

DECISION SUPPORT SYSTEM, BUSINESS INTELLIGENCE AND PROJECT KNOWLEDGE MANAGEMENT

KETAN JOSHI

KEY POINTS FOR DISCUSSION



Decision Making



Decision Support
System



Business
Intelligence



Knowledge
Management
Tools



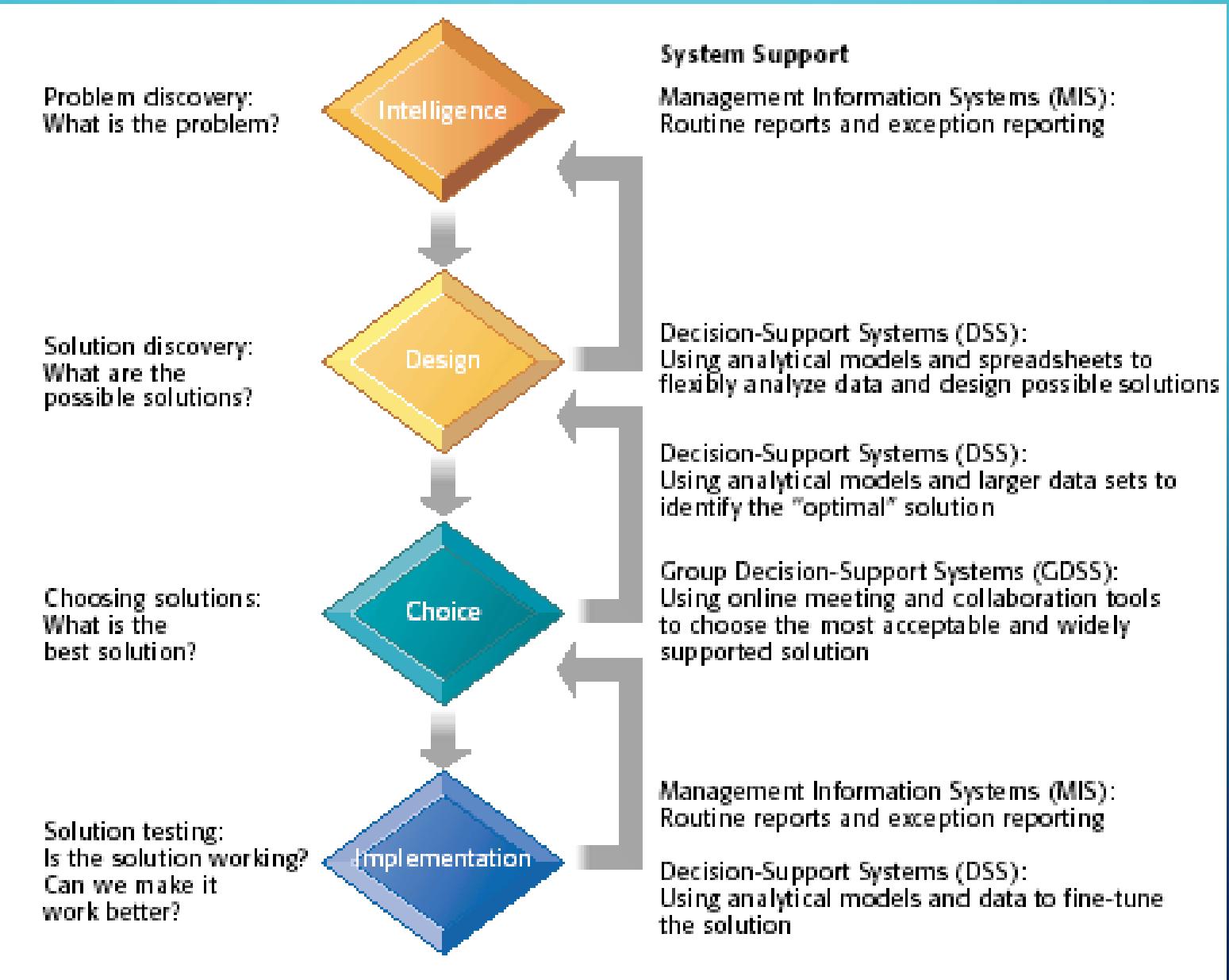
Benefits of
Knowledge
management



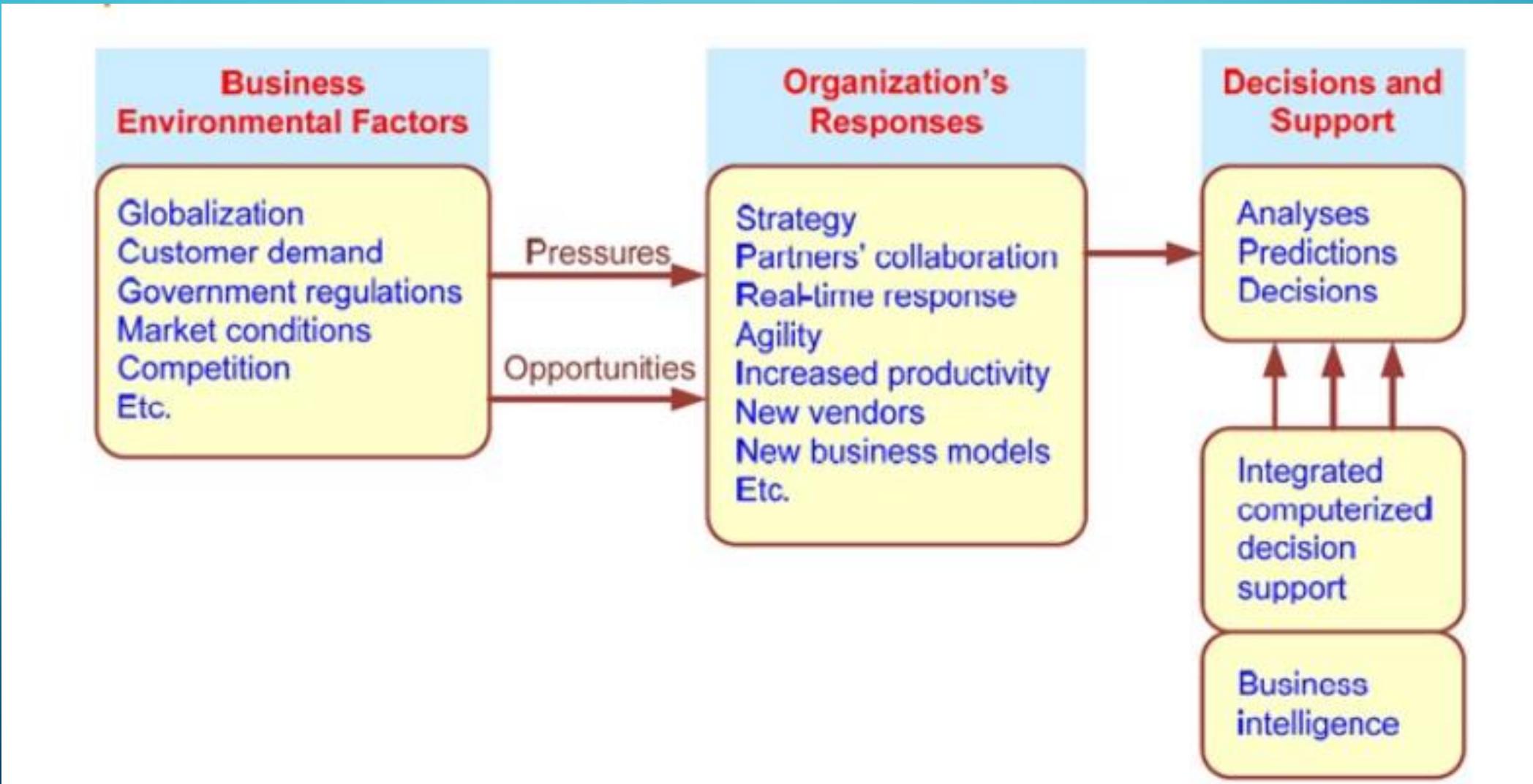
DECISION MAKING

- Process of Decision Making
 - Define the problem (i.e., a decision situation that may deal with some difficulty or with an opportunity).
 - Construct a model that describes the real-world problem.
 - Identify possible solutions to the modeled problem and evaluate the solutions.
 - Compare, choose, and recommend a potential solution to the problem.

