN: 1613-0073
- **Andrews, S., Orphanides, C. and Polovina, S. (2011) Visualising Computational Intelligence through converting Data into Formal Concepts.**



Book Chapter. In: Bessis, N. and Xhafa, F. (eds.) Next Generation Data Technologies for Collective Computational Intelligence. Studies in Computational Intelligence (352). Berlin: Springer. pp. 139-166.

- **Andrews, S. (2011) In-Close2, a High Performance Formal Concept Miner.**  
In: Andrews, S., Polovina, S., Hill, R. and Akhgar, B. (eds.): Conceptual Structures for Discovering Knowledge - Proceedings of the 19th International Conference on Conceptual Structures (ICCS) 2011. LNAI 6828. Berlin: Springer. pp. 50-62.
- **Burger, A., Paschke, A., Romano, P., Marshall, M S and Splendiani, A.: Biomedical semantics in the Semantic Web**  
In: *BMC Bioinformatics* 2012, **13**(Suppl 1):S1
- **Etienne Cuvelier and Marie-Aude Aufaure. Graph Mining and Community Detection.**  
Springer LNBIP 96 (Lecture Notes in Business Intelligence Processing), pp. 117-138, ISSN: 1865-1348, 2012.
- **Dau, F (ed): Proceedings of the first CUBIST workshop**  
CEUR Workshop Proceedings, Vol. 753. ISSN: 1613-0073
- **Dau, F: Semantic Technologies for Enterprises (invited paper)**  
In: Andrews, S., Polovina, S., Hill, R. and Akhgar, B. (eds.): Conceptual Structures for Discovering Knowledge - Proceedings of the 19th International Conference on Conceptual Structures (ICCS) 2011. LNAI 6828. Berlin: Springer. pp. 50-62.
- **Dau, F., Sertkaya, B.: An Extension of ToscanaJ for FCA-based Data Analysis over Triple Stores**  
In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 11-22. ISSN: 1613-0073
- **Dau, F., Sertkaya, B.: Formal Concept Analysis for Qualitative Data Analysis over Triple Stores**  
Proceedings of the 1st International Workshop on Modeling and Reasoning for Business Intelligence, in conjunction with the 30th International Conference on Conceptual Modeling (ER 2011).
- **Dimitrov, M.: Semantic Technologies and Triplestores for Business Intelligence''**  
To be published by Springer in the LNBIP series.
- **Hawrylycz M, Baldock RA, Burger A, Hashikawa T, Johnson GA, et al.: Digital Atlasing and Standardization in the Mouse Brain.**  
PLoS Comput Biol 7(2): e1001065. doi:10.1371/journal.pcbi.1001065
- **Melo, C.A., Aufaure, M.-A., Le Grand, B. and Bezerianos, A.: Extracting and Visualizing Tree-like Structures from Concept Lattices**  
In: 15th International Conference on Information Visualization (IV 2011). London, UK, 2011.
- **Melo, C.A., Le Grand, B., Bezerianos, A. and Aufaure, M.-A.: Parent Selection Criterion for Extracting Trees from Concept Lattices**



In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 23-32. ISSN: 1613-0073

- **Melo, C.A., Aufaure, M.-A., Bezerianos, A. and Le Grand, B.: Cubix: A Visual Analytics Tool for Formal Concept Analysis.**

In: 23ième Conférence Francophone Sur l'IHM (IHM 2011) – Demo. Sophia-Antipolis, France, 2011.

- **Mikhailian, A., Klai, S., Muller, C., Fontaine, B., Moreau, D. and Ursík, m.: Applying Conceptual Analysis to Space Data**

In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 33-42. ISSN: 1613-0073

- **Orphanides, C.: Exploring the Applicability of Formal Concept Analysis on Market Intelligence Data**

In: Dau, F. (ed.): Proceedings of the first CUBIST workshop, at ICCS 2011, Derby, UK, July 2011. CEUR Workshop Proceedings, Vol. 753, pp. 43-52. ISSN: 1613-0073

- **Splendiani, A: Burger, A., Paschke, A., Romano, P. and Marshall, M S: Biomedical semantics in the Semantic Web**

In: Journal of Biomedical Semantics, Vol 2, Suppl 1,

- **N Zaizi and A Burger, Towards spatial description of biomedical atlases**  
4th eHealth, November 2011, Malaga.

