



Information System Management (MIS)

Chapter Four Business Processes and Information Systems

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IS الهدف الأساسي لأي
is to optimize the business
to achieve some business function.
Process.

WHAT IS A BUSINESS PROCESS?

or business system.

» A **business process** is a series of activities, tasks or steps designed to produce a product or service.

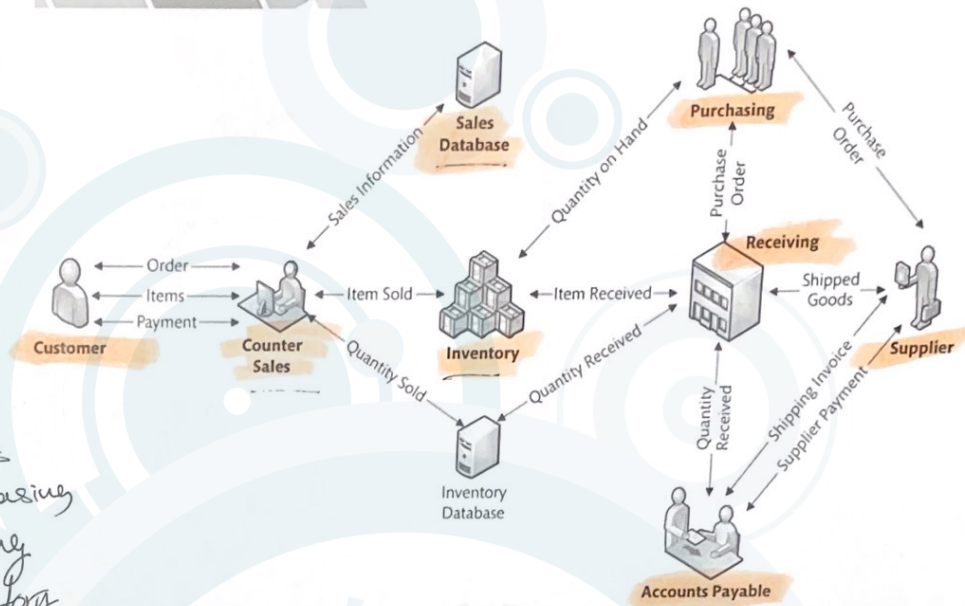
» Sometimes referred to as a **business system**.

Business Function. وأنشأته في نسجته

Business Process is
أي عبارة عن
Tasks and actions

steps can be
modeled to
become single
actions.

EXAMPLE BUSINESS PROCESS



Ex.
Sales
Purchasing
Supplying
Inventory
etc.

شأن طبيعي
Business Processes

Sync: يكونوا
w/ each other

How Did This Stuff Get Here?

- Business processes must work together
- Each business must
 - Obtain payment
 - Cover costs
 - Make profit

أي
Business Process
in generally
Should
at least
(Cover Costs)
Basic costs.

أرباحاً أو
تسعى في الخدمة
إلى بأدائها



Business Processes

A more in depth definitions.

- Network of:
 - Activities
 - Resources
 - Facilities
 - Information
- Interact to achieve business function

الهدف

改善

Business Processes, continued

*Synchronized processes
like memf.*

- Business systems
- Examples:
 - * ▪ Inventory management processes
 - * ▪ Manufacturing processes
 - * ▪ Sales and support processes

Business System

- كيف
ممكن
أخذه
كمثال
- Activities
 - Facility
 - Information
 - Resource

Inventory Management Business System

- Purchasing(activity) queries Inventory Database(facility) obtains QuantityOnHand(information)
- If reorder needed, Purchasing generates Order(information) to Supplier(resource)
- Order Placement(activity) sends copy to Receiving(activity)
- Receiving puts goods into Inventory(facility)
- Record sent to Inventory Database and Payment(activity)

