Kuliah-5&6 Kesiapan SDM Dalam Intelijen Bisnis dikaitkan dengan AI dan IB
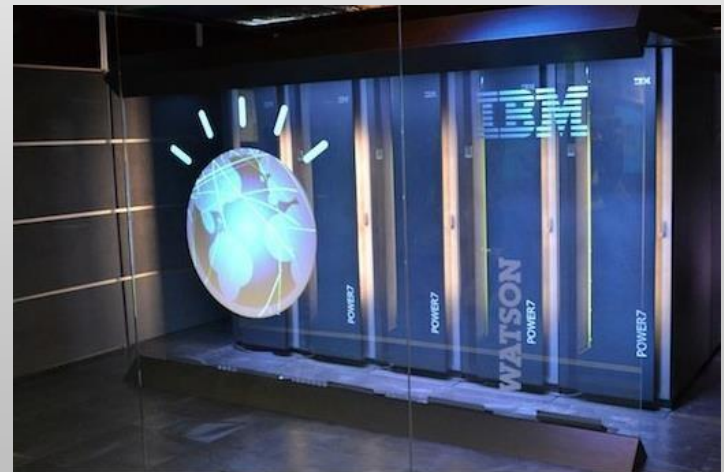
Intelligent systems Artificial intelligence (AI)

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INTRODUCTION TO INTELLIGENT SYSTEMS

Business Applications – IBM's Watson

EXPERT SYSTEMS

Expertise & Expert systems (ESs)

TABLE PI4.2 Ten Generic Categories of Expert Systems

Category	Problem Addressed
Interpretation	Inferring situation descriptions from observations
Prediction	Inferring likely consequences of given situations
Diagnosis	Inferring system malfunctions from observations
Design	Configuring objects under constraints
Planning	Developing plans to achieve goal(s)
Monitoring	Comparing observations to plans, flagging exceptions
Debugging	Prescribing remedies for malfunctions
Repair	Executing a plan to administer a prescribed remedy
Instruction	Diagnosing, debugging, and correcting system performance
Control	Interpreting, predicting, repairing, and monitoring systems behavior

EXPERT SYSTEMS:
EXPERTISE TRANSFER FROM HUMAN TO COMPUTER

Four Activities Involved:

- **Knowledge acquisition**
- **Knowledge representation**
- **Knowledge inferencing**
- **Knowledge transfer**

INTELLIGENT AGENTS

Assists in performing repetitive tasks which use expert systems and fuzzy lo to create a seemingly intelligent behav (aka "Bots")