STAGES IN DECISION MAKING



COMPONENTS OF DECISION MAKING





DECISION- MAKING LEVELS

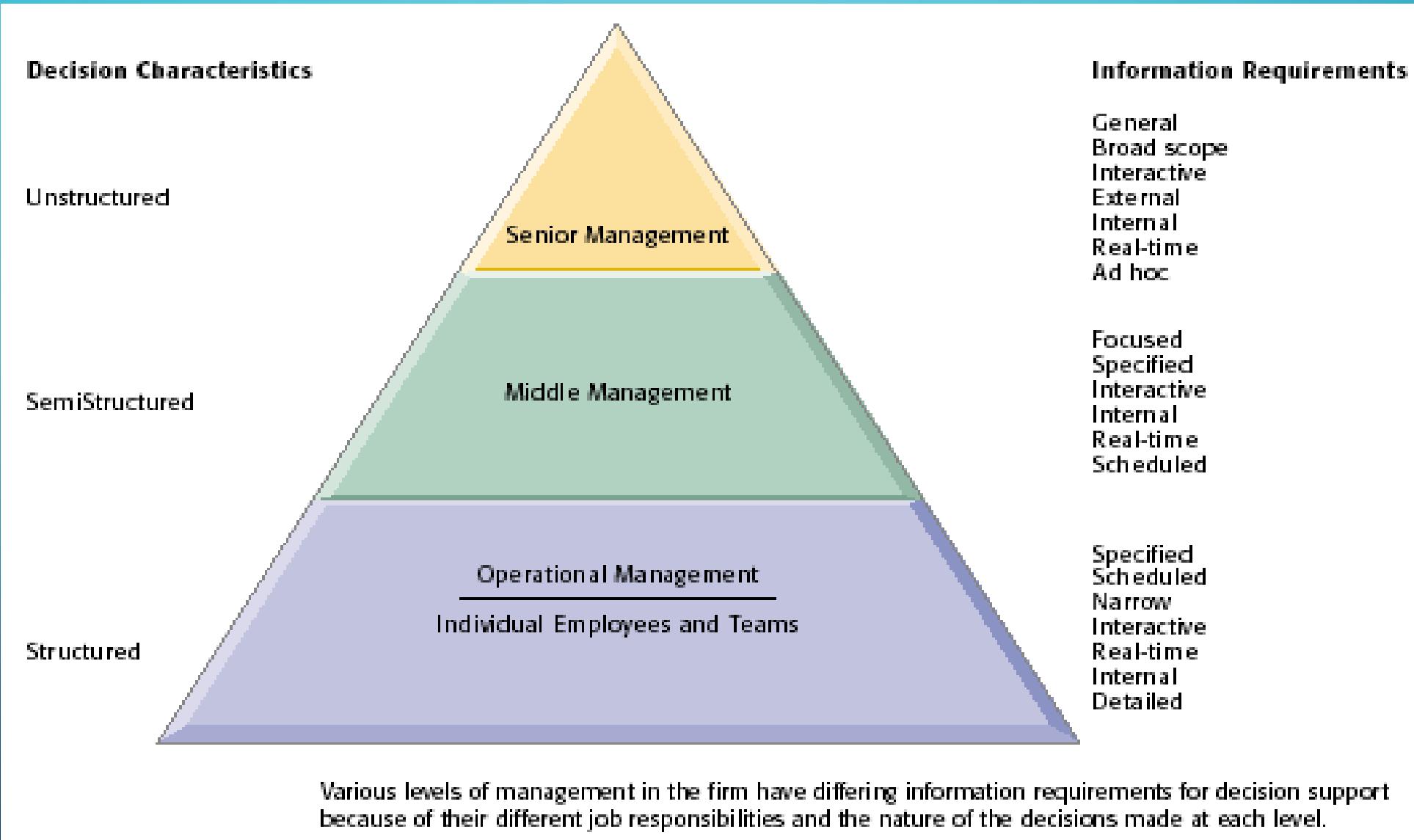
- Senior management
- Middle management and project teams
- Operational management and project teams
- Individual employees



DECISION MAKING IS DIFFICULT

- Technology, Information Systems, Advanced search engines, and globalization result in more alternatives to choose from
- Government regulations and compliance, Political instability, competition and changing consumer demands produce more uncertainty, making it difficult to predict consequences and future
- Need to make rapid decisions, frequent and unpredictable changes that make trial-and-error learning difficult, and potential costs of making mistakes

INFORMATION REQUIREMENTS OF KEY DECISION-MAKING GROUPS IN A FIRM



TYPES OF DECISIONS

Structured decisions:

- Routine decisions with definite procedures
- Examples: Restock inventory; determine special offers to customers

Semi-structured decisions:

- Only part of decision has clear-cut answers provided by accepted procedures
- Examples: Allocate resources to managers; develop a marketing plan

Unstructured decisions:

- Novel, non-routine decisions requiring judgment and insights
- Examples: Approve capital budget; decide corporate objectives

TYPES OF DECISION AND CONTROL

Type of Decision	Type of Control			
	Operational Control	Managerial Control	Strategic Planning	
Structured	Accounts receivable Accounts payable Order entry	1 Budget analysis Short-term forecasting Personnel reports Make-or-buy	2 Financial management Investment portfolio Warehouse location Distribution systems	3
Semistructured	Production scheduling Inventory control	4 Credit evaluation Budget preparation Plant layout Project scheduling Reward system design Inventory categorization	5 Building a new plant Mergers & acquisitions New product planning Compensation planning Quality assurance HR policies Inventory planning	6
Unstructured	Buying software Approving loans Operating a help desk Selecting a cover for a magazine	7 Negotiating Recruiting an executive Buying hardware Lobbying	8 R & D planning New tech. development Social responsibility planning	9



SYSTEMS FOR DECISION SUPPORT

- Management Information Systems (MIS)
- Decision-Support Systems (DSS)
- Executive Support Systems (ESS)
- Group Decision-Support Systems (GDSS)

THE DIFFERENCE BETWEEN MIS AND DSS

Management
Information
Systems:

Decision Support
Systems:

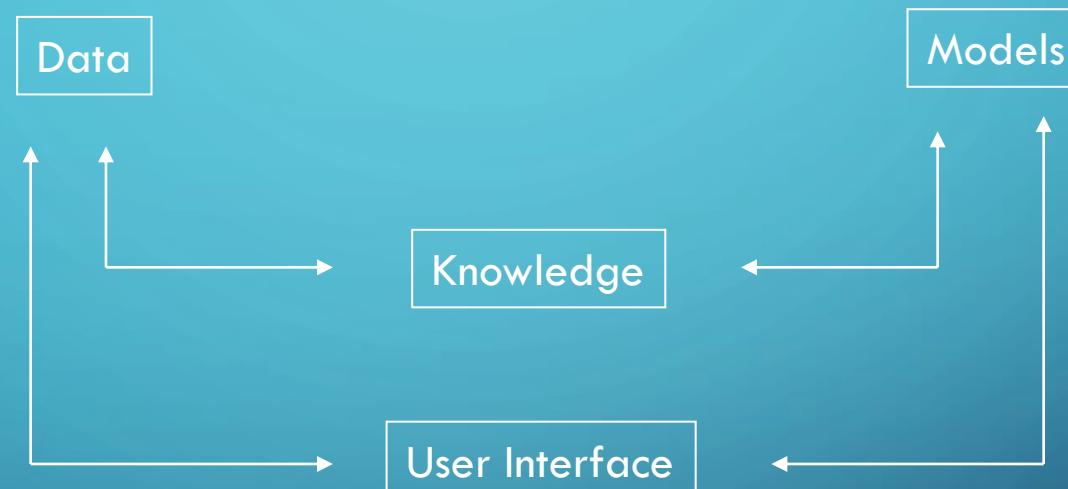
- Primarily address structured problems
- Provides typically fixed, scheduled reports based on routine flows of data and assists in the general control of the business
- Support semi-structured and unstructured problems
- Greater emphasis on models, assumptions, ad-hoc queries, display graphics
- Emphasizes change, flexibility, and a rapid response