Inventory Management Business System, continued

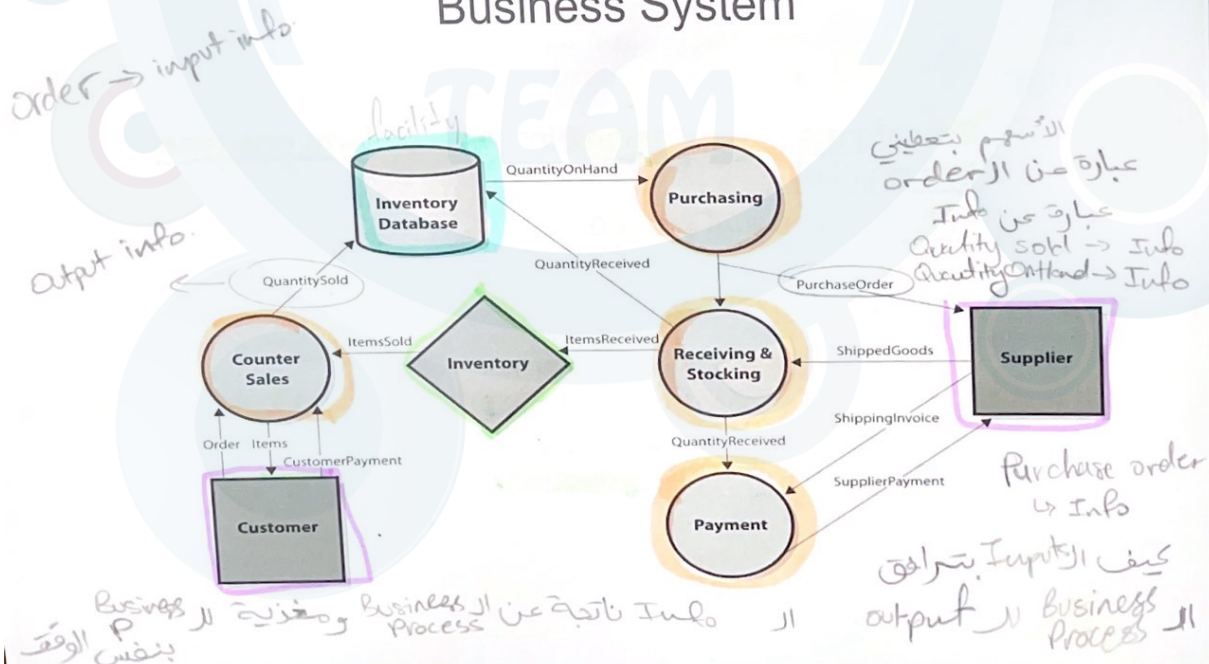
- Supplier sends Shipping Invoice(information) to Payment
- Shipping Invoice compared to Order, generates Check(information and resource)
- Counter Sales(activity) interacts with Customer(resource), Inventory(resource), and Inventory Database

Facility?

هذا الكلام يختصر ال Examples إلى عندي

Info sys: is the core of any business Process!!

Portion of Inventory Management Business System



What Are the Components of a Business Process?

- **Activities** → Transforms Resources into info & info into R
- **Resources** Customer, customer payment
- **Facilities**
- **Information**

Activities

- Transforms resources and information form one type into another
- Follows rules and procedures
- Can be manual, automated, or combination
- Example:
 - Payment(**activity**) transforms QuantityReceived(**information**) and ShippingInvoice(**information**) into PaymentToSupplier(**resource**)

Resources

- Items of value
- External to organization
- Examples:
 - Customers
 - Suppliers

حتى يكون عندي

Resources →
لارم تكون
External to the organization.

أبرز
الأمثلة

Facilities

can be hardware
or software

- Structures used within business process
- Examples:

Facilities

- Inventories
- Databases → IT sys
- Factories
- Equipment → machines

Information

- Used by activities
- Determine how to transform inputs into outputs
- Difficult to define

transf. inputs into outputs

Muna
mona

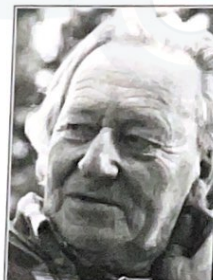
Muna

Business Process
Inputs إلى
to the outputs.

What is Information?

- Knowledge derived from data
- Data presented in meaningful context
- Processed data
- Data processed by summing, ordering, averaging, grouping, comparing
- A difference that makes a difference

Business Process
نتيجة عن
ومفيدة عنها



Information is a difference that makes a difference.

— Gregory Bateson —

AZ QUOTES

What is Information?

» **Data:** Recorded facts or figures.

pure data → معلومات
information

» **Information:** Data presented in a **meaningful** context or processed to provide a **meaningful** context.

Plot it on
flow chart
or histogram
to make it
meaningful.