INTELLIGENT AGENTS: EXAMPLES

– **Information Agents**

– **Monitoring-and-Surveillance Agents**
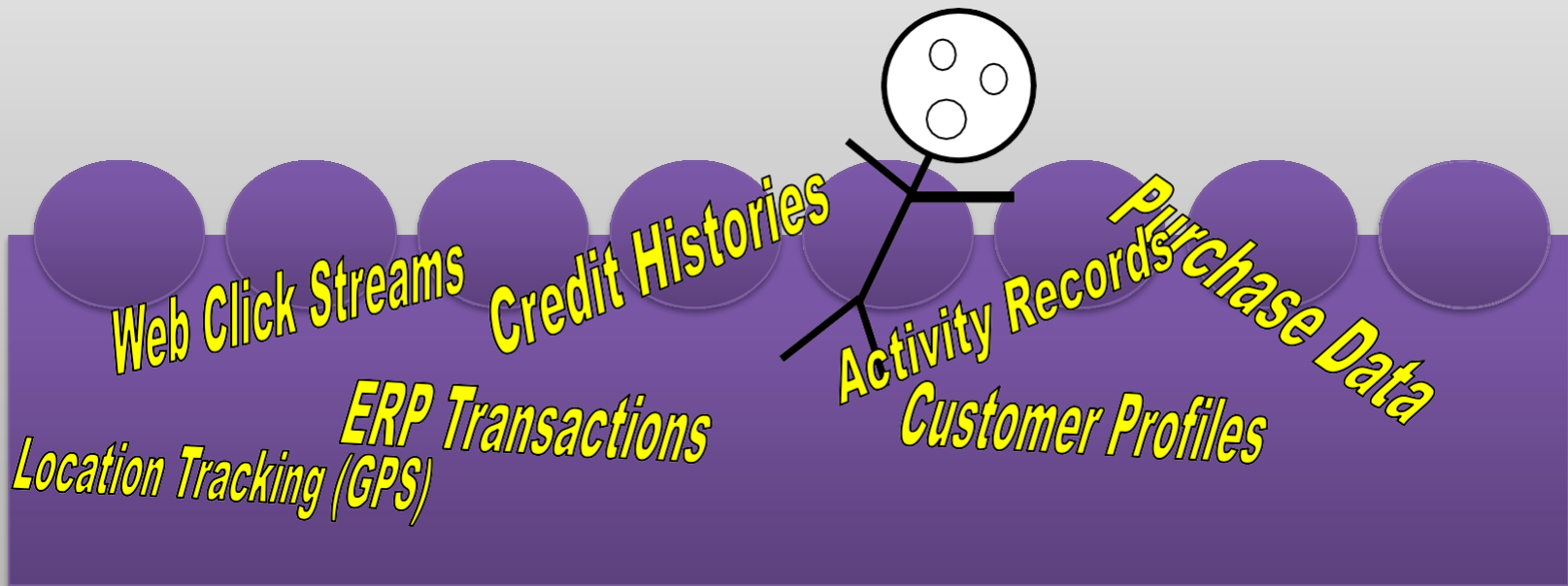

– **User Agents**

TECH GUIDE REVIEW

Differentiate between artificial intelligence and human intelligence.

Define expert systems, and provide examples of their use.

ORGANIZATIONS ARE DROWNING IN DATA…

- … but lacking in information / knowledge
- Our ability to collect and store data seems to have surpassed our ability to make sense of it!
- Important trends:
  - Storage capacity continues to rise rapidly
  - Cost of storage continues to drop

Web Click Streams

Credit Histories

Activity Records

Purchase Data

ERP Transactions

Customer Profiles

Location Tracking (GPS)

WHAT IS BUSINESS INTELLIGENCE?