## 2012

- **Andrews, S and Orphanides, C.: Knowledge Discovery through creating Formal Contexts.**

In: Xhafa, F. (ed.): Int. J. of Space-Based and Situated Computing (IJSSC), Inderscience, (in press).

- **Andrews, S and Orphanides, C.: Knowledge Discovery through creating Formal Contexts.**

In: Xhafa, F. (ed.): Int. J. of Space-Based and Situated Computing (IJSSC), Inderscience, (in press).

- **Awang Iskandar, D. N. F., McLeod, K. AND Burger, A.: SEMANTIC WEB SPATIAL REPRESENTATION OF BIOMEDICAL IMAGES**

In: Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012. KU-Leuven press, 2012

- **Baldock, R. and Burger, A.: Biomedical Atlases: Systematics, Informatics and Analysis.**

In: Goryanin, I. and Goryachev A. (eds.): Advances in Systems Biology. Advances in Experimental Medicine and Biology(736). Springer. pp. 655-677

- **Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012.** KU-Leuven press, ISBN-Number: 9789081409933, EAN : 9789081409933, 2012

- **Dau, F.: TOWARDS SCALINGLESS GENERATION OF FORMAL**



### CONTEXTS FROM AN ONTOLOGY IN A TRIPLE STORE

- In: Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012. KU-Leuven press, 2012
- **Cassio A. Melo, Bénédicte Le-Grand, Marie-Aude Aufaure. A Conceptual Approach to Characterize Dynamic Communities in Social Networks: Application to Business Process Management**, in *The 5th Workshop on Business Process Management and Social Software (BPMS2'12)*. Tallinn, Estonia, 2012.
- **Klai, S., Sevinç, E., Fontaine, B., Jacobs, C., Muller, C.: CUBIST: Semantic Business Intelligence Supporting Payload Operations.**  
In: 12th International Conference on Space Operations, 11-15 June 2012, Stockholm, Sweden.
- **Nizar Messai, Cassio Melo, Mohamed Hamdaoui, Dung Bui and Marie-Aude Aufaure. A Conceptual and Visual Approach for Complex System Simulation Data: Application to Aircraft Cabin Design**, in *Concept Lattices and Applications 2012 – (CLA 2012)*. Fuengirola, Spain, 2012 (to be published).
- **POLOVINA, S.: THE TRANSACTION CONCEPT IN ENTERPRISE SYSTEMS**  
In: Dau, F and Andrews, S: Proceedings of the second CUBIST workshop 2012. KU-Leuven press, 2012
- **Pfeifer, K., Schill, A.: Semantic Description of Text Mining Services.**  
In: Second International Conference on Advances in Information Mining and Management, 21-26 October 2012, Venice, Italy.



## 3 New (w.r.t. D5.1.1) Dissemination Means

In this section, new dissemination means which have not been described in D5.1.5 are introduced.

### 3.1 CUBIST Special Journal Issue

In D6.1.1 it has been stated that a Special CUBIST Edition of the International Journal of Intelligent Information Technologies (IJIT). The source of articles for this special edition will primarily be selected peer-reviewed papers from the following conferences and workshops:

- The First CUBIST Workshop, CUBIST-WS-11, held at ICCS 2011, Derby, UK.
- The Second CUBIST Workshop, CUBIST-WS-12, to be held at ICFCA 2012, Leuven, Belgium, 6 – 10 May 2012.
- The 10th International Conference on Formal Concept Analysis, ICFCA 2012, to be held in Leuven, Belgium, 6 – 10 May 2012.

At the time of writing this deliverable, the editors have started to send out invitations to the authors, hence we can confirm that now work on this special issue is executed, following indeed the proposed timeline as it was stated in D6.1.1.

### 3.2 CUBIST in Teaching

Education is the key to innovation and social development. Two of the four CUBIST technical partners are universities, namely Sheffield Hallam University (SHU) and Ecole Centrale Paris (ECP). Moreover, SHU is member of the SAP University Alliances (UA) program. Both universities use CUBIST in their teaching, which will be detailed in the next two subsections.