DECISION SUPPORT SYSTEMS

- Definition I (Keen and Scott-Morton):
 - Decision support systems couple the intellectual resources of individuals with the capabilities of the computer to improve the quality of decisions. It is a computer based support system for management decision makers who deal with semi-structured problems.
 - Example – Organization wide Knowledge management system

HIGH-LEVEL ARCHITECTURE OF DECISION SUPPORT SYSTEMS (DSS)

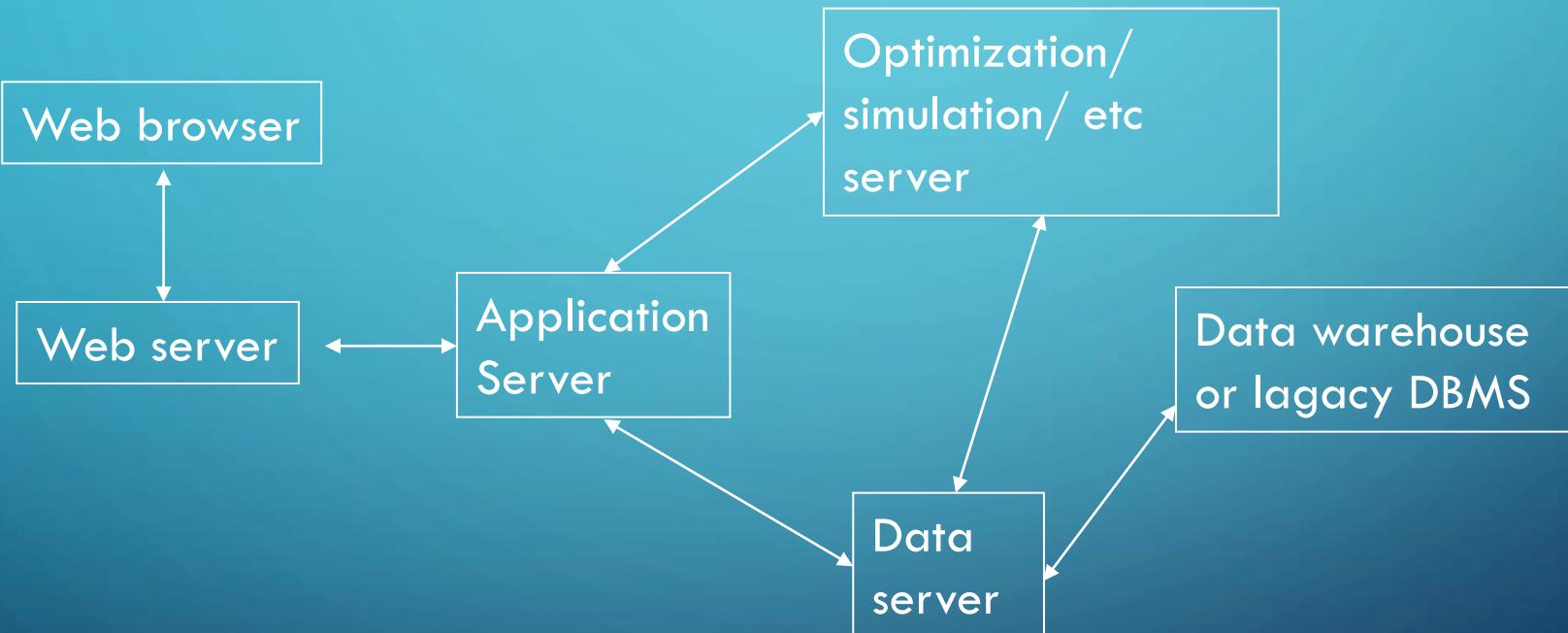




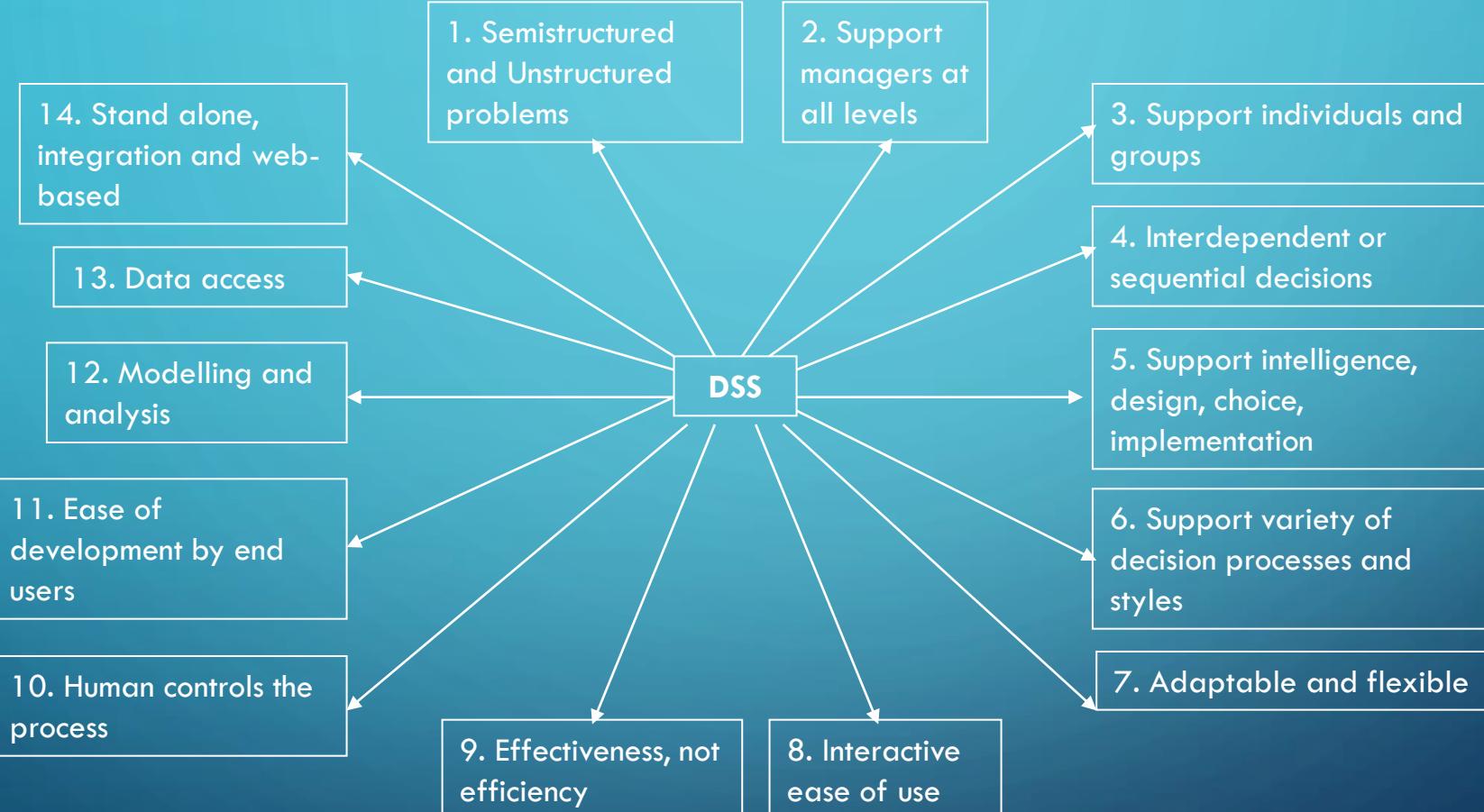
COMPONENTS OF DSS

- **Data Management Subsystems:** include Database management system (DBMS) and dataware house
- **Model Management Subsystems:** include financial, statistical, forecasting, what-if, management science, or other quantitative models that provide the analytical capabilities (also called model base management system MDMS)
- **User Interface Subsystems:** include graphical user interface (GUI) that allows users to communicate with the system.