A Simple Definition: The applications and technologies transforming Business Data into Action

Fact-based decision making typically involves a subset of the following skills/tools…

- Data querying / SQL
- Database design / data warehousing
- Data mining
- Decision support systems / simulations
- Data visualization / Dashboards

The BI goal

BI is about using data to help *enterprise users* make better *business decisions*

BI / ANALYTICS IN ALL INDUSTRIES

- A few examples
  - Pro Sports
    - Oakland A's, New England Patriots – recruiting players
    - Dallas Cowboys – merchandising
  - Gambling
    - Harrah's → Caesar's
- Quote from Intel manager:
  - "In God we trust, all others bring data"
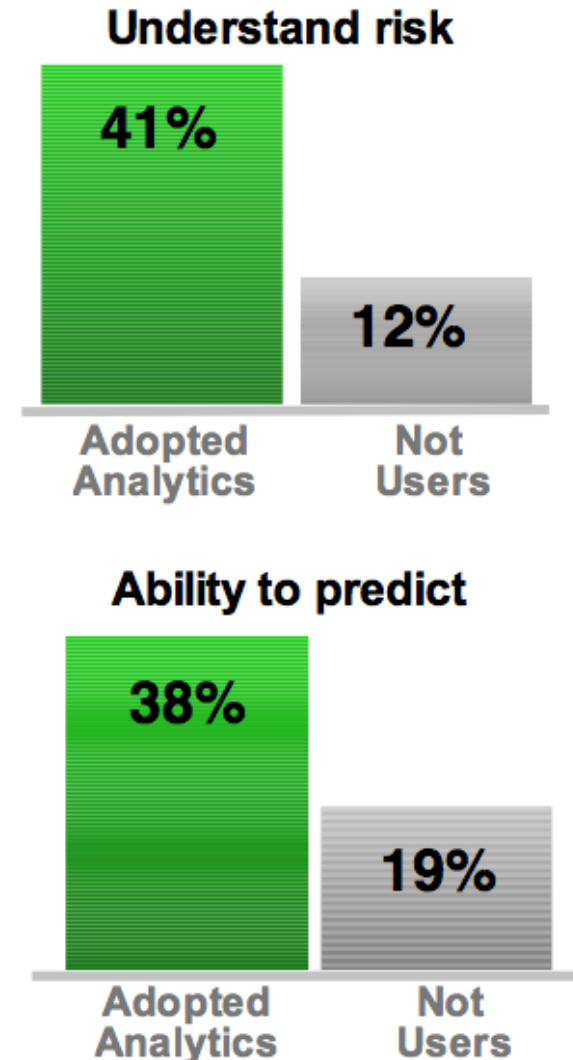   - Demming