» **Processed data**

- ◊ Processed by summing, ordering, averaging, grouping, comparing, or other similar operations (that is, we do something to data to produce information)

we do something
to the data to
produce info.

» **A difference that makes a difference**

- ◊ If you get new information and it does not make a difference to your decision, is what you received really information?

لا فرق
إضافة جديدة
على القرار
لأنه
تأخره
إذا ما كانت
معلوماتاً
Information.

هل فعلاً هي حقيقة على وجه الحقيقة ممكن أن نعتبرها Info
* لأن المعلومات تعمل فرقاً بشأن أقدر أساليب معلوم
بشأنه
Data

- Recorded facts or figures
- Not meaningful on its own

المعلومات
الخام

Good Information

مر معنا بالشايف الأول

▪ Accurate

- Correct and complete
- Crucial for management → مهمة للإدارة
- Cross-check information to ensure accuracy

▪ Timely

- Produced in time for intended use

▪ Relevant

- Context
- Subject

↓ uptodate
تحديث
الطلب

لازم أتأكد
من صحة
المعلومات

لازم يكون
مفيدة
والها علاقة

Good Information, continued

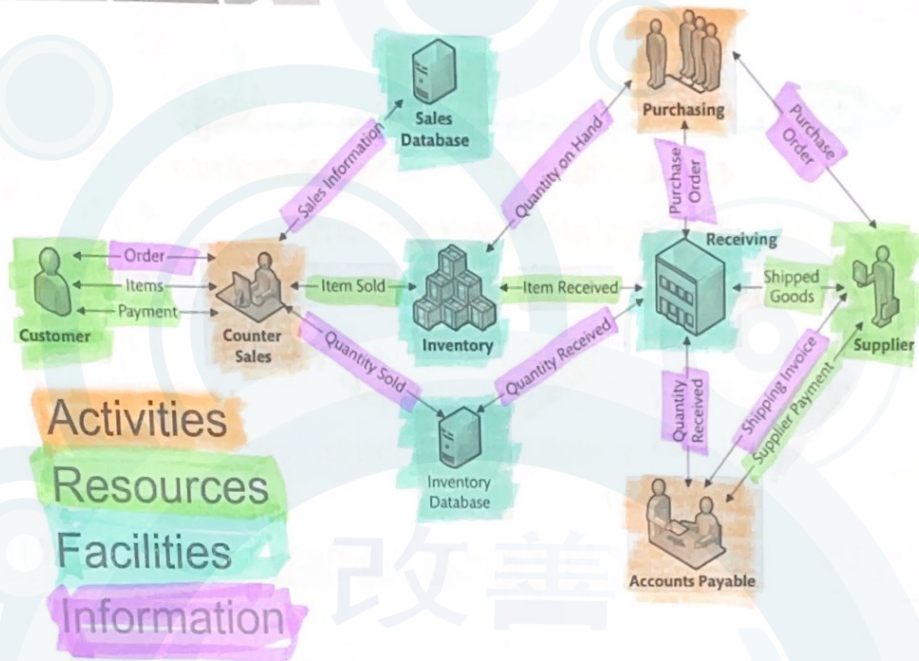
▪ Just Barely Sufficient

- Sufficient for purpose for which generated
- Do not need additional, extraneous information

▪ Worth Its Cost

- Relationship between cost and value
- Information systems cost money to develop, maintain, and use
- Must be worth the cost

Business Process Components



What Is the Role of Information in Business Processes?

TE info
Recieve are very
valuable info & activity

→ is one of the most
imp sources for good
info

- Business processes generate information:
 - Brings together items of data in a context
 - An opportunity to produce good information.
 - May be higher level
 - Useful for management and strategy decisions

البيانات
مهمة
للمنظمة

البيانات
مهمة
للمنظمة

Business Process is cross departmental needs a cross functional info systems.

How Do Information Systems Support Business Processes?

- Used by activities in a business process
 - Several activities may use one system
 - Activity may have own system
 - Activity may use several systems
- Systems designers determine relationship of activities to information systems
 - Relationship determined during systems development
- Use information to manage business process itself !

Several activities يمكن استخدام عدة واحد

sys w/ more than one designer

علاقة بآدم

Info sys helps optimize Business Processes

العمل من أجل
To serve a business process.

عمل
Business Process
لعمل
Info sys.

