



Information System Management (MIS)

Chapter Four Business Processes and Information Systems

business process ال تساهم في تحقيق ال business strategy

the goal of is is to optimize the business
processes through department

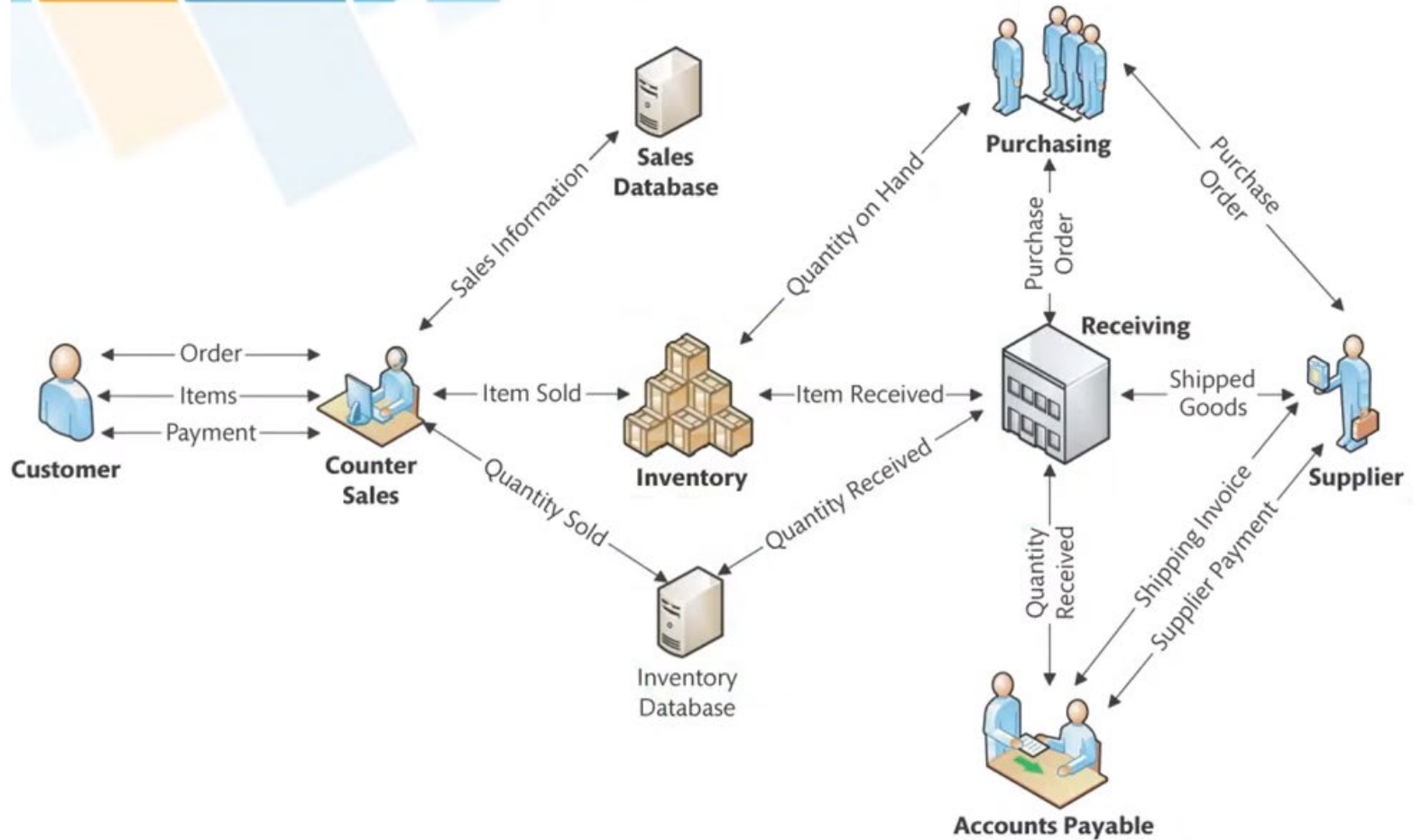
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WHAT IS A BUSINESS PROCESS?

- » 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.** or business function

EXAMPLE BUSINESS PROCESS



How Did This Stuff Get Here?