#### 3.2.1 CUBIST in Teaching at SHU

With its University Alliances (UA) Program, SAP encourages a practical and future-oriented education by enabling worldwide access to the newest SAP technology for lecturers and students. The program aims at universities as well as vocational schools which seek to integrate SAP software into their classrooms.

SHU has actively included FCA into two modules ‘Smart Applications - BSc Web Systems Design’ and ‘Enterprise Systems - MSc Enterprise Systems Professional’, ultimately creating a learning environment that combines SHU’s expertise in SAP and business-orientated research with Learning, Teaching and Assessment (LTA).

Constructing and more importantly developing these modules to reflect industrial practice while furthering this state-of-the-art research and fundamentally providing a stimulating and fulfilling learning experience has been the subject of study by Andrews (2011) and Watmough (2011) in order to assess and understand the fulfilment of learning objectives.





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Learning FCA is intrinsically difficult for students who frequently lack a foundation level understanding of business, complex systems and analysis techniques. Iterations of teaching cycles have led towards the creation of a whole landscape and approach in order to develop the skills and knowledge required to deliver the intended use of LTA (learning, teaching, add assessment) in business systems and augment and inform the research. SAP Research (CUBIST) benefits from students' critical inputs as they are challenged to apply FCA tools.

The landscape created provides a context and provoking iterative analysis cycles that fuels Enquiry Based Learning. The foundation is ERPsim, a large scale, real-world business simulation software based on the Enterprise Resource Planning (ERP) enterprise system by SAP A.G. ERPsim is strong pedagogically; the Situation Cognitive Theory and Problem-based learning feature prominently and actively contributes to the success of the modules.

Progressively developing, understanding, promoting knowledge sharing and peer support provides useful dynamics in the learning environment. Overlying iterative and comparative analysis techniques ranging from MS Excel through SAP Business Intelligence (BI) OnDemand to FCA has heightened the quality of results and delivered a comparison of CUBIST (FCA) with contemporary BI tools.

Observations and conclusions from the students were wide-ranging and included some interesting points. Fig 5 was used to demonstrate how the discovery of relationships and hierarchies in FCA can be useful as a starting point for detailed analysis.

Fig 6 made a critical comparison on how the range of analysis techniques complements each other and highlighted how FCA could be integrated into a BI suite. Fig 7 builds further on this and demonstrates how FCA could integrate with real time process management.

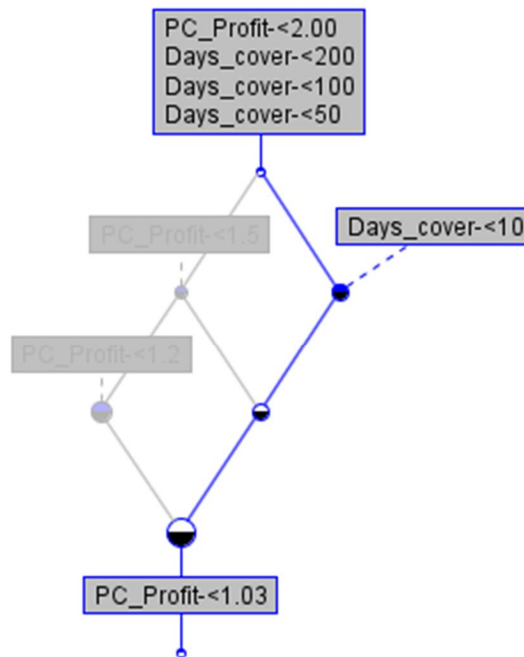


Fig 5: Smart Applications BSc: KPI driven analysis for discovering rules achieved simple and refined lattice based analysis using FCA.