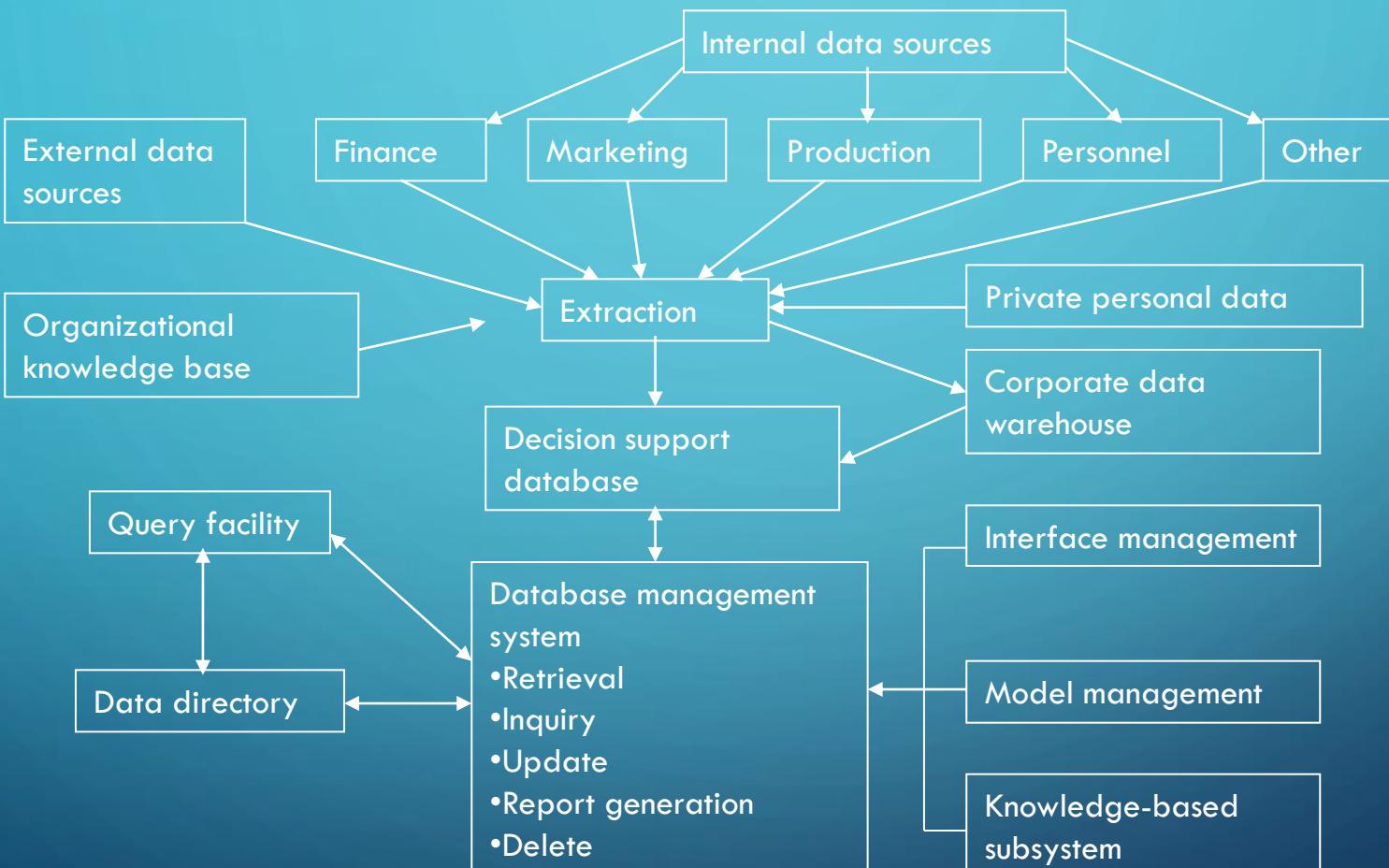
MULTITIERED ARCHITECTURE OF DSS



KEY CHARACTERISTICS AND CAPABILITIES OF DSS



THE STRUCTURE OF THE DMS





WHY WE USE COMPUTERIZED DSS?

- Speedy Computations
- Improved Communication and Collaboration
- Increased Productivity of Group members
- Managing giant warehouses
- Quality Support
- Agility Support
- Anywhere, anytime Support
- Overcoming cognitive limits in processing and storing information

DECISION MAKING IN THE REAL WORLD

In the real world, investments in decision-support systems do not always work because of:

- **Information quality:** Accuracy, integrity, consistency, completeness, validity, timeliness, accessibility
- **Management filters:** Biases and bad decisions of managers
- **Organizational inertia:** Strong forces within organization that resist change



WHY BI?

- Business environment is becoming more and more complex and rapidly changing, making decision making more difficult
- Must respond and adapt by making faster and better decision
- Intuition may not be enough, hence computerized systems are required with more meaningful data analysis.

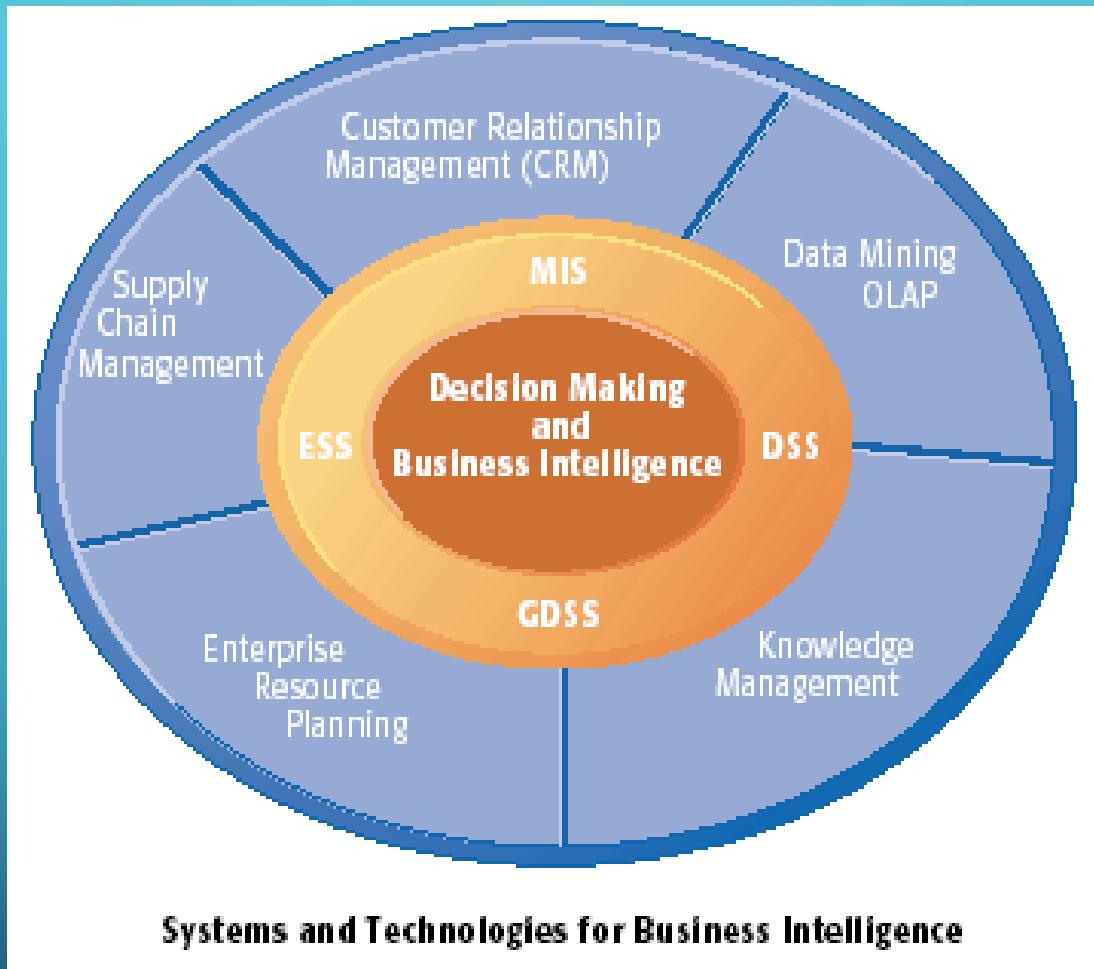
WHAT IS BI?

