

# Software Research Associates Tohoku chooses IBM DB2 9 with pureXML™ for UniVision+EV system

## *Facts*

**ISV:** SRA Tohoku Inc. <http://www.sra-tohoku.co.jp/>,

**Customer:** University of Miyazaki, <http://www.miyazaki-u.ac.jp/>

**Location:** Tokyo, Japan

**Industry:** Software

**Products:** IBM DB2 9 with pureXML™

## *Executive Summary*

Educational laws in Japan require colleges and universities to be evaluated every seven years by external institutions approved by the government. SRA Tohoku is an ISV that includes DB2 9 pureXML™ with its “UniVision+EV” system, which is used by educational institutions to store and manage diverse information about their operations, achievements, equipment and facilities. This information serves a variety of purposes, including reports for university assessment & analysis. University of Miyazaki is one of the first to deploy UniVision+EV based on DB2 9 pureXML.

## *Introduction*

There's an open discussion in Japan these days regarding the effectiveness of public universities, the value of university management systems and the usage of taxes to support institutions of higher education. Japan has established a public, independent organization to explore these topics, and each university must report its activities, contributions, and effectiveness to this organization on a regular basis. Consequently, each university needs a system to store and manage its diverse achievements in education and research projects so that this information can be analyzed for evaluation.

Software Research Associates (SRA) Tohoku Inc. sells its “UniVision+EV” product as a University appraisal database system. This product provides a web browser-based interface for users to log, search, and analyze school activities and achievements.

## *Challenge*

The evaluation criteria and assessment data are different in each university and change over time. For example, if the university specializes in scientific education, it may be evaluated by the number of published academic papers or patents. By contrast, if the university specializes in the arts, it may be evaluated based on exhibitions, performances, publication of fictional works, etc.

*“Each university has to manage and report its achievements in detail for assessment. For instance, dissertations written by professors, contents of award winning articles, and lectures delivered at international conferences are examples of achievement of the university. Information about student administration, school facilities, and equipment is also considered in the assessment of a university. Additionally, a University of Art is evaluated by its creativity in sculptures, music, and paintings rather than dissertations or research results,”* explains Mr. Katsuyoshi Hongou, SRA Tohoku Inc. Solution Division business strategy group manager, on the complexity and diversity of how universities are evaluated.

“UniVision+EV” must hold various types of data required by different offices and departments within each university as well as from different universities. *“We had to consult with several departments at the universities such as administration office, registration and entrance exam office, and had to make various adjustment to the database since there were a lot of different requirements,”* said Mr. Hongou.

Initially, UniVison developers spent considerable time and money to design a system based on each university’s needs that could be changed frequently. This involved a lot of “trial and error” as they employed a relational database design that made it difficult to add or remove evaluation criteria. If new items were needed after some usage, the relational schema and applications had to be modified. One of the major issues was to reduce the cost and time to customize the product based on specific needs from universities. This customization is needed so that each university can capture its uniqueness to differentiate itself from other schools during the assessment.

*“In its early development, ‘UniVision+EV’ system was built on a [non-DB2] relational database. At that time, we tried to design relational tables based on detailed design considerations, but this method didn’t meet the universities’ needs for customization. And they wanted to use the system as soon as possible,”* said Mr. Hongou.

Indeed, university personnel wanted to add new data fields in just one day. UniVision developers realized that XML database management technology could provide the required flexibility of removing and adding tags for quick and easy customization. SRA Tohoku Inc. then considered an emerging XML database system in Japan. Although this product supported the required functionality, it was too expensive and would impact the total price of “UniVision+EV”. Then, DB2 9 was chosen instead.

## ***Solution***

SRA Tohoku Inc. sought an inexpensive and robust database system with efficient support for XML data. They tested DB2 9 pureXML and observed performance behavior that exceeded their expectations. *“The reason we picked DB2 9 is its pureXML support, high performance and low price,”* said Mr. Hongou.

With DB2 9 as the back-end database, the “UniVision+EV” system was installed at the University of Miyazaki in October 2006 as a pilot program for the staff and professors. Since then, University of Miyazaki has continuously modified and customized the system by adding its unique assessment information and started full-scale production use in January 2007. The university staff was surprised how easy they could customize the system and are now also evaluating DB2’s XML database capabilities also for other information management needs.

Mr. Hongou explains: *“Before we used an XML database, users had to give up new requirements due to a burden of customization work. But now, they don’t have to. New requirements can be easily realized without requiring database and SQL skills. This case exactly proved it. I expect more universities will start using UniVision+EV as database skill and knowledge is no longer required to customize it.”*

### ***Benefits of DB2 pureXML***

- Low cost and high performance XML database
- Flexible for easy and quick customization
- Short development time and low cost for implementing a flexible information system

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