MANAGERS VALUE ANALYTICS (SURVEY)

3 in 4
business leaders say more predictive information would drive better decisions

2 in 3
business leaders see the opportunity to leverage information and are just beginning to act

1 in 5
business leaders haven't thought about how to use information for new advantages

Understand risk

- Adopted Analytics: 41%
- Not Users: 12%

Ability to predict

- Adopted Analytics: 38%
- Not Users: 19%

A SAMPLE OF ORACLE BI CUSTOMERS

EXEC SURVEY: WHAT KEEPS YOU UP AT NIGHT?

Severity: Low (1) → Very High (5)

Probability / Frequency of Occurrence: Low (1) → Very High (5)

Legend:
- SC Fragmentation (31%)
- Lack of Global Project Resources (12%)
- 1. Collaboration & BI (10%)
- 1. Commodity Price Increase (10%)
- 1. Global Competition (10%)
- 1. Power Shift (8%)
- Developing SCM Talent (7%)
- 1. Regulatory Compliance (7%)
- IT Integration (5%)
- IP (2%)
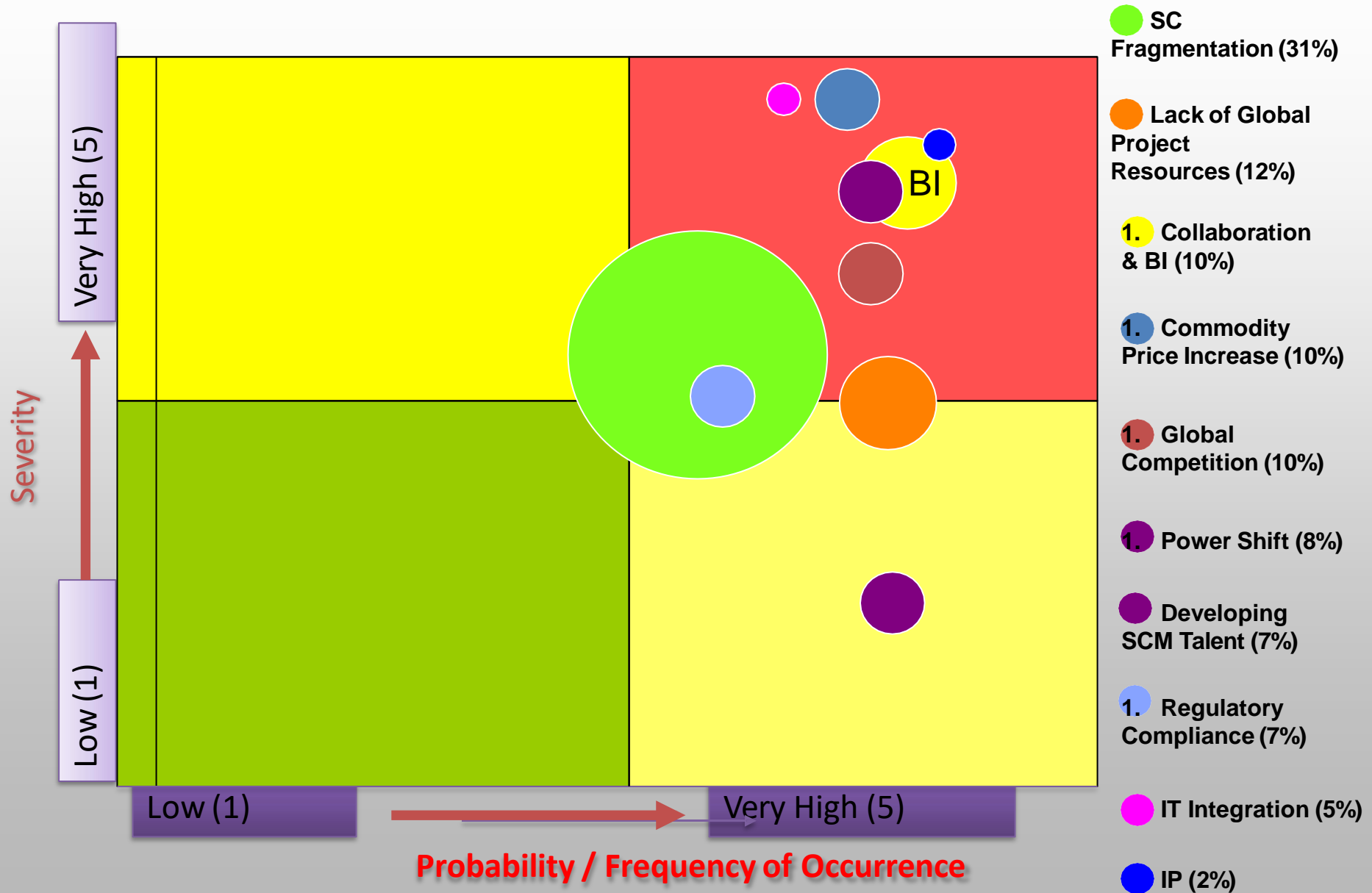
DATA / INFORMATION / KNOWLEDGE