- Use of DSS moved from specialists to managers and then whomever, whenever, wherever
- Business Intelligence is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information used to enable more effective strategic, tactical and operational insights and decision-making.
- Objectives of BI:
 - To enable interactive access to data
 - To enable manipulation of data
 - To give managers and analysts the ability to conduct appropriate analysis
- Enabling tools like OLAP, Data warehousing, Data mining, Intelligent systems delivery via Web technology have collectively led to term BI

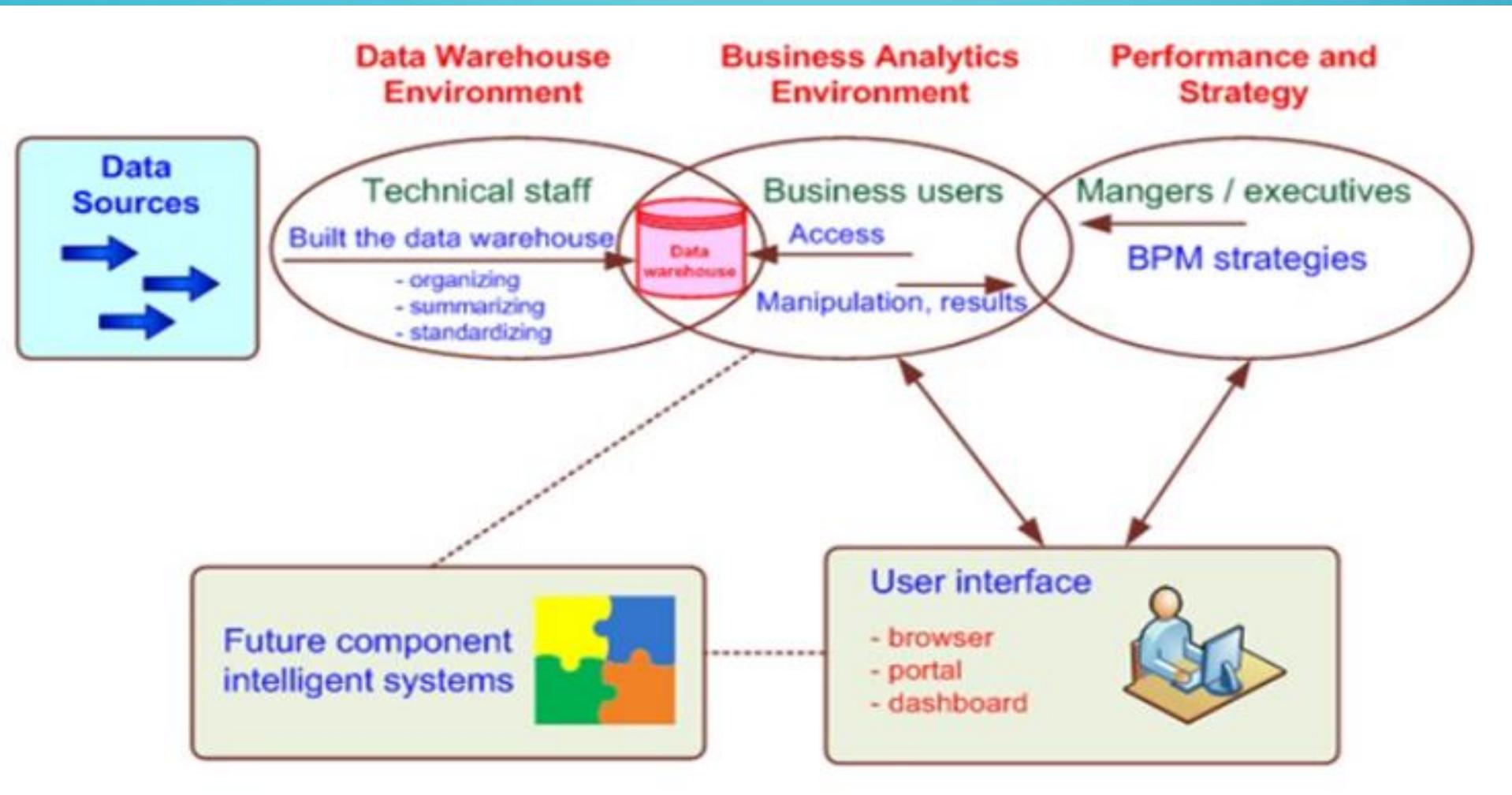
BUSINESS INTELLIGENCE ENABLES FIRMS TO:

- Amass information
- Develop knowledge about operations
- Change decision-making behavior to achieve profitability and other business goals
- Transform data, to information and knowledge to decisions and finally into meaningful and timely action

SYSTEMS AND TECHNOLOGIES FOR BI



HIGH LEVEL BI ARCHITECTURE



COMPONENTS OF BI SYSTEM

- Data Waterhouse: Source Data
- Business Analytics: a collection of tools for manipulating, mining, and analyzing the data in the data warehouse
- Business performance management: For monitoring & analyzing performance
- User Interface: Dashboard & other information broadcasting tools

BENEFITS OF BI

- Faster, more accurate reporting
- Improved decision making
- Improved customer service
- Increased revenue
- Time saving
- Single version of the “truth”
- Better strategies and plans
- More efficient processes
- Cost saving

BI OVER DSS



Similar architecture because BI evolved from DSS



BI has an executive and strategic orientation while DSS is oriented towards analysts