كونه
الناجية
managing the
business itself we have

Business Process Management (BPM)

لا يفهم
بالرجوع
على
Business Process
نفسها

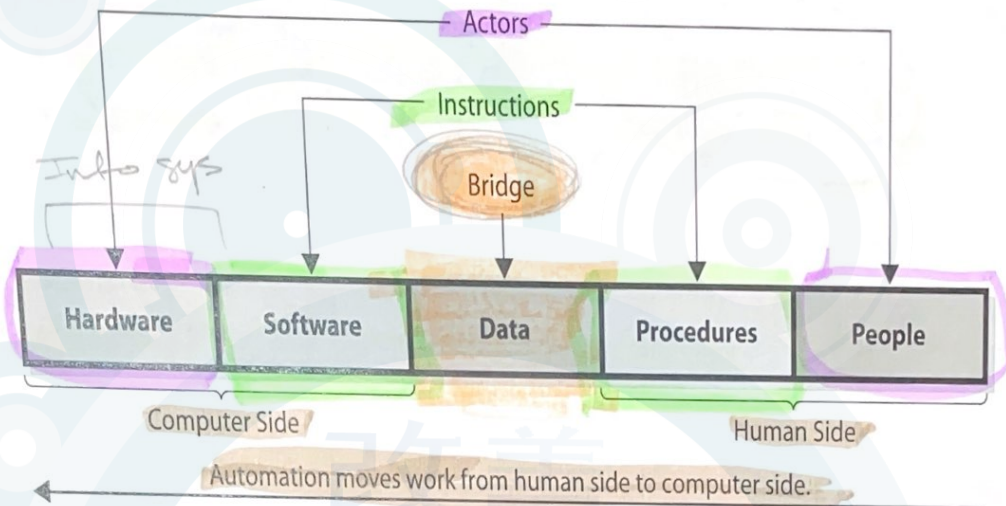
الوظيفة الأساسية
is to manage effectively
through continuous improvement & innovation

» A field of management that promotes the development of **effective** and **efficient** processes through **continuous improvement** and **innovation**.

العمل
الناجية
Business
نفسها

manual or automated
 * اتمتہ ال Business Process

What Does It Mean to Automate a Process Activity?

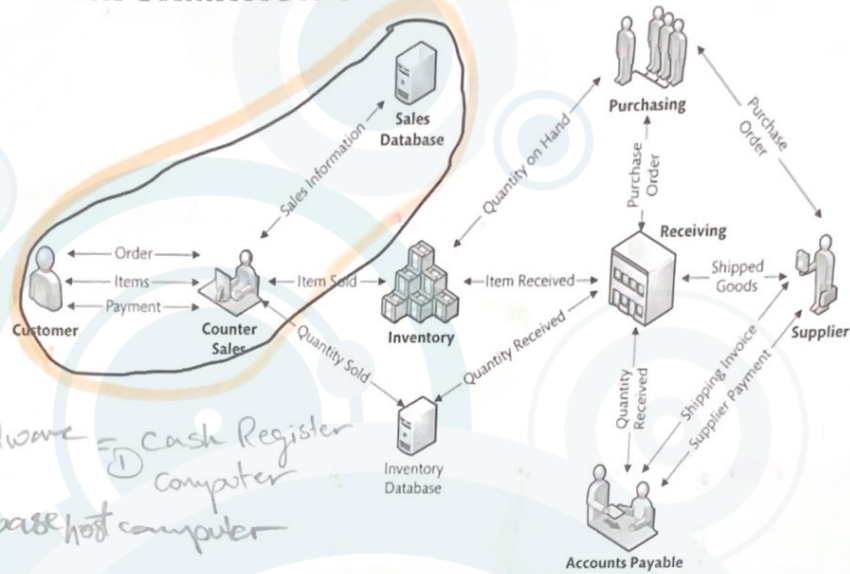


computer side
 كل ما يتجوز من
 Human side = more manual
 والاشياء

Automation of Process Activity

- Automation of processes
 - Transfer work done by people to computers
 - People follow procedures
 - Computers follow software instructions

INFORMATION SYSTEM TO SUPPORT COUNTER SALES



Mostly automated

Information System Supporting Counter Sales

Hardware	Software	Data	Procedures	People
- Cash register computer - Database host computer	- Sales-recording program on cash register	- Sales data - Inventory database	- Operate cash register	- Cashier