حتى يخدمو business function معين

Business Process
لازم يكونوا synchronise with each other

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

ممکن ما يكون في profit بس المهم يغطي التكلفة



Business Processes

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

Business Processes, continued

synchronise process دايما فيها بنحكي عن



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

Business System

- Activities
- Facility
- Information
- Resource

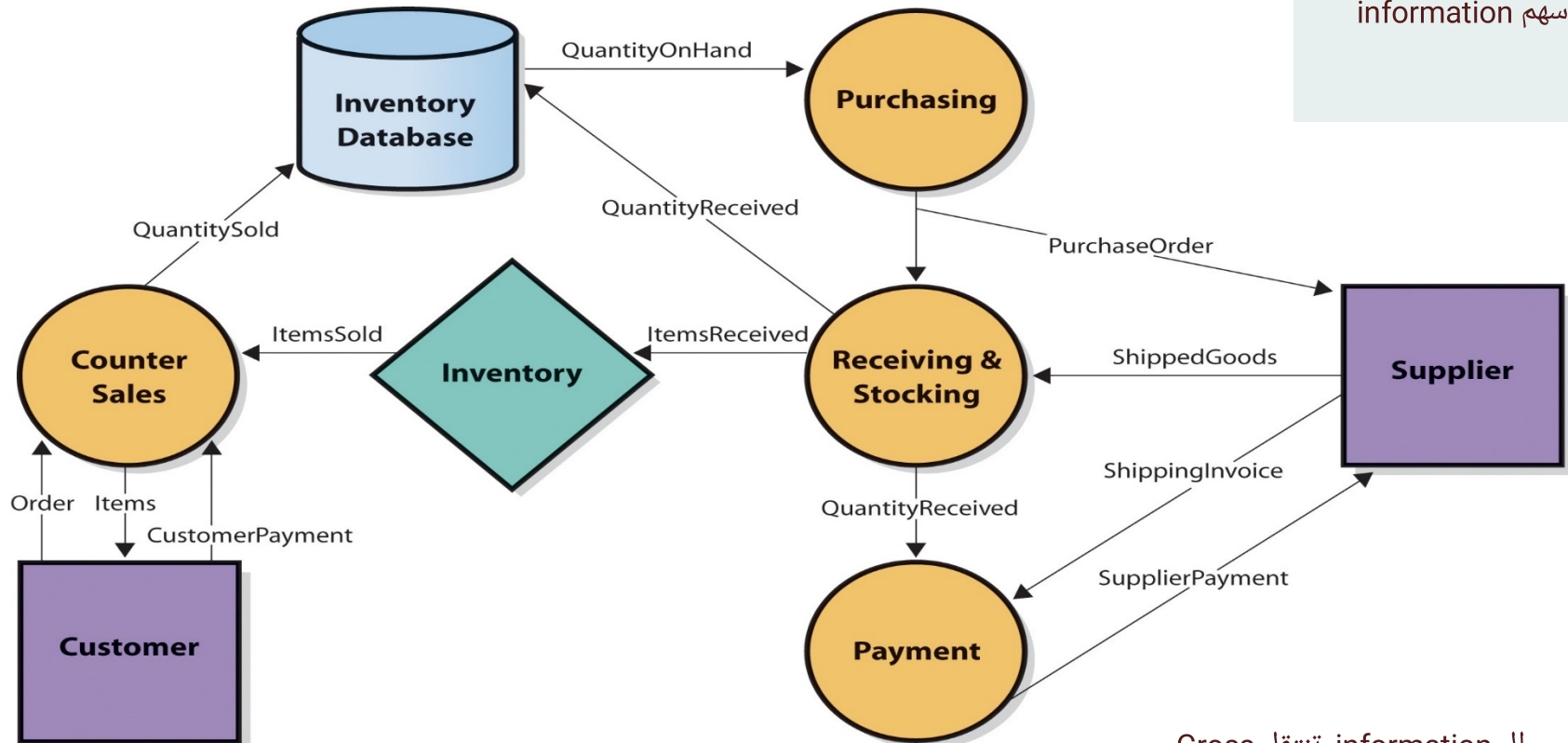
Inventory Management Business System

- 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

Portion of Inventory Management Business System



الدوائر تتبدل على activity
الازرق facilities
المربعات resources
الاسهم information

ال information تنتقل Cross
function يعني عبرهم

What Are the Components of a Business Process?

- Activities
- Resources
- Facilities
- Information

Activities

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

Resources

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

Facilities

- Structures used within business process
- Examples:
 - Inventories
 - Databases
 - Factories
 - Equipment

ال IT in the IS يعتبر facilities

Hardware and software

Information

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

business process جزء أساسي من اي

What is Information?

تنتج من business process وتغذي
business process

- 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



Information is a difference that
makes a difference.

— Gregory Bateson —

What is Information?

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

لازم المعلومات تحدث عندي فارق في عملية اتخاذ القرار

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

» **Processed data**

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

» **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**?