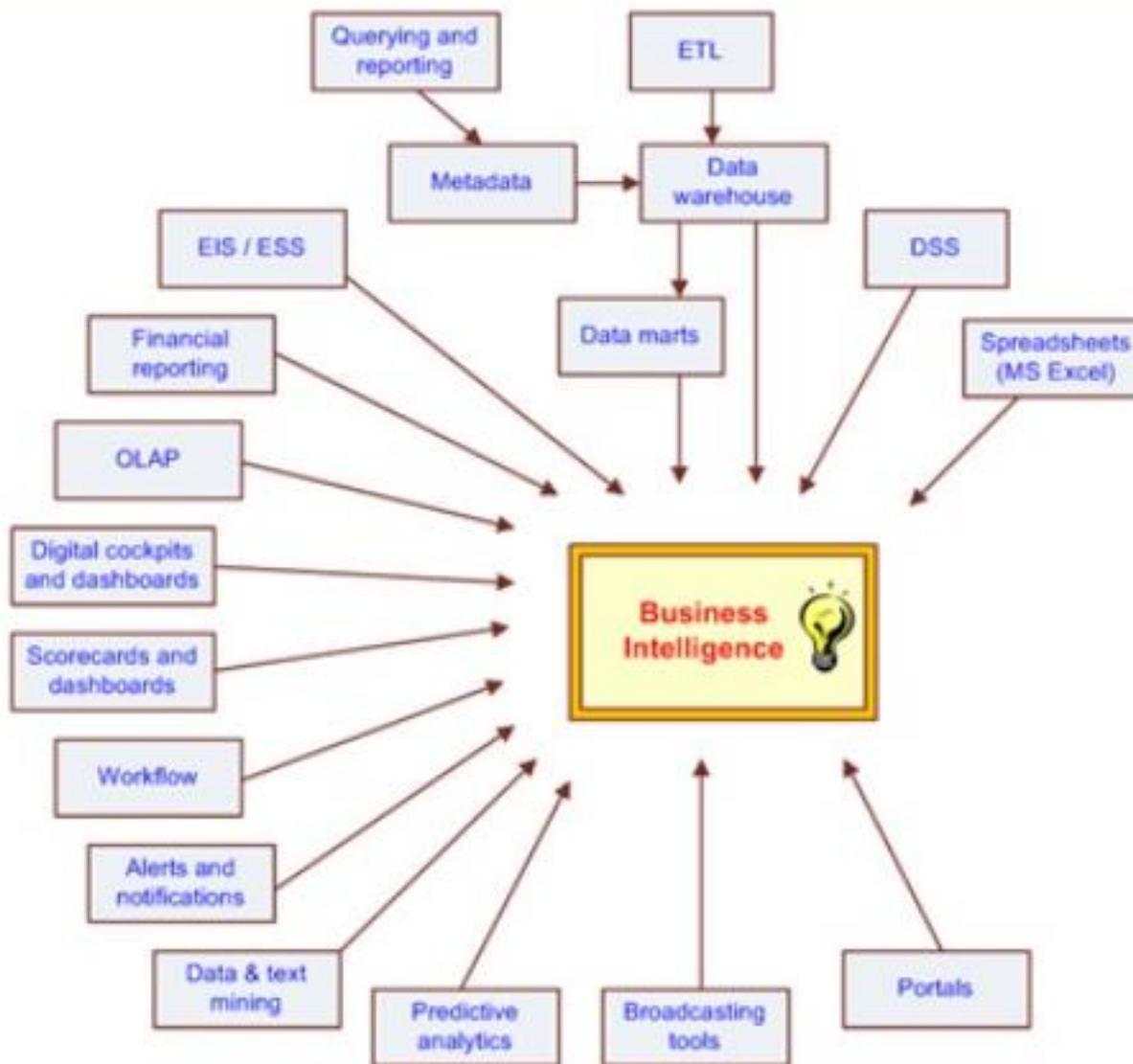


BI are constructed with commercially available tools & components while DSS is constructing solutions to unstructured problems



DSS were mostly used in academic world. BI is developed mostly by software companies and used in many commercial applications

The Evolution of BI Capabilities



KNOWLEDGE MANAGEMENT

What is Knowledge management?

What does the Knowledge management process include?

Use Cases & Best practices

Tools for Knowledge management

Benefits of Knowledge management

WHAT IS KNOWLEDGE?



Data

Raw material

Has no meaning on its own



Information

Manipulated Data

Organized Data



Knowledge

Processed Information

Understanding of someone/something

The Nature of Knowledge

Explicit
[clear]

Easier to document and share

Contributes to efficiency

Easier to replicate

Leads to competency

Tacit
[implied]

Harder to articulate

Higher competitive advantage

Harder to steal

Harder to transfer

20%

80%

WHAT IS KNOWLEDGE MANAGEMENT?

- Knowledge Management is about making knowledge available for everyone in the team, instead of having it reside in the heads of few people and causing knowledge bottlenecks.
- Knowledge Management includes necessary systems and tools for creating effective knowledge management processes.
- It is a combination of people, processes and tools.
- Per Bill Gates, “Knowledge management is nothing more than managing information flow, getting the right information to the people who need it so that they can act on it quickly.”





KNOWLEDGE MANAGEMENT - CONTINUED

Knowledge management is generally considered to be a source of considerable financial benefit for organizations.

Project teams can benefit from the creation and re-use of knowledge, including from the lessons learnt that should be documented during project closure.

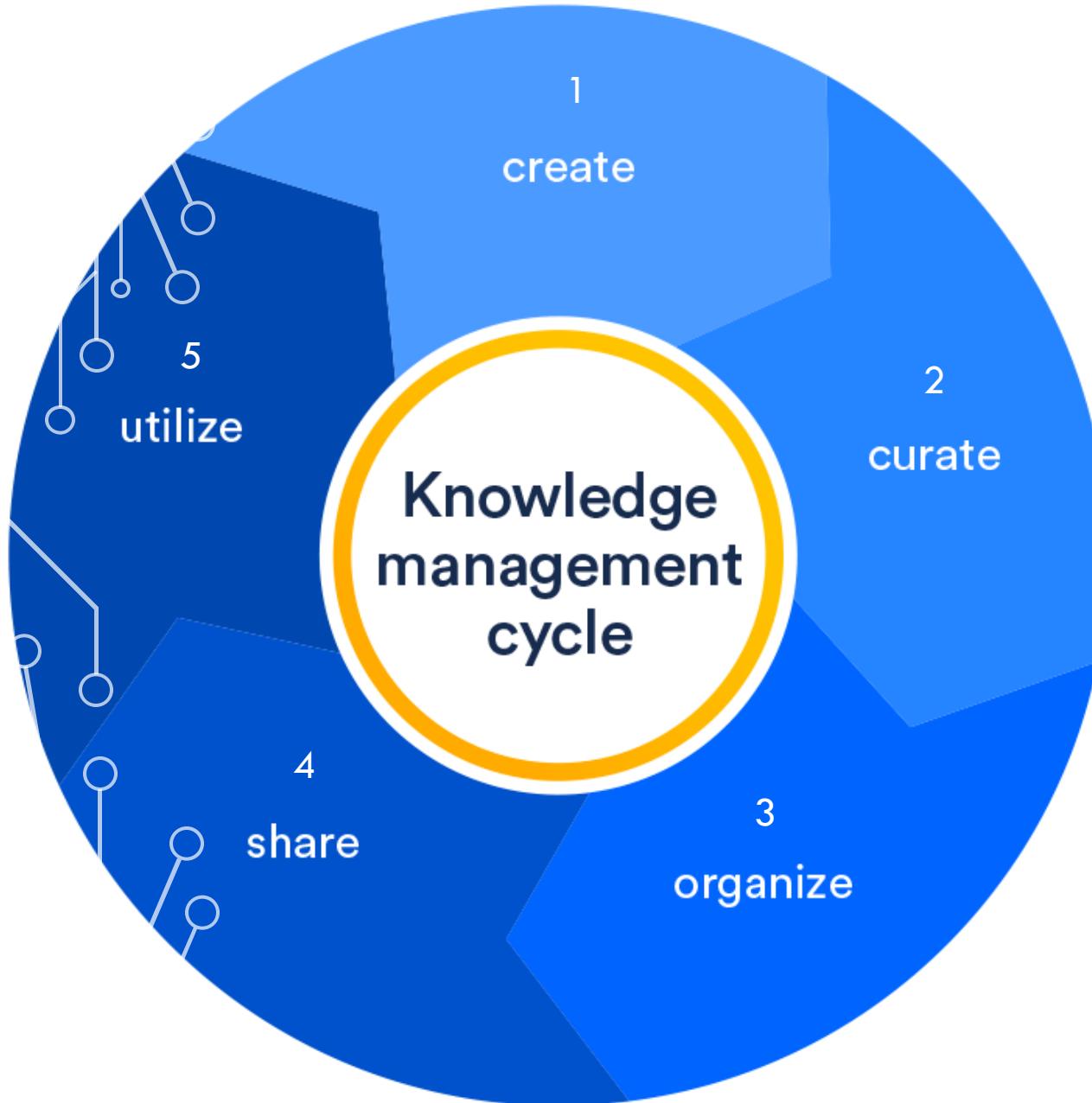
Projects face specific challenges (limited time spans, changing and dispersed teams) and the knowledge management helps reduce project risk, time and cost.



WHY IS IT SO IMPORTANT?

Knowledge management is so important that 95% of CEOs consider it a critical part of their company.

A **McKinsey Global Institute Report** indicates that a robust knowledge management system can reduce information search time by as much as 35 percent and raise organization-wide productivity by 20 to 25 percent. Findings culled from the International Data Corp also corroborate the value of a knowledge management system, highlighting that Fortune 500 companies lose roughly \$31.5 billion a year **by failing to share knowledge.**



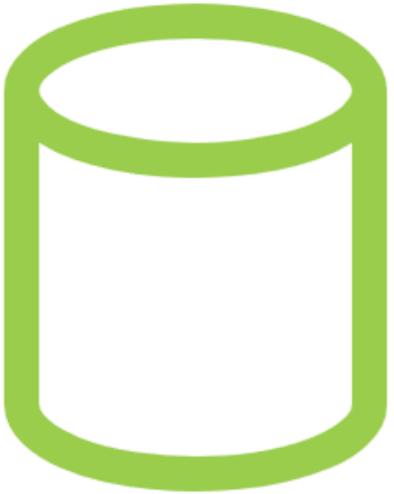
KNOWLEDGE MANAGEMENT PROCESS

Knowledge management is the process of registering, presenting, and using information. It encompasses both internal and external data; aiming to increase value and reduce expenses at the same time.

