



### Seattle Public Schools Establishes National Model For At Risk Student Reporting Infrastructure

In 2009, Seattle Public Schools received a grant from the Gates Foundation to build an Academic Data Warehouse (ADW), one of the core components of the district's five-year strategic plan. The challenges of creating an information system infrastructure that operated more efficiently and accessibly were complex and analytically demanding. A legacy system needed to be retired, new technologies, processes, and skills introduced, and different projects coordinated across resources and departments.

"We felt that an outside firm with experience in data warehousing and business intelligence best practices could assist us in moving forward with grant implementation, particularly because of the technical background, methodology, and processes required to deliver these kinds of systems," said Sue Wright, CIO for Seattle Public Schools.

"Brainbox's proposal outlined an implementation roadmap for the ADW that made sense, including the logical steps to success and a realistic timeline from ground zero to a fully functioning, state-of-the-art business intelligence infrastructure," said Sue. "Breaking the initiative into pieces, explaining the value each dataset would have, getting the district and individual users excited about the reports that could be produced, Brainbox helped us set the ADW project up for success."

Creating a consolidated view of student school assignments, grades, and numerous stores of related district data was a core part of the ADW project. Providers—including principals, school administrators, teachers, and community-based organizations (CBOs)—had a difficult time getting access to basic student information. Information was inconsistent, varied in latency, and distributed across multiple applications. Creating a centralized, intuitive store of data would make it possible to perform simple functional tasks more effectively and to begin to realize some of the school district's strategic goals.

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"There is a commitment within Seattle Public Schools, as well as a movement nationally, to use data to make decisions about students, schools, and programs," said Pegi McEvoy, Assistant Superintendent of Operations for Seattle Public Schools. "The work we have done to build a scalable, usable Academic Data Warehouse is a model for other schools. We have created a system where we can easily change algorithms to respond to more current research on data segmentation as it becomes available."

The data warehouse draws together current and historical information from the district's diverse systems, integrating instructional management data, academic data, and the district's existing student informational system. Consolidated data is accessible through a SharePoint intranet portal that makes it possible to gauge what events have taken place, where trends are taking the district, at what rate, and with what likely outcome. This is a major shift towards a more mature informational structure that meets real daily needs of the district and its stakeholders.



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#### **About Seattle Public Schools**

Seattle Public Schools is the largest K-12 school system in Washington State, serving more than 49,870 students in 95 schools. We have a staff of about 8,000 which includes about 3,100 teachers. About 227 of the teachers are Nationally Board Certified. We are focused on improving academic achievement for all students and committed to ensuring that all students graduate from high school prepared for college, careers, and life. We strive to provide excellent teachers in every classroom, set high expectations for every student, meet the needs of our diverse learners, and prepare our students to excel.

**Please visit [seattleschools.org](http://seattleschools.org) for more information.**

With the Academic Data Warehouse in place, Seattle Public Schools was able to leverage the High School Grant Initiative to identify and focus on at risk students.

“We wanted a report that showed teachers and other providers at-a-glance what was going on with a student so they could immediately start helping them,” said Sue. “Our focus in the past had always been on longitudinal data, such as ‘how have we done over the last seven years.’ The ADW provided data that we could act on that day that would make a difference in a student’s life. Brainbox helped us to clearly understand the power of the ADW they helped us build and the data sets we were putting into it to catch student risk before it was too late to do anything about it.”

**Seattle Public Schools • Academic Data Warehouse**  
STUDENT501 - Student Profile - SMP High School  
NOT FOR PUBLIC RELEASE - INTERNAL USE ONLY

**Sample S. Student (8888888) - 11th** 999-999-9999

**Student Information** High Risk

Age: 17  
Date of Birth: 01/01/1996  
Race / Ethnicity: SMP  
Gender: M  
Homeless: N  
Primary Language: English  
Home Language: English

Confidential: N  
ELL Eligible: N  
ELL Served: N  
IEP Eligible: Y  
504 Student: N  
Advanced Learning: N

**Academic Standing** Low Risk

High School Grad Credits: 20.100  
Cumulative GPA: 2.8149  
Projected Graduation Year: 2015  
Previous Year June 1 Grade: 11th  
Current Year October 1 Grade: 11th  
Graduation Status: Off-Track  
Grade Repeat: None

**Courses Taken** Medium Risk

Year	Term	Description	Interim	Final
2012 - 2013	Term 2	SMP1234 - SMP Govt & Econ	—	B
2012 - 2013	Term 2	SMP1004 - SMP Lang Art	—	A
2011 - 2012	Term 4	SMP6143 - SMP Math	—	P
2011 - 2012	Term 4	SMP9213 - SMP Horticulture	—	A
2011 - 2012	Term 4	SMP1414 - SMP Lang, Art Rem	—	C
2011 - 2012	Term 4	SMP1212 - SMP History	—	D