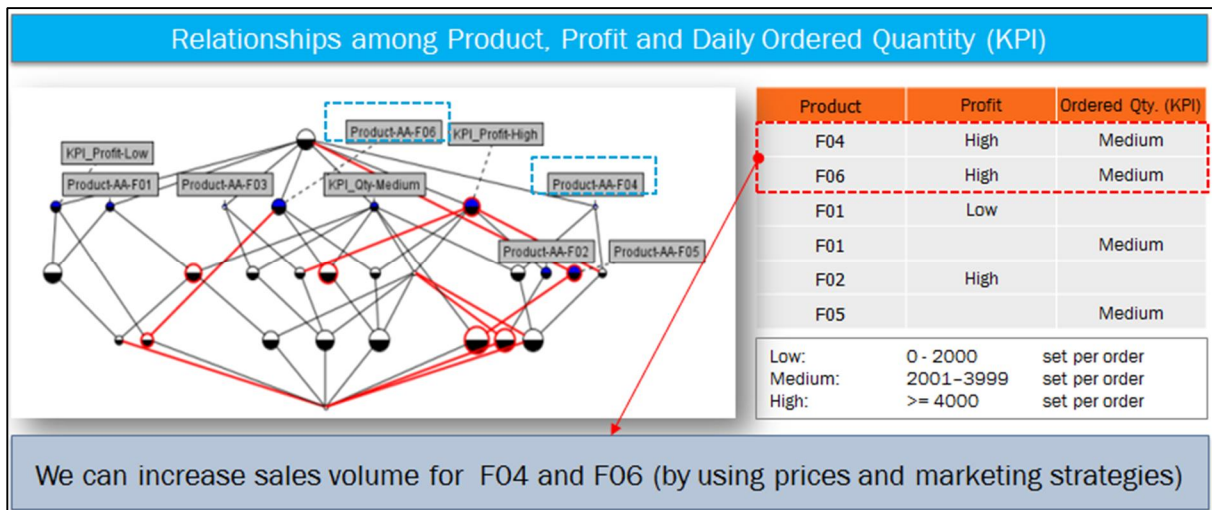


Fig 6: Enterprise Systems MSC: Combined lattice and table analysis in order to understand market behaviour

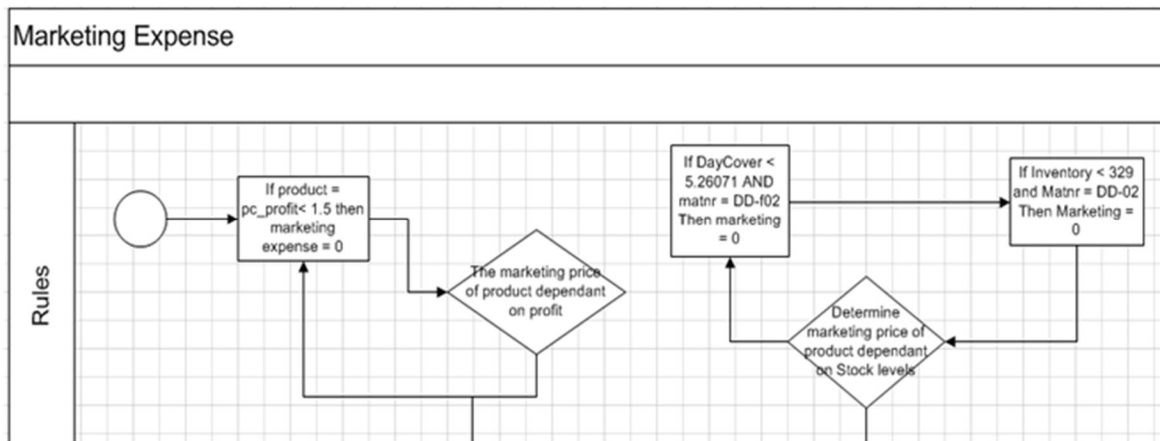
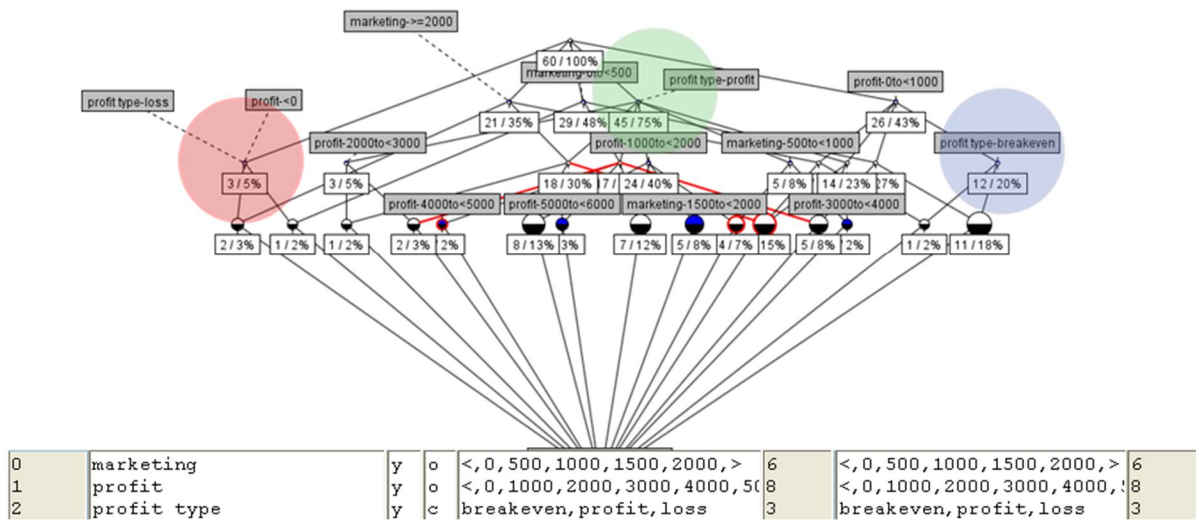