Here IT part is used more than the human part

IT part

Bridge

Human part

Cash only

أو ما بخلوا
visa

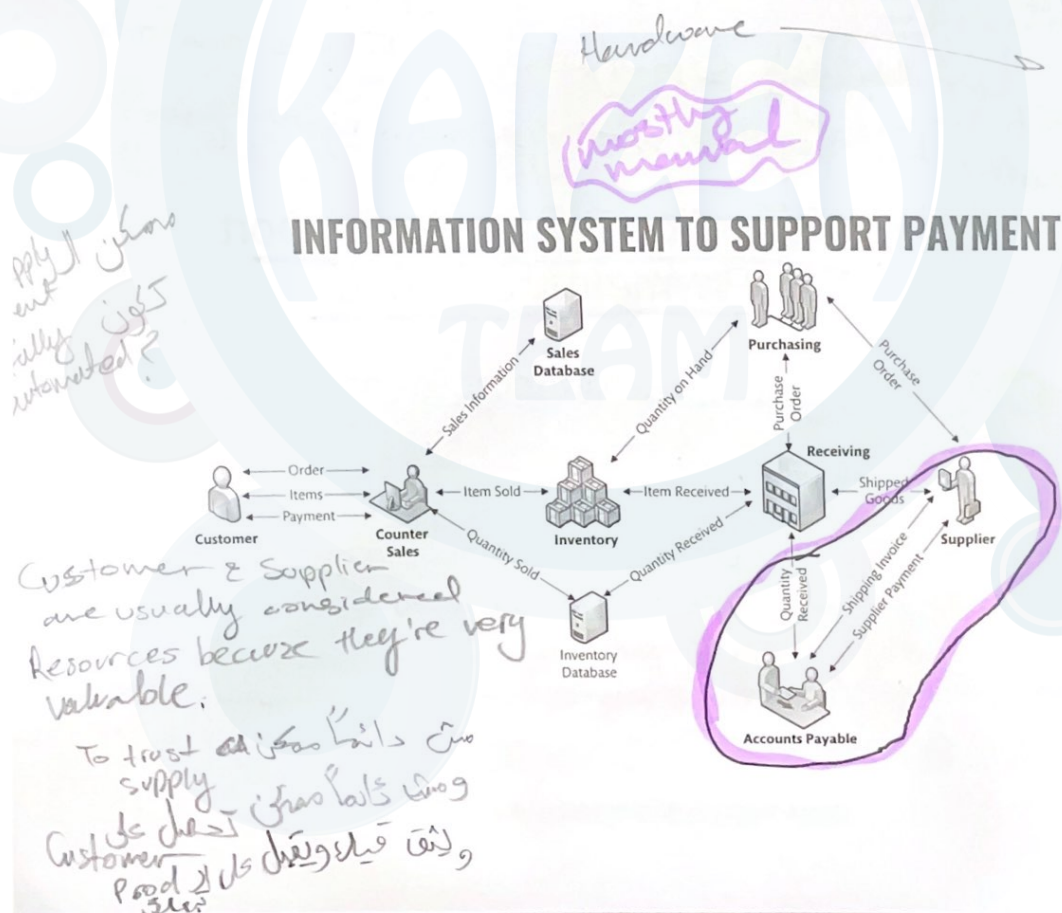
Mostly an automated system.
 Almost all work is done by computers and software.

fully automated

لدارم يكون في cashier واحد
 لو صار مشغول يتدخل
 ممكن نغلبها
 Fully automated
 بس في نقاط عمريه ما بتعرف
 تستخدم لو كان
 automated

Information System Supporting Counter Sales, continued

- Fully automated
 - Cashiers do not require extensive training
 - Cashiers do not work directly with programs on computer
- Computer in cash register communicates with computer that hosts Inventory Database
- Programs record sales and makes changes



Information System to Support Payment

Hardware	Software	Data	Procedures	People
- Personal computer	- Adobe Acrobat Reader - Email	- QuantityReceived - ShippingInvoice	- Reconcile receipt document with invoice. - Issue payment authorization, if appropriate. - Process exceptions.	- Accounts payable

Procedures الحواسب و مبيعات
التي يجب جداً تكون

automated → Supplyment

الغرض البشري بارز جداً فيها

Fully automated.

