

# SAP Education and Research Customer Profile: Business Warehouse at Northern Kentucky University



## Applies to:

Business Process Expert, Education & Research. For more information, visit the [Business Process Expert homepage](#).

## Summary

The goal of this Education & Research Customer Profile is to showcase how SAP Higher Education customer Northern Kentucky University has made use of SAP BW and/or SAP BusinessObjects. The purpose of a customer profile is to provide facts about a customer's reporting environment. It does not constitute a customer reference or endorsement. All information was provided by Bob Byles, the SAP Development Manager at Northern Kentucky University. A special thanks to Bob and his team for taking the time to participate in this profile. If you read this profile and want to contribute similar information about a global SAP BW or BusinessObjects project within Education and Research. Please contact [craig.kennedy@sap.com](mailto:craig.kennedy@sap.com).

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## Introduction

This customer profile deals with the BW implementation at Northern Kentucky University (NKU), known as the PRISM project. The profile starts with basic information about NKU, their systems, and project background. Then it goes deeper and describes what they have implemented, how/when/why they implemented it, who uses it, what challenges they've had, what benefits have resulted. There are even screenshot examples of their queries. This information is valuable for anyone at any stage of a BW project.

### 1. System Details

**Relevant transactional system(s):** Ramp-up customer for NetWeaver 7.0 (2004S), SAP ERP 6.0

#### Go-Lives (ERP):

Financials	live 02/2007
Human Capital Management	live 10/2007
Student Lifecycle Management - staged:	
Admissions	live 11/2008
Registration	live 05/2009
Student Accounting	live 07/2009
Financial Aid (Sigma ProSam)	live 02/2009

**ETL Tools:** SAP BW extractors

**Data warehouse:** SAP BW on AIX / DB2

**Go-lives (BW):** NKU began using BW 7.0 as a development platform the first day it was available to ramp-up customers (early 2006). BW implementations coincided with each of the ERP implementations.

BW for FI	live 02/2007
BW for HCM	live 10/2007
BW for SLCM - Staged:	
Admissions	live 11/2008
Registration	live 05/2009
Student Accounting	live 07/2009
Financial Aid (Sigma ProSam)	live 02/2009

**Reporting tools:** SAP BW Business Explorer (BEx) Web Analyzer is used by end users. The BI Development Team uses Business Explorer (BEx) Query Designer and Web Application Designer.

#### **Functional area(s) covered by BW**

BW reporting is available for the following areas:

##### SAP Financials:

Financials/Controlling (FI/CO), Materials Management (MM), Funds Management (FM), Grants Management (GM)

##### SAP Human Capital Management:

Personnel Administration (PA), Payroll (PY), Organizational Management (OM), Time Management (TM), Benefits (BN), Position Budgeting and Control (PBC)

##### SAP Student Lifecycle Management:

Admissions, Registration, Student Accounting, Financial Aid (data brought into BW from Sigma ProSam, which is a standalone application).

## 2. Project Details

**Project name:** PRISM (Process Re-engineering for Information Systems Management)

**Project status and timeline:** The PRISM project began in 2005 with the selection of SAP as the ERP and data warehousing platform. The project is officially ending 6/30/2010 and team members will assimilate back into the IT organization.

**Number of direct users:** Number of faculty/staff defined as BW users is approximately 1000+.

### 2.1. Project background

The NKU PRISM BI project was undertaken concurrently with our ERP implementations. We began our project in January of 2006 as a ramp up customer for SAP NetWeaver 2004s BI 7.0 (now referred to as NetWeaver 7.0 and BW 7.0). As we implemented each of our ERP systems (FI, HCM, SLCM), we also went live with the associated BW functionality. All BW development is done using 7.0 data modeling techniques – no development using 3.x techniques. All 3.x Datasources and InfoSources were converted to 7.0 versions. We also converted all 3.x Transfer Rules & Update Rules to Transformations and data is loaded by DTP. The campus community uses the SAP Portal to access their BW reports.

#### *Why we decided to implement a data warehouse*

Prior to the SAP PRISM project the university's reporting needs were delivered by running FOCUS against its legacy non-relational transactional systems. This presented numerous problems such as:

- Departments were creating standalone reporting databases which often produced unreliable results – no “single source of the truth”.
- Agreement on the meaning of many fields used in reports was lacking which caused confusion and inconsistency when supplying results to upper management.
- The creation of FOCUS reports was primarily the responsibility of IT developers and was a time consuming process that was not able to be done by the end user.

#### *Why we decided on BW*

BW was selected as our data warehousing platform because of its inherent integration with the SAP ERP systems. Other considerations were the value that Business Content could deliver in development savings as well as the potential for campus users to become more self-sufficient in creating and running their own reports.