Fig 7: Smart Applications BSc: KPI driven analysis for discovering rules and integration into BPM.

Feedback from the students has been encouraging particularly as the delivery method of the modules improved and problems around data preparation and the difficulties of apply research tools minimised. Comments included:

*“Being able to analyse data and pin point down important factors and relationships between data, this then translates to more precise and accurate business strategies”*

*“The automation [of FCA] in identifying key relationships in data also provides real time data analysis”*

*“The delivery of FCA in SHU Postgraduate modules equipped my fellow students and myself with a distinct knowledge and tools to bring either in the ES industry or in further academic research”*

*“This is an exciting development and we are only starting to discover a small part of the potential of FCA”*



The improvements identified in order to successfully teach FCA will be useful for disseminating FCA in the context of CUBIST and the wider community. It has also been demonstrated how CUBIST (FCA) could be integrated into BI and the need for integrated tools that support knowledge discovery.

### 3.2.2 CUBIST in Teaching at ECP

Business Intelligence teaching at Ecole Centrale Paris mainly concerns the engineer curriculum as well as external students in master.

During the 3rd year of the *engineer curriculum*, in the computer science option, ECP teaches the main concepts of data warehouses and data mining, as well as different types of analytics including graph and FCA-based ones.

ECP is also involved in a new *Erasmus Mundus master in Information Technologies for Business Intelligence* (IT4BI). Erasmus Mundus is a certification of excellence which is delivered by the European community to the best international master programmes in Europe, and it is supported by very attractive scholarships.

Since its inception 20 years ago, Business Intelligence (BI) has become a huge industrial domain and a major economic driver, however overlooked by academics. The Erasmus Mundus Master Programme in Information Technology for Business Intelligence (IT4BI) aims at training computer scientists who understand and help develop the strategies of modern enterprise decision makers.

IT4BI is a 2-year, English-language program jointly delivered by Université Libre de Bruxelles (ULB) in Belgium, Université François Rabelais Tours (UFRT) in France, Ecole Centrale Paris (ECP) in France, Universitat Politècnica de Catalunya (UPC) in Spain, and Technische Universität Berlin (TUB) in Germany. This consortium will prepare the graduates not only to answer today's professional challenges by a strong connection with the needs coming from the industry, but also to pursue their studies into doctorate programs, through strong connections with the researchers' and innovators' views.

The IT4BI program opens in September 2012 and Ecole Centrale Paris is involved in the second year. Marie-Aude Aufaure is the scientific responsible of this program. The ECP specialization, "Data Semantics and User-Centric Business Intelligence", will be implemented as an international master. This specialization focuses on models and technologies related to Business Intelligence and decision-support systems. With a strong focus on unstructured data and semantics, it covers topics induced by the evolution towards next-generation Business Intelligence. This specialization covers theoretical foundations such as advanced data mining as well as new models for Business Intelligence and decision support such as ontologies, graphs models and mining and models for decision-making in uncertain situations.



### 3.3 SAP-Specific Dissemination

As described in D6.1.1., with the release of a first version of a full and integrated CUBIST prototype in 2012, we can now target new dissemination events where working demos of research projects are presented. In this section, some SAP-specific dissemination means are described.