- **Data** – a collection of raw value elements or facts used for calculating, reasoning, or measuring.

- **Information** – the result of collecting and organizing data in a way that establishes relationship between data items, which thereby provides context and meaning

- **Knowledge** – the concept of understanding information based on recognized patterns in a way that provides insight to information.

FAMOUS "BEER AND DIAPERS" BI EXAMPLE

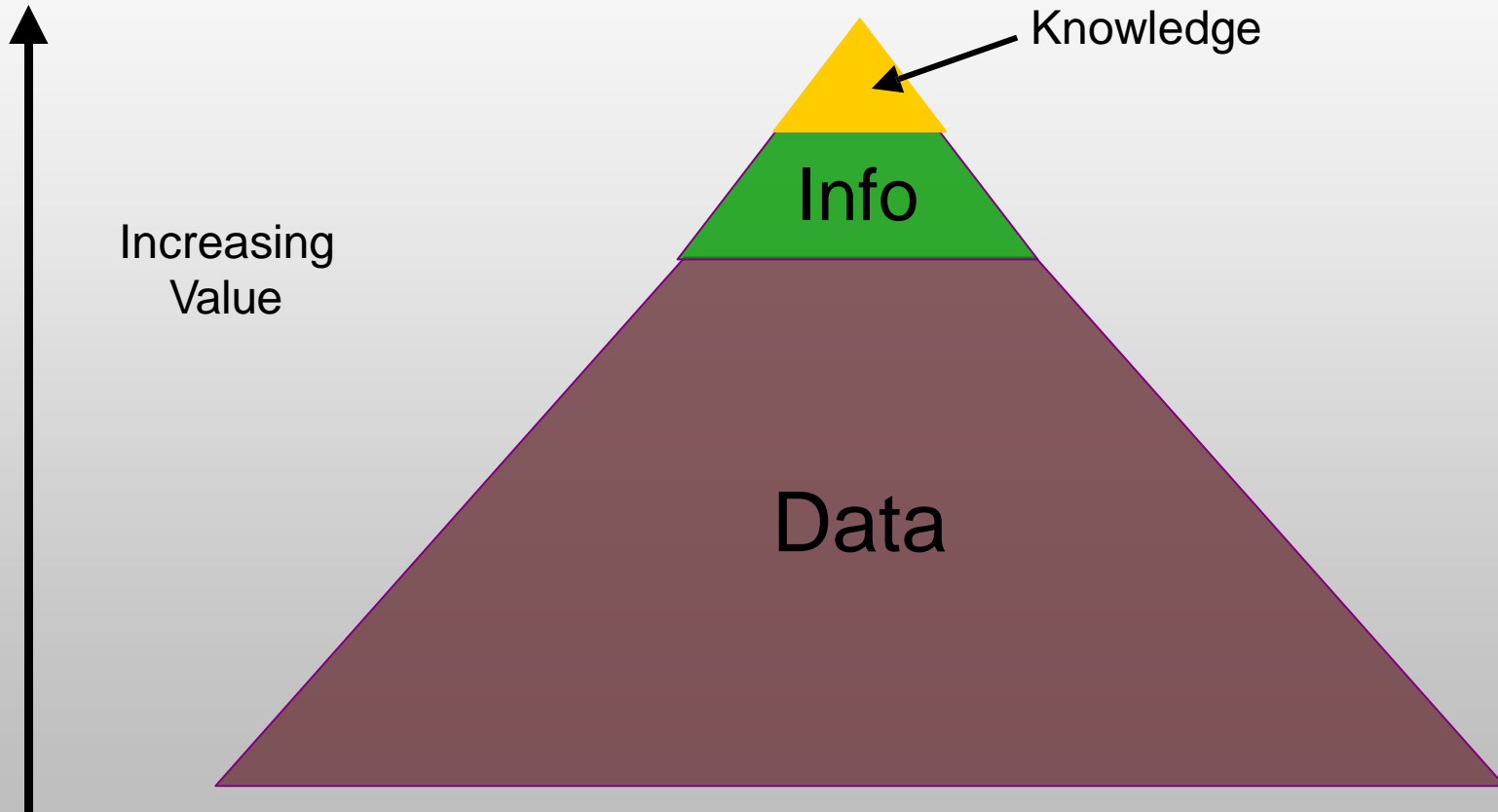- Consider the follow convenience-store transactional data (register sales receipts)

	C	D	E	F	G	H	
	Date	Day	SKU-1	Units Sold-1	SKU-1	Units Sold-2	
	1/9/10	Tue	D177	59	B675	202	
	3/1/10	Thu	D177	124	B675	361	
	1/30/10	Tue	D177	60	B675	180	
	1/27/10	Sat	D177	168	B675	306	
	2/22/10	Thu	D177	161	B675	422	
	3/2/10	Fri	D177	59	B675	151	
	2/5/10	Mon	D177	70	B675	168	
	1/5/10	Fri	D177	73	B675	224	
	2/23/10	Fri	D177	97	B675	279	
	2/28/10	Wed	D177	76	B675	198	
	3/4/10	Sun	D177	97	B675	179	
	1/6/10	Sat	D177	137	B675	341	
	2/18/10	Sun	D177	54	B675	200	
	1/26/10	Fri	D177	50	B675	203	
	1/14/10	Sun	D177	73	B675	298	
	1/25/10	Thu	D177	149	B675	288	
	1/11/10	Thu	D177	165	B675	319	
	2/3/10	Sat	D177	182	B675	420	
	2/2/10	Fri	D177	56	B675	291	
	2/17/10	Sat	D177	139	B675	293	
	1/7/10	Sun	D177	68	B675	210	

FAMOUS "BEER AND DIAPERS" BI EXAMPLE

- What did managers learn? That beer & diapers are often bought by men on Thursday and Saturdays.   Why?
- Data → Information → Knowledge (Insight)

GOAL: CONVERT DATA TO (ACTIONABLE) KNOWLEDGE