CREATING

Organizations should identify and record the knowledge that they want to disseminate across the company. Knowledge should be written down and adapted in a form that will be suitable for the target audience. You need to liaise with subject matter experts to capture knowledge that resides in their heads and turn it into content that can be made available for anyone in the company.

ORGANIZING



Once you have gathered the necessary information you need to store it in a way that makes sense for your chosen IT system. Knowledge may need to be formatted in a way that meets the requirements for your system. During this stage you will be uploading your content to your Knowledge Management system and organizing it into categories ready for consumption.



SHARING

A Knowledge Management system is no good if nobody can find it. You need to share your knowledge across email, collaboration systems, intranets and so on. If you see somebody asking a question that could be answered by your Knowledge management system, then make a point to share the relevant article.

ANALYZING

Over time, you need to analyze whether your content is working or not. You can look at search results to see terms that are returning no entries and create relevant content to fill the gap. You can identify articles that are not being used and delete them and take note of any comments your audience has left to update articles.





OPTIMIZING

This is the stage where you act on your analysis. You need to keep current articles up-to-date and plug any knowledge gaps with new content. Actively solicit feedback from your users about how your Knowledge Management system is working and highlight any areas for improvement. It should always be evolving to keep pace with the changing knowledge in your organization.

WHAT IS INCLUDED IN A KNOWLEDGE MANAGEMENT SYSTEM?

Standard operating procedures – a set of instructions explaining how to complete a particular task, process or procedure

Documentation – information relating to your product, service, or company

HR policies – a set of guidelines explaining the policies of your company

Academies and training programs – a set of tutorials and lessons that train employees in a particular area

Webinars – recorded video sessions on a given topic

WHAT KIND OF INFORMATION IS CAPTURED IN KM?

Documents

- > Company handbooks
- > Benefits breakdown
- > Product FAQs
- > Holiday calendars

Organizational Data

- > Org charts
- > Procurement flows
- > Individual contract information
- > Office location and contact info
- > Brand information

Team Data

- > Strategy
- > Competitor briefs
- > Product development timelines
- > Presentation tactics
- > Works in progress
- > Best practices

Organizational News

- > Company media mentions
- > Information technology (IT) updates
- > All-hands updates
- > Upcoming promotions
- > NPS scores and insights
- > Promotion updates



TYPICAL DOCUMENTS FOR SOFTWARE PROJECT

- Product requirement document
- User Experience design documentation
- Software architecture design document
- Functional specification document
- Quality assurance documentation (Unit / Integration / Performance Testing)
- Maintenance and help guide
- API documentation

TYPICAL TOOLS FOR KNOWLEDGE MANAGEMENT

Confluence

Document360

Sharepoint

ConcordNow

Docebo

ServiceNow



USE CASE - EMPLOYEE ONBOARDING

New hires need to access a lot of information quickly in order to get up to speed with their new role at the company. A Knowledge Management system can provide the answers to their questions and ensure that everyone is singing from the same hymn book from their first day.

A research has calculated that it takes **two years** (that's not a typo) for a new employee to become “fully productive”.



USE CASE - PRODUCT ONBOARDING



Customers need a way to learn your product from scratch and a Knowledge Management system can be a great way to onboard new customers. It can teach them the ins and outs of product features and the ways that your product is intended to be used.



USE CASE - TEAM COMMUNICATION

When you're providing a centralized space for employees to post announcements, and ask and answer questions, you are improving team communication. Instead of trawling through emails or old chat threads, employees can simply check the Knowledge Management system for the latest updates.



CLIENTS LOVE AUTONOMY

According to a recent Gartner prediction, by the end of this year, nearly 90% of the customer relationship will take place without any human interaction. The take-away from that? The people you're selling goods and services to are happy to find answers themselves. In fact, they prefer it!

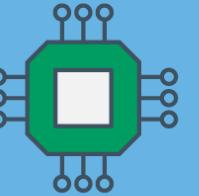
Enabling your customers to easily answer their own questions via self-service portals means faster transactions and more importantly, a better customer experience.



BENEFITS

- Future is Data-driven – no decision making if no data
- Reduce Employee Churn - replacing an employee can cost 33% of that person's annual salary
- Avoid Recreating Resources that Exist Already
- Develop Standard Workflows and Processes (Playbook)
- Faster decision-making
- Efficient access to knowledge and information
- Increased collaboration and idea generation
- Enhanced communication throughout your organization
- Improved quality of information and data
- More security for intellectual property
- Optimized training

KNOWLEDGE MANAGEMENT



AI-BASED
CAPABILITIES



INCREASED EFFICIENCY
DECREASED COSTS

LESS STAFF
TURNOVER



REDUCED DUPLICATION
OF EFFORT



SUPERIOR EMPLOYEE
EXPERIENCE



BETTER USE OF
RESOURCES



CHALLENGES OF KNOWLEDGE MANAGEMENT



Some employees may hoard their knowledge to maintain their positions in the company



Knowledge management systems need proper configuration with the right permissions. The aim is to protect sensitive business information



Knowledge sharing is not a priority for employees because of their existing workloads



A knowledge management framework takes more time and human resources to update and maintain

CASE STUDY: TOYOTA

- During WWII war, large numbers of women workers were recruited in Japan to build guns and other weapons for Japanese soldiers. It was essential for their products to be very reliable.
- Toyota produced the Job Instructions (JI) Document to standardize production, improve safety, and ensure quality and is used by 300,000+ employees who are based around the world. This helped it become one of the largest automaker in the world.
- A JI document contains 3 elements:
 - Important steps – the sequential order of steps to complete a task
 - Key points – any extra information regarding how to save time, or avoid mistakes
 - Reasons – the line of reasoning behind the key points, such as what the result of errors would be

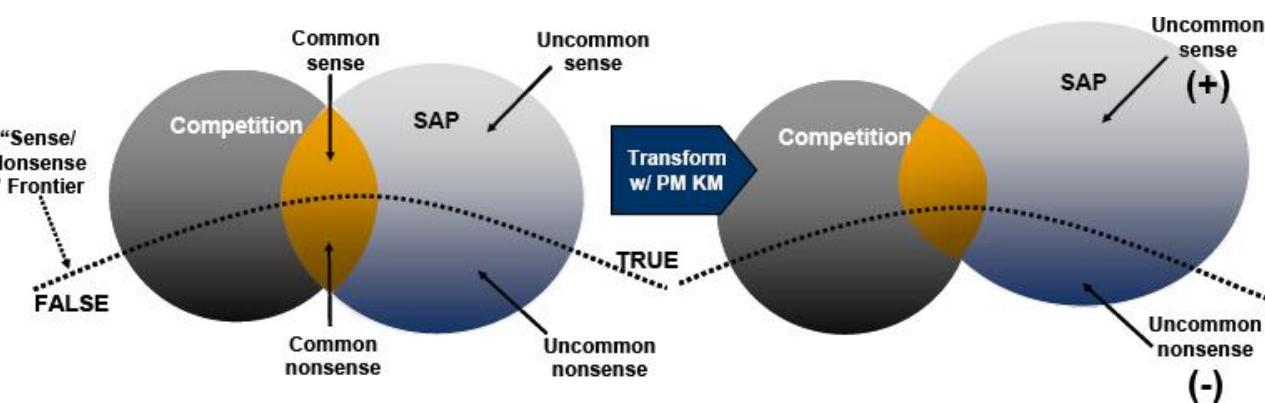
CASE STUDY: XEROX

- Although the engineers were producing highly effective and valuable solutions to equipment issues, these solutions were not being shared among its 24,000-strong customer service team.
- Xerox developed its own Knowledge Management solution called Eureka where engineers could document their solutions
- Eureka has saved the company **more than \$100 million** in service costs

SAP KM CASE STUDY

Knowledge Strategy Equation
that drives the
“sense:nonsense” ratio is
elaborated with two relatively
equal competitors.

Business transformation via
PM KM increased the SAP
sense:nonsense ratio.