First of all, internal demonstrations of the CUBIST prototype are targeted. Secondly, SAP provides internal dissemination channels like the demo-corner in the SAP Research Navigator and SAPTube. Finally, SAP events and conferences like the SAP UA conference (2012) and DKOM and TechEd (both in 2013) are targeted.

#### 3.3.1 Presentation at internal Demo Jam

On August 8, an SAP internal Demo Jam with a few external customers had been carried out at SAP Dresden, Germany, where CUBIST had been presented among a total of seven demos. We have received valuable and constructive feedback from the audience, particularly with respect to the visualizations. The feedback has been forwarded to the CUBIST consortium and will be addressed in the further conduct of CUBIST. Below, the feedback addressing the CUBIST visualization is provided.

- very sophisticated visualiation but may be increase the beauty
- automatic reordering to readable graph would be cool
- could the text be used as edges directly?
- very nice sunburst visualization!!!
- good viz and interaction
- tree viz & interaction nice, tree as alternativ good idea
- sometimes too much text in the charts
- interesting graph visualization & interaction
- nice visualization
- Good show of innovative visualization types
- adding different visualization was a bit confusing
- Great idea on dealing with real data
- Great presentation

#### 3.3.2 SAP Research Navigator and SAPTube

SAP Research Navigator and SAPTube have been described in D6.1.1. To recapitulate:

SAP Research Navigator is a semantic knowledge management tool which centrally showcases the work of SAP Research and which can be accessed from all SAP employes. It semantically links information about all SAP Research's topics, labs, projects, demos, organizational units, and of course the people contributing. SAPTube is a SAP-internal video sharing platform. SAP employes can both upload and watch videos (like demo-videos, presentations, keynotes, etc). As of Sep. 2012, SAPTube contained more than 3200 videos which have been



watched nearly 200.000 times. It is possible to refer from the demo-section of the SAP Research Navigator to videos on SAPTube.

In September 2012 the video created by HWU was placed on SAPTube and in the demo section of the SAP Research Navigator, as can be seen from the screenshots in Fig 8 and Fig 9.