* Authorization payment must be done manually

Mostly a manual system.
Little work is done by computers and software.
Most work is done by Accounts Payable clerk.

Information System to Support Payment, continued

- Payment receives QuantityReceived and ShippingInvoice and produces SupplierPayment
- Mostly manual
 - Accounts Payable Clerk reads documents and issues payment or investigates discrepancies
 - Processing exceptions complicated
 - Programming expensive
 - Probably not effective

very expensive
not effective

INFORMATION SYSTEM TO SUPPORT PURCHASING



I have to issue a Purchase order according to the Inventory management Practices & guidelines.

Balanced Business Process

لكن بالاحتياج كونه عتد على Inventory guidelines لازم تكون واضحة

Information System to Support Purchasing

Hardware	Software	Data	Procedures	People
- Personal computer - Database host computer	- Inventory application program - Purchasing program	- Inventory database	- Issue Purchase Order according to inventory management practices and guidelines.	- Purchasing clerk

Balance between computer and human work.

Information System to Support Purchasing, continued

- Purchasing clerk computer runs program that queries database and identifies stock levels and generates PurchaseOrder
- Designers balanced work between automation and manual activity
 - Searching database is repetitive
 - Automated process
 - Selecting suppliers is complicated
 - Manual process

جانب يكون
automated
وبتعلق بال Database
وجانب يكون manual
والتي بتعلق بال supplier

Your Role in Information System

- You are part of system (people)
- Most important component
 - Must be able to use system
 - Quality of thinking

بالأمر كينا
The most imp
valuable part
in any info sys
is the (Skilled
worker)

or
human
structure

Data

It structure
I have

he or she are
more imp bec
they'll transform the
data into valuable info

Skilled worker is the
MOST IMP part
in any info sys.

DECISIONS BY LEVEL & STRUCTURE

By Level:

- Operational Decisions
- Managerial Decisions
- Strategic Decisions

→ Daily life activities.

Supported by transaction processing systems (TPS)

TPS

أوسيع أشهر
مرة
← سنوي على مدى
Executive Management
على مستوى
اتخاذ القرارات

الغالب البشري الأكثر أهمية
هو بالآخر رخ يأخذ القرارات

الهامة
Based on the knowledge generated by the info.

وظيفة المعلومات
تقديم المساعدة والاستشارة
بمعلومات القرارات
لكن القرار بالآخر رخ يكون
متخذة عن غير إنساني
خلوياً على المستوى الاستراتيجي
لدى شركة كبرى أو Firm

DECISIONS BY LEVEL & STRUCTURE

By Level:

- Operational Decisions
- Managerial Decisions
- Strategic Decisions

Supported by management information systems (MIS)

MIS

DECISIONS BY LEVEL & STRUCTURE

By Level:

- Operational Decisions
- Managerial Decisions
- Strategic Decisions

Supported by Enterprise Information Systems (EIS)

EIS

operational ← مقرر وعياني
managerial ← تغيير تدريس المادة
strategic ← تغيير الخطة الدراسية
كلية

DECISIONS BY LEVEL & STRUCTURE

By Level:

- Operational Decisions
- Managerial Decisions
- Strategic Decisions

Time Frame Increases

Time
Periods

supported
by transaction
Processing
systems.

كلما اتجهنا من
operational إلى strategic
levels

operational → غالباً عمليات
لخدمة بحاجة
لقرارات سريعة

مثلاً عامل لورشة
خالق مثله وبيع
المنتجات لواتهم

DECISIONS BY LEVEL & STRUCTURE

» By Level:

- ◊ Operational Decisions
- ◊ Managerial Decisions
- ◊ Strategic Decisions

» By Structure:

- ◊ Structured Decision
- ◊ Unstructured Decision

Decisions By Structure

- Differentiation decisions according to the structure of decision - making process not the structure of problem or subject.

لما اتقسم القرارات بناءً على الـ structured
بعضها طريقة الاختار القرار نفسه
حل هي معينة بشكل منظم أو
الـ predefined Process? آلية معينة

صن بناءً
على تنظيم
الـ Process نفسه

Decisions By Structure

- **Structured Decision:**
- Have an understood and accepted method to making them.
- decision is made based on a pre-defined process or formula.
- Decision is made by simply plugging some data from your business.
- Example: a set of calculations to determine how many bowls to order based on past sales.