**State Assessments** High Risk

Test Season	Assessment	Level	Score	Met Standard
Spring 2012	HSPE - SMP - Reading HS	L2	380	N
Spring 2012	HSPE - SMP - Writing HS	L3	19	Y
Spring 2012	RE1 - SMP Retake	L1	360	N
Spring 2011	GEO - SMP Geo	L1	366	N
Spring 2009	WASL - SMP Reading 8	L1	345	N

**Discipline** High Risk

Offense Date	Disciplinary Action	Discipline Offense
2013-04-26	SMP Action Taken	SMP4 - SMP Offense
2013-03-05	SMP Action Taken	SMP3 - SMP Fighting Offense
2013-03-01	SMP Action Taken	SMP1 - SMP Disruptive
2013-02-13	SMP Action Taken	SMP4 - SMP Offense
2013-01-17	SMP Action Taken	SMP4 - SMP Offense

**Enrollment History**

School	Enrollment Dates
SMP High School 1	09/05/2012 - present
SMP High School	09/08/2010 - 07/13/2012
SMP High School 2	09/09/2006 - 08/01/2010
SMP Alt School	09/06/2006 - 09/07/2006

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Terminology | Questions and Support | ADW Feedback

The district did have a secondary school risk assessment report that was available to providers but it was too long, the data was manually collected, and it was hard to read and use effectively. Plus it only came out quarterly and wasn't usually available until two months after the quarter ended.

“The existing risk report was pages long, evaluated students on a 0 – 23 scale, was hard to understand and even more difficult to work with,” said Pat Sander, Interim Executive Director of Coordinated School Health Services. “Working directly with principals and other providers we identified requirements for a single, information rich, user friendly student summary that would be useful to many people. We

asked, ‘what data sets do we need to identify the students that were over-aged and under-credited?’ Brainbox developed a strategic report creation framework with an individual student’s single page profile in the middle. Much of our time was spent identifying the information categories that needed to be addressed on the single profile, and how the datasets could be delivered through the ADW.”

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A handout was developed to review profile requirements with providers, including the characteristics they would look for when identifying students at risk in terms of attendance, behavior, and performance. There was inconsistency across the district regarding at risk student identification and support. Some schools had already developed their own version of a one page student profile. Others didn't have the means to use data in any way.

“Brainbox helped us think outside the box regarding the use of data and then develop a very complex at risk student report model that was simply and elegantly presented so everyone, at all levels, could wrap their heads around what we were trying to achieve,” said Pegi. “We can now use accurate, timely, and accessible data about at risk students and many other performance indicators, to inform how we evaluate, invest in, and sustain programs. Having access to accurate data through the ADW has been a game changer for us.”

“Making the transition from being data rich/information poor to information rich has been revolutionary for us, and can be for other schools districts,” said Pat. “There is tremendous power in being able to access a report with data as recent as that day and immediately know what can be done to prevent something from happening with a student versus having to intervene when it might be too late.”

**“Brainbox helped us to clearly understand the power of the ADW they helped us build and the data sets we were putting into it to catch students at risk before it was too late to do anything about it.”**

As with most data warehousing and business intelligence projects, data quality and accuracy was a major issue for Seattle Public Schools.

“The ADW helped us overcome organizational challenges regarding data quality, accuracy, and consistency” said Sue. “Our data isn’t big, but it is complicated. This means that a single term, such as a ‘school,’ could mean a number of different things— one building, multiple buildings, multiple schools in one site, or even a program such as Headstart. Brainbox led us through a data stewardship initiative through which we developed common definitions that were then applied across the data, and the district. This may sound like a simple thing but it took a lot of work and has been tremendously powerful—knowing that when you use a term everyone is on the same page regarding what it means.”

With the ADW in place and a framework for identifying and delivering complex sets of information in a simple, highly usable manner, Seattle Public Schools is well positioned to use data to demonstrate to all stakeholders the efficacy of district and third party programs.

“Over the next five years, as we focus on equity issues, the ADW will help us put in the right interventions, determine how well they are doing, and see what is working much more quickly than we have in the past when it might have taken several years to gather and evaluate the data,” said Sue. “With the limited resources we have available to us, the ability to turn outcomes around is going to have a tremendous positive impact on our students and community.”

### About Brainbox Consulting

Brainbox Consulting is a Seattle-based business intelligence consulting firm, specializing in delivering business intelligence solutions that step you through a minefield of decisions—and costs. Since 2005, we’ve helped companies like *Iron Mountain*, *Seattle Public Schools*, *Premiera BlueCross*, *Blucora*, and many other organizations:

- Develop a strategic direction for organizing and delivering business intelligence solutions
- Implement scalable, state-of-the-art data warehouse and reporting architecture
- Find answers to the hard—and deceptively simple— questions that have eluded them
- Define and communicate the language of their business
- Identify and report on data that solves real business problems
- Train teams in Kimball data warehousing and business intelligence best practices

Problem solvers. Strategic doers. Bridge builders. Brainbox Consulting keeps your project on track and your team focused on the intelligent pursuit of information.

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