Fig 8: The new CUBIST video on SAPTube

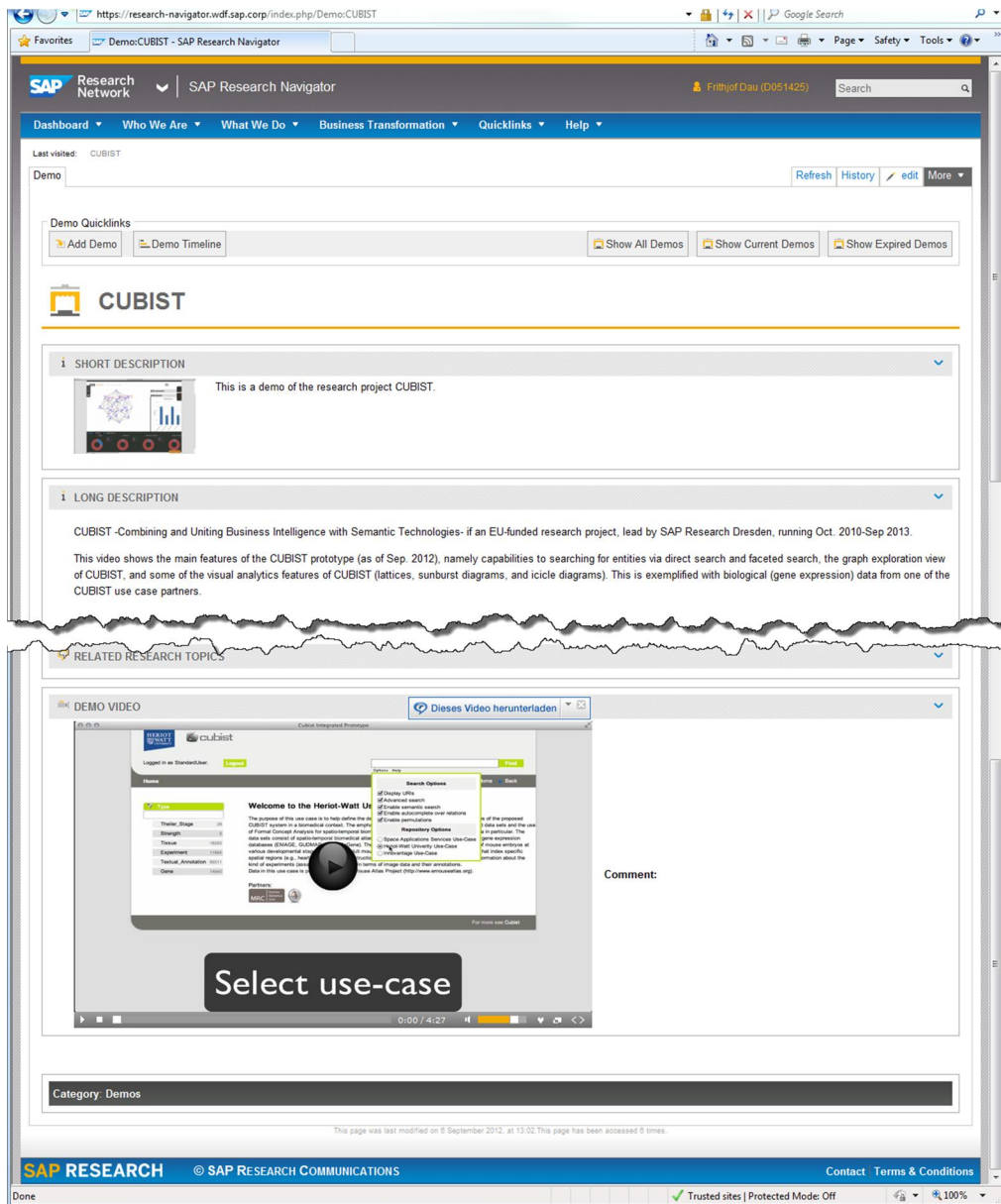


Fig 9: The new CUBIST video on SAPTube

### 3.3.3 Dissemination of CUBIST results at SAP-related Events

Both SAP DKOM and SAP TechEd have already been described in D6.1.1. to recapitulate: The SAP Development Kick-off Meeting (DKOM) is an annual, internal event for everyone in the Products & Solutions and the Technology & Innovation Platform board areas. The event is designed “by Development for Development” and sets the technology direction for the coming year, while allowing the development community to explore and experience the best of our products, technologies, architectures, practices and tools. SAP TechEd (see



<http://www.sapteched.com/>) is the premier technical conference offering over 1,000 hours on SAP platform technologies, focused on SAP NetWeaver, SAP BusinessObjects, and mobile solutions. SAP TechEd offers hands-on workshops, demo-driven lectures, and Q&A sessions on the latest developments in analytics, mobile, cloud, database, and in-memory computing. In contrast to DKOM, SAP TechED is a public event.

Both events will take place in 2013, and at the time of deliverable writing, it was not yet possible to submit demos or presentations.

The SAP University Alliances Program (UAP) has been set up by SAP to encourage a practical and future-oriented education by enabling worldwide access to the newest SAP technology for lecturers and students. The program aims at universities as well as vocational schools which seek to integrate SAP software into their classrooms, and provides these universities with appropriate resources. As already stated, SHU is member of the SAP UAP. A part of UAP are annual Academic Conferences, and in 2012, the SAP Academic Conference EMEA has been conducted in Dresden, Germany, at the beginning of September. SHU and SAP submitted a presentation to this event (see Fig 10), which has unfortunately not been accepted.