Info sys/IT
helps you here
more.

لما أتخذ قرار
بشراء شيء مستعمل
من Predefined
formula or decision.

مثلاً عندي فندق
خلال فترة الصيف فترة
السياحة تزيد الطلب على
الشرائح والأغطية

Decisions By Structure

في عندي كونه
بي عندي أوار

كثير بناء على حساب عدد
الأوار والمبالغ العرف ممكن أقول

- **Unstructured Decision:**
- Do not have an agreed-upon decision-making method or formula to follow.
- Examples: predicting the stock market or evaluating the quality of supplier's goods while you are choosing a supplier for your business.
- More subjective depends on manager rather than a decision-making process.

Formulas تقريبية
تغطيهم بحاجة
أطلب شرائح ومناشف
وهناك

مثلاً بجام
الأرقام إلى

عندي من مواسم سابقة بـ 20%
لينة مثلاً 20%

لا تتم من
فلا formula
ولا predefined
decision !!

لما أعطي
صوب
تكون من فلا
Predefined formula

تعمد على
الغيب
more subjective.
تعمد على الخبرة
الحدس والتجربة

DECISIONS BY STRUCTURE

Deciding where to
open a new restaurant
(Unstructured)

هل عندي
معاملة ممكن
أخود ليها في
السنة

Predicting the weather
{Structured}

Determining how
many employees we
need to work on Friday
{Structure}

Choosing a new
product line to create
(Unstructured)

When is my push
hour?

DECISIONS BY STRUCTURE

Structured Decision

Determining how many
employees we need to
work on Friday

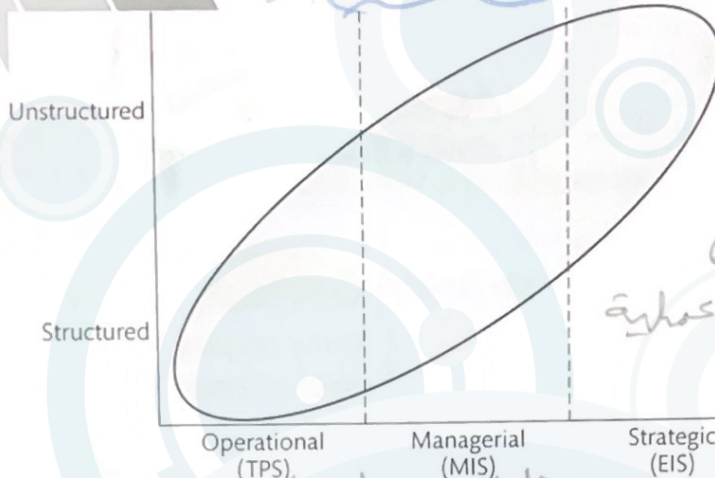
Predicting the weather

Unstructured Decision

Deciding where to
open a new restaurant

Choosing a new
product line to create

DECISIONS BY LEVEL & STRUCTURE



قصة نجاح المؤسسات
الكبير هي بالدرجة
الأولى قصة إلتزام
قرار إنساني من شخص

عنده إستقرار يعمل عملية
Prediction
وحدث قوي

جاء عنده للواقع
و خبرة جيدة وكمية
شجاعة بإلتزام القرار بالدرجة الأولى

operates
on the decision
you want to
make

decision making steps
ممكن تكون
unstructured أكثر
ما يبنى

STEPS TO MAKE A DECISION

Decision Step	Description	Examples of Possible Information Systems
Intelligence gathering	- What is to be decided? - What are the decision criteria? - Obtain relevant data.	- Communications applications (email, video-conferencing, word processing, presentation) - Query and reporting systems - Data analysis applications
Alternatives formulation	What are the choices?	Communications applications
Choice	- Analyze choices against criteria using data. - Select alternative.	- Spreadsheets - Financial modelling - Other modelling
Implementation	Make it so!	Communications applications
Review	Evaluate results of decision; if necessary, repeat process to correct and adapt.	- Communications applications - Query and reporting Systems - Spreadsheets and other analysis

Figure 2-10 Decision Making Steps

حتى بال Unstructured
decisions

مرات أنت بحاجة لمعلومات تساعدك
بإلتزام القرار تبعك Intelligence
Experiences & Prediction

Plan B
& sometimes
I need
Plan C