#### *Who did the planning, implementation, and/or training*

The implementation of our BI project was conducted differently from our ERP implementations. For ERP we utilized implementation partners, but for BI we planned and managed the implementation internally. NKU leveraged its internal resources at NKU who had significant private sector project planning and data warehousing experience. A few NKU BI team members attended SAP BW training classes, but most of the current developers learned from reading books and on-the-job experience. NKU also contracted the services of a BW consultant who worked as a technical trainer and developer for the entire BW implementation.

#### *People involved in the BW project*

Bob Byles, PMP	SAP Development Manager
Andrei Grechko	Lead BI Solution Architect
Angela Calhoun	BI Developer
Michael Schuler	BI Developer
Kiran Mehendale	SAP BW Consultant

#### *What BW content we use and who uses it*

At this time the reporting made available to students is usually through ABAP Web Dynpro applications. Faculty and staff are the primary users of BW. To date all query development has been done by the BW team with users creating query-views, saving their reports in BEx Portfolio so they can be run at the client's convenience.

Number of Extractors: Master Data=238 Transaction Data=55

Number of Queries: 266

Number of DataStoreObjects: 150

Number of InfoCubes: 50

NKU also uses the Business Intelligence Integrated Planning (BIIP) component of BW.

#### *How we manage security with BW*

All queries are published and restricted by BW security roles, e.g. Financial Reports are published to FI Reports role, SLCM Reports could be published to any of the numerous SLCM roles, etc. Queries can be restricted in a number of different ways such as by Funds Center Hierarchy, Organizational Unit Employee/Instructor, or based on the Courses that a given instructor teaches in a semester (Course Evaluations)

NKU also utilizes BEx Portfolio functionality available through SAP Portal to share some of the frequently used query views and favorites with colleagues across the organization. BEx Portfolio has been structured to include several main areas (folders) such as Student Lifecycle Management, Human Resources, Financial Aid, Institutional Research, etc. The main folders in BEx Portfolio are further subdivided by Departments. Folder access administration is decentralized and controlled by Permission Owners within individual area.

#### *Future projects related to SLCM and BW*

NKU continues to expand the scope of its reporting capabilities in the area of Student Lifecycle Management (SLCM).

NKU has licensed SAP Business Objects and will begin this project the 2<sup>nd</sup> half of 2010. With this effort the university intends to produce more analytical and dashboard applications that will assist upper management with decision making and forecasting.

Link to documentation for BW

[http://it.nku.edu/myнку/training/BW\\_Training\\_Material.php](http://it.nku.edu/myнку/training/BW_Training_Material.php)

## 2.2. Examples from the BW Project

### Distribution of Grades

The BEx query below shows the distribution of grades by individual instructor (how many AS, BS, etc), or organizational unit (department/college) depending on the drilldown.

**Grade Distribution Report** Last Data Update: 04/30/2010 08:08:44

[New Analysis](#) [Open](#) [Save As...](#) **Display As** Table [Info](#) [Send](#) [Print Version](#) [Export to Microsoft Excel](#) [Comments](#) [Filter Settings](#)

**Columns**

- Key Figures

**Rows**

- Organizational Unit
- Instructor
- Grade

**Free characteristics**

- Academic level
- Academic Period
- Academic Session
- Academic Sub Session
- Academic Year
- Address/Phone/Email
- Appraisal completed
- Appraisal Remark
- Appraisal Status
- Appraisal type
- Booking date
- Booking reason
- Conditional Booking
- Course
- Course Section
- Delivery Mode
- Discipline
- Ethnic Origin
- Event
- Event Location
- Ext.W. or Qual Trnsf
- Fee Category
- Gender
- Permit Flag

Organizational Unit	Instructor	Grade	%	Student Count
		A	58.8 %	10
		A-	5.9 %	1
		B	5.9 %	1
		B+	5.9 %	1
		B-	17.6 %	3
		D	5.9 %	1
		<b>Result</b>	<b>100.0 %</b>	<b>17</b>
		A	24.3 %	9
		A-	13.5 %	5
		B	32.4 %	12
		B+	18.9 %	7
		C	5.4 %	2
		C+	5.4 %	2
		<b>Result</b>	<b>100.0 %</b>	<b>37</b>
		A	28.6 %	4
		A-	14.3 %	2
		B	14.3 %	2
		B+	14.3 %	2
		B-	7.1 %	1
		C+	7.1 %	1
		C-	7.1 %	1
		D+	7.1 %	1
		<b>Result</b>	<b>100.0 %</b>	<b>14</b>
		A	33.3 %	17
		A-	23.5 %	12

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The BEx query below is a summary-level report for academic Department Chairs and Deans where individual faculty/instructors can be compared to the academic department, college, and university.