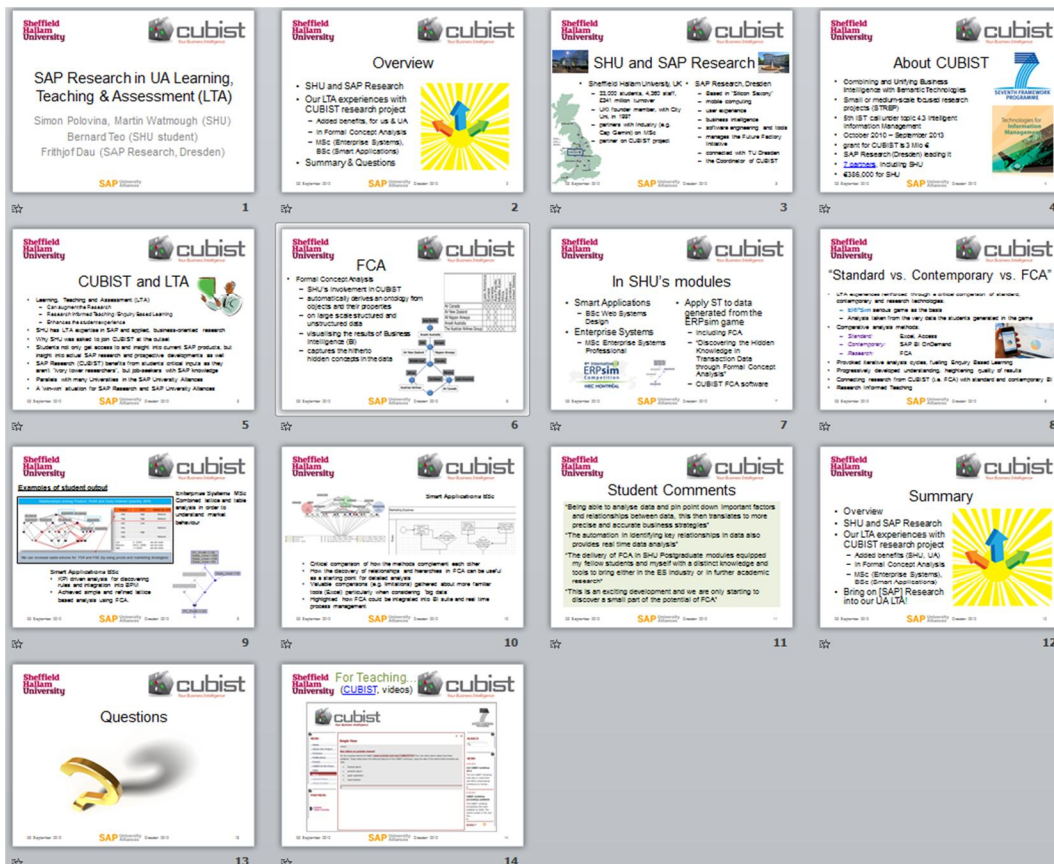


Fig 10: Presentation submitted to the 2012 SAP Academic Conference EMEA





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### 3.4 Two-monthly Update of Dissemination Channels

As described in D6.1.1., in order to ensure the dissemination channels are up-to-date, it has been agreed in the consortium that on a two-monthly basis, in the (weekly) CUBIST call we will collect dissemination activities and – if applicable – update the dissemination channels accordingly. This task has now been taken over by a dedicated person within SAP research.



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## 4 Summary

In this deliverable, we summarized all dissemination activities of CUBIST which took place after the first dissemination report D5.1.5 in Sep. 2011.

For the existing means, we focused on maintaining and updating the web 2.0 channels like the CUBIST website, the external Wiki, the blog, and the CUBIST YouTube channel. Moreover, an updated list of CUBIST research papers has been provided.

Next, we have identified new dissemination channels which have already been partly described in D6.1.1. For some of them, we can report successful activities, like the provision of the CUBIST video in SAPTube, the usage of CUBIST in teaching activities, or the take up of a CUBIST special journal issue. For other means like the events DKOM and TechEd, as submission to those events was not open as of time of deliverable writing, we cannot report results yet.

Finally, it is worthy to note that meanwhile a regular (bi-monthly) update of the dissemination channels is agreed in the consortium, a light-weight process for these updates has been set-up, and a dedicated person within SAP takes care of the update activities.



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## 5 References

- [D5.1.5] CUBIST Dissemination Report v.1. CUBIST deliverable, 2011
- [D6.1.1] Updated implementation plan including updated dissemination plan. CUBIST deliverable, 2012.
- [A2011] Andrews, S.: Aligning the Teaching of FCA with Existing Module Learning Outcomes. ICCS 2011, LNAI 6828, pp. 394-401, Springer-Verlag Berlin Heidelberg, 2011
- [W2011] Watmough, M.: Evaluation of an approach for teaching formal concept analysis. *CEUR Workshop Proceedings*, **753**, 57-67, 2011