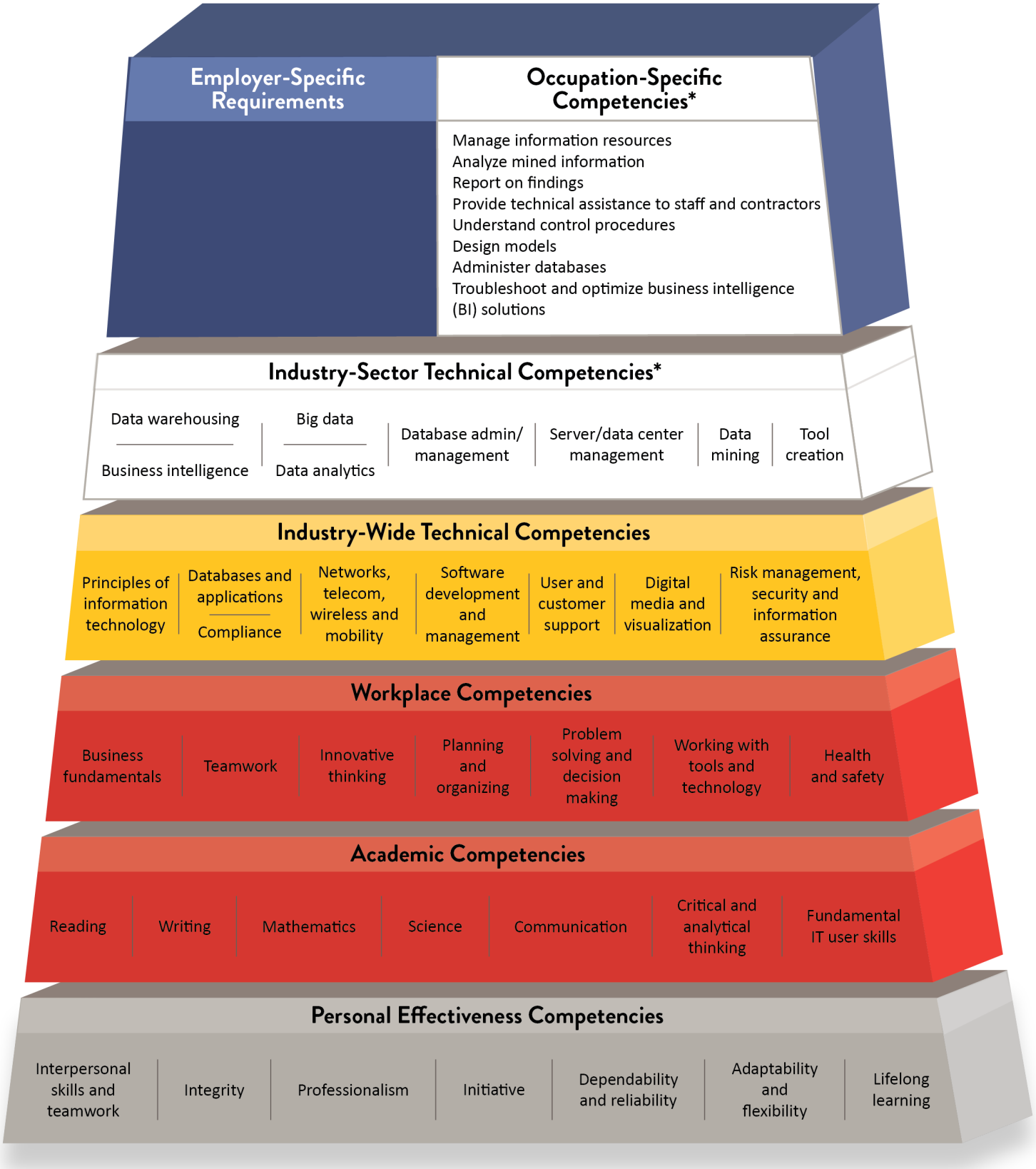
Minnesota Dual-Training Pipeline

Competency Model for Information Technology
Occupation: Business Intelligence Developer/Architect



Based on: Information Technology Competency Model, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/information-technology.

Competency Model for Business Intelligence Developer/Architect

Business Intelligence Developer/Architect – An individual responsible for developing, deploying, and maintaining business intelligence interfaces. Often, they create tools or troubleshoot current methods to improve the company's information technology processes. They translate highly technical language and complex information for others in the organization to understand.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

Industry-Sector Technical Competencies

Related Instruction for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee's current or intended occupation.

- **Data warehousing** – Understand the system used for reporting and data analysis; often central repositories of integrated data from one or more disparate sources. Data warehouses store current and historical data and are used for creating analytical reports for knowledge workers throughout the organization.
- **Business intelligence** – Know how to use a set of techniques and tools for the acquisition and transformation of raw data into meaningful and useful information for the purposes of business analysis (sometimes referred to as "data surfacing").
- **Big data** – Know how to interpret data sets that are so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying and information privacy.
- **Data analytics** – Understand a set of tools and the process used to inspect, clean, transform, and model data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making.
- **Database administration/management** – Be able to master the use of specialized software to store and organize data. This work may include capacity planning, installation, configuration, database design, migration, performance monitoring, security, troubleshooting, back-up, and data retention.

- **Server/data center management** – Understand the key tasks associated with protecting data from security breaches.
- **Data mining** – Understand the computational process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems.
- **Tool creation** – Design and build custom business intelligent tools, dashboards, and reporting systems using platforms like Power BI, Tableau, and more.

Occupation-Specific Competencies

On-the-Job Training is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Manage information resources** – Operate with a cycle of organizational activity, including acquisition, compilation, organization, distribution, and disposition through archival or deletion.
- **Analyze mined information** – Know how to review and interpret information collected from one or more sources.
- **Report on findings** – Be able to interpret and compile information to share with end business users and colleagues in the information technology field.
- **Provide technical assistance to staff and contractors** – Know how to provide advanced customer service to end business users and associates/team members.
- **Understand control procedures** – Be able to demonstrate proficiency and interpretation of controls used to collect, analyze, and protect data.
- **Design models** – Know how to design complex data models to support reporting and analytics while ensuring accuracy.
- **Administer databases** – Understand how to oversee data integrity by implementing security protocols and optimizing information storage.
- **Troubleshoot and optimize business intelligence (BI) solutions** – Know how to identify performance constraints, resolve data inconsistencies, and refine dashboards to enhance reliability, scalability, and user experience.

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