SERVICE NOW CASE STUDY SAMPLE

- Self service portal for Customers

The screenshot shows a ServiceNow self-service portal interface. At the top left is the navigation bar: Home > All Knowledge Bases. To the right is a search bar with a magnifying glass icon.

Knowledge Bases: A dropdown menu showing "All".

Categories: A list of categories including Database, Facilities, FAQ, Hosting, How To, IT Application Landscape, and IT Infrastructure, Security, Audit, Coll.

Top Rated Articles:

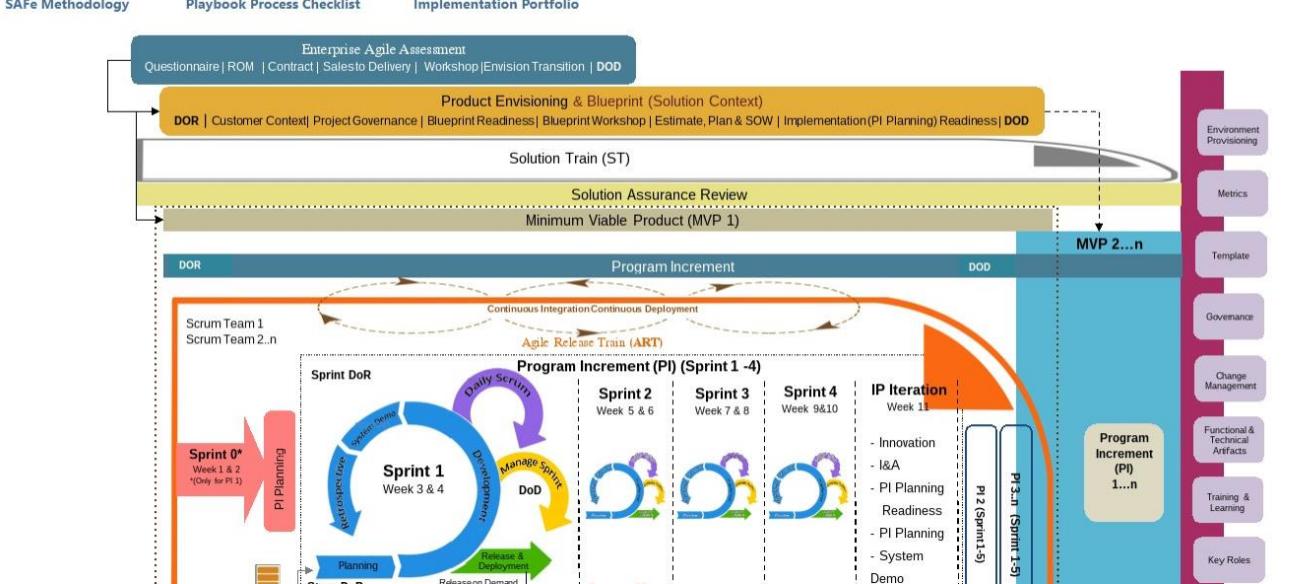
- Helpdesk Basics (5 stars)
- Request for Application Penetration Testing (5 stars)
- How to Connect [REDACTED] /PN (5 stars)
- [REDACTED] Technical Advisory Notice - Spring4Shell Vulnerability (CV [REDACTED]) (5 stars)
- IP Phone Dialing Patterns (5 stars)

Most Viewed Articles:

- Step-By-Step MDM Configuration Guide for Android Phones (633 Views)
- How to update your browser's home page [REDACTED] Windows Users (384 Views)
- MDM Setup for iOS

CONFLUENCE - PLAYBOOK CASE STUDY SAMPLE

- Self service portal for Users





POWER BI CASE STUDY SAMPLE 1

- Data aggregation from various heterogenous systems
- Trend analysis

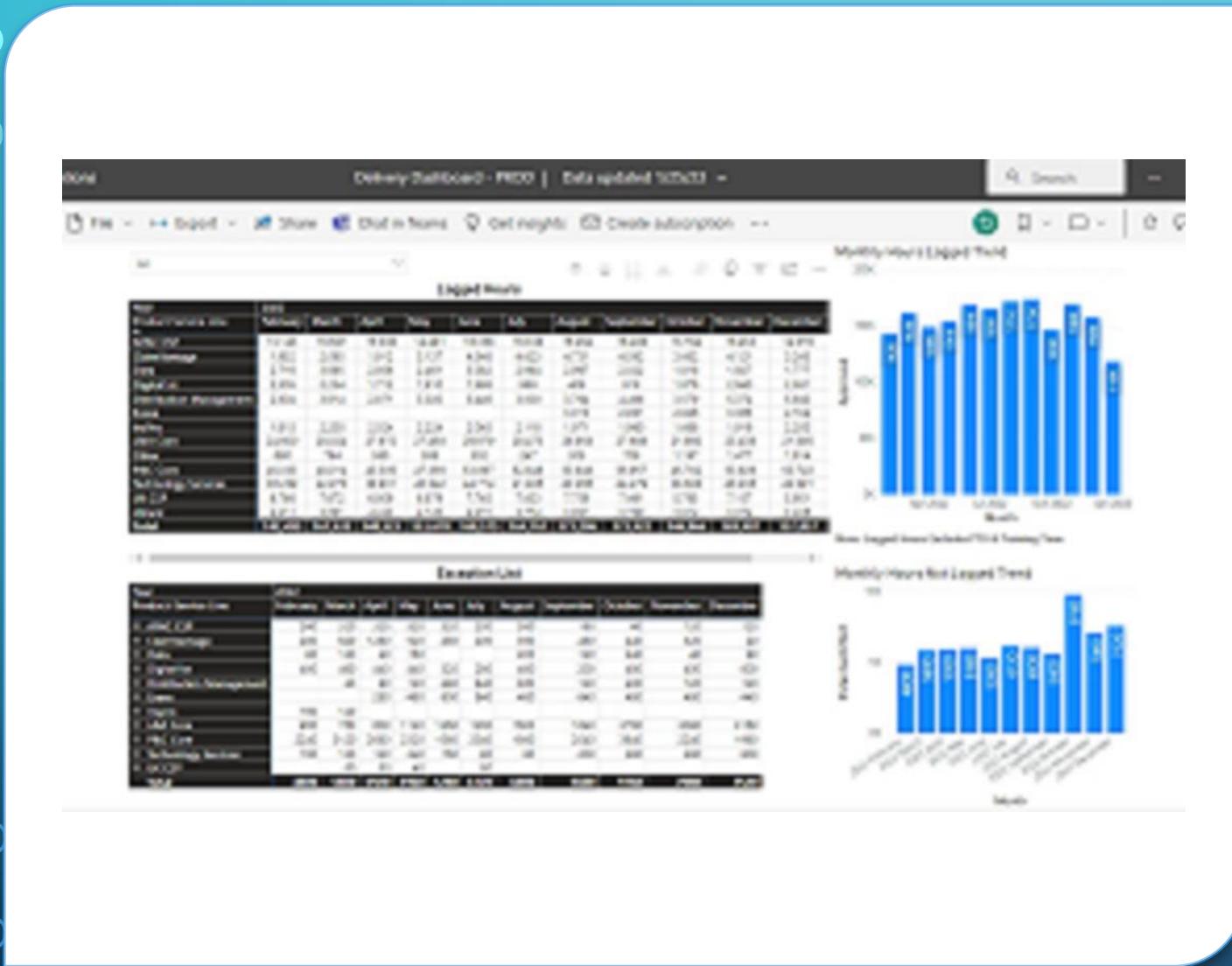
POWER BI CASE STUDY SAMPLE 2

- Data aggregation from various heterogenous systems
- Trend analysis



POWER BI CASE STUDY SAMPLE 3

- Data trend analysis
- Predictive analysis



CONCLUSION

Smaller companies can build a goldmine of business data and scale up over time. Larger companies can put in place a system for digital transformation and business forecasting. Implementation of knowledge management strategy along with effective BI implementation to improve the business outcomes is mandatory in today's environment.



Vision without Action is Merely
a Dream.

Action without Vision just
passes the time.

Vision with Action can Change
the world.

THANK YOU !!!