Course Evaluations Summary				Last Data Update: 04/27/2010 13:36:06						
<a href="#">New Analysis</a> <a href="#">Open</a> <a href="#">Save As...</a>				Display As <b>Table</b> <a href="#">Info</a> <a href="#">Send</a> <a href="#">Print Version</a> <a href="#">Export to Microsoft Excel</a> <a href="#">Comments</a> <a href="#">Filter Settings</a>						
<ul style="list-style-type: none"> <li>▼ Columns               <ul style="list-style-type: none"> <li>▪ Course Evaluations</li> </ul> </li> <li>▼ Rows               <ul style="list-style-type: none"> <li>▪ Evaluation Question</li> <li>▪ Course Evaluations Structure</li> </ul> </li> <li>▼ Free characteristics               <ul style="list-style-type: none"> <li>▪ Academic Period</li> <li>▪ Academic Session</li> <li>▪ Academic Sub Session</li> <li>▪ Academic Year</li> <li>▪ Course Evaluation Re</li> <li>▪ Date</li> <li>▪ Employee</li> <li>▪ Event</li> <li>▪ Event Package</li> <li>▪ Module</li> <li>▪ Object Type</li> <li>▪ Organizational Unit</li> <li>▪ Principal Discipline</li> <li>▪ Superior Org Unit</li> </ul> </li> </ul>	8	How well was the course content outlined in the syllabus cov	Faculty	5	1.3	13	3.4	65	17.2	
				Discipline	5	1.3	13	3.4	65	17.2
				Department	9	1.4	25	3.8	99	15.2
				College	24	1.0	75	3.0	326	12.9
				University						
		9	How challenging was this course?	Faculty	79	20.9	157	41.5	131	34.7
				Discipline	79	20.9	157	41.5	131	34.7
				Department	86	13.2	213	32.8	303	46.6
				College	182	7.2	647	25.6	1,496	59.3
				University						
		10	How much do you think you have learned in this course?	Faculty	14	3.7	41	10.8	103	27.2
				Discipline	14	3.7	41	10.8	103	27.2
				Department	20	3.1	63	9.6	172	26.3
				College	79	3.1	199	7.9	544	21.5
				University						
		11	What is your overall evaluation of this course	Faculty	26	6.9	48	12.7	113	29.9
			Discipline	26	6.9	48	12.7	113	29.9	
			Department	34	5.2	73	11.2	180	27.6	
			College	102	4.0	177	7.0	569	22.5	
			University							

### 3. Areas of difficulty or pain points

When we began our BW project as a BW 7.0 ramp up customer with no prior SAP experience, it was very difficult to get training. The SAP BW classes that were available to us were all BW 3.x. When BW 7.0 became available for ramp up customers even the SAP BW instructors did not know how the new BW 7.0 authorizations worked. At that time all the books on BW were written for 3.x. With the help of our BW consultant, who was experienced in BW 3.x, we gradually came up to speed but the experience was not pleasant.

One area we are stilling struggling with, especially for Student Lifecycle Management, is how to keep all members of the campus community (faculty and staff) informed about what queries are available, which queries to use for one's information needs, when new reporting features are made available, etc. Communication across the various colleges, departments and administrative areas is very difficult. We have tried campus wide emails, web postings, blogs, news letter, attending various meetings of different organizational areas on campus – but none of these methods has proven very effective. We have found communicating query specific information before the campus community has a need to use it does not work. Our next attempt at a more viable solution has us developing a custom web application (BW Query Directory & Data Dictionary) that will allow our users to pull the information at the time they have a need to use it. We are in the process of developing an automated process which extracts data from the BW system tables and populates a non-SAP database which is used by the custom application. We are hoping this approach improves the ability for our users to be more self-sufficient in determining which queries and fields are available to accommodate their reporting needs.

## **Outcomes of the BW Project**

Given the fact that data warehousing and the concept of multi-dimensional reporting is new to NKU, the campus is slowly adapting to the organizational change caused by SAP ERP and the new reporting environment. With the implementation of SAP BW the campus now has a common, campus wide set of agreed upon data definitions. BW is eliminating the need for departments to feel the need to maintain their own standalone reporting databases and look to BW as the “single version of the truth”. Campus users can now run their own reports and no longer need to submit IT Service Requests to satisfy this need.

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## Related Contents

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For more information, visit the [Higher Education & Research homepage](#).

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