Data

المعلومات الخام

- Recorded facts or figures
- Not meaningful on its own

Good Information

- Accurate
 - Correct and complete
 - Crucial for management
 - Cross-check information to ensure accuracy
- Timely
 - Produced in time for intended use
- Relevant
 - Context
 - Subject

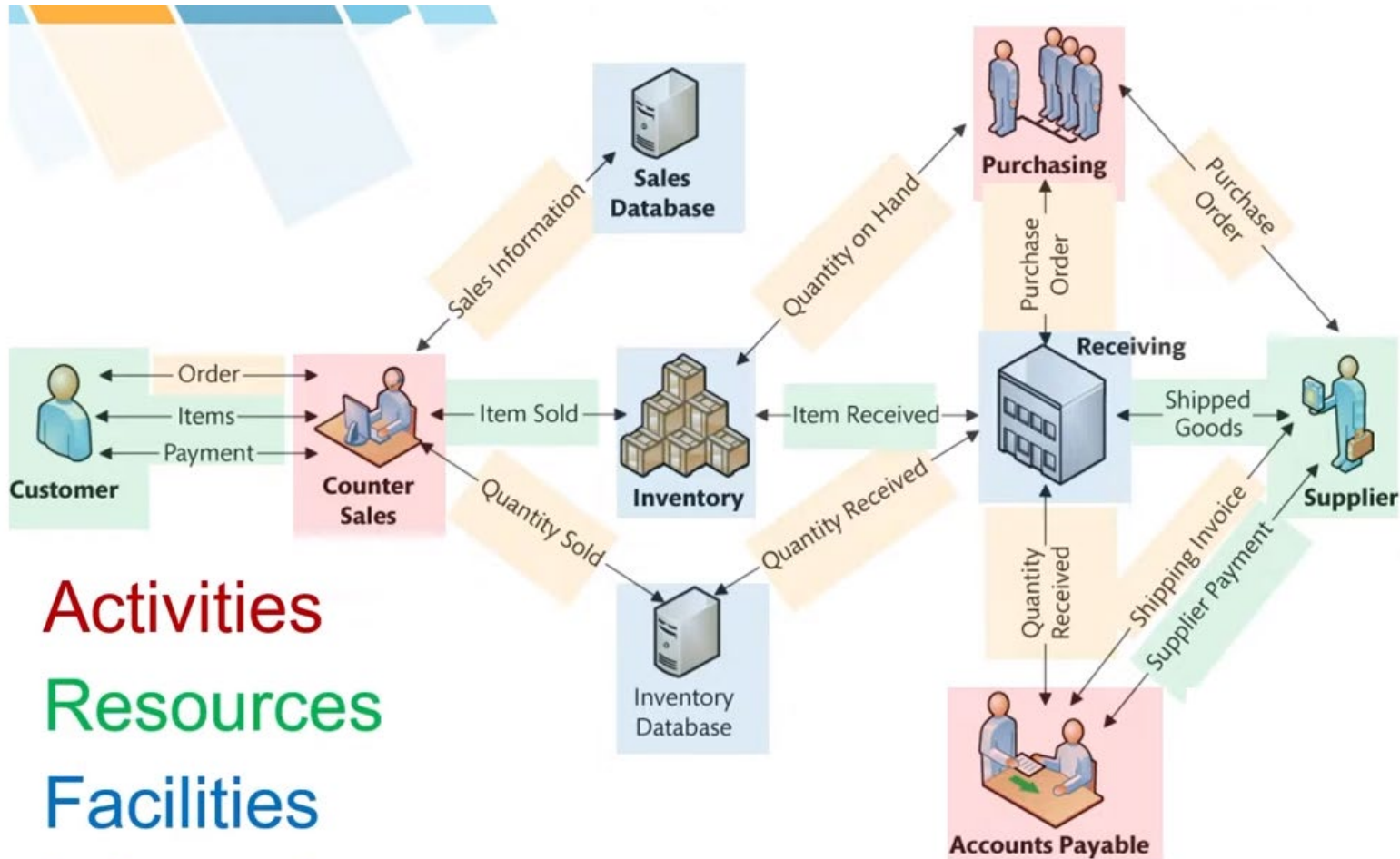
Good Information, continued

- Just Barely Sufficient → *المعلومات لا تكون بالقدر الذي يساعدني
أخذ قرار*
 - Sufficient for purpose for which generated
 - Do not need additional, extraneous information

- Worth Its Cost *تعطي نتيجة تستحق ال resources إلى استخدمتها عشانها*
 - Relationship between cost and value
 - Information systems cost money to develop, maintain, and use
 - Must be worth the cost

time ممكن يكون

Business Process Components



Activities

Resources

Facilities

Information

What Is the Role of Information in Business Processes?

- 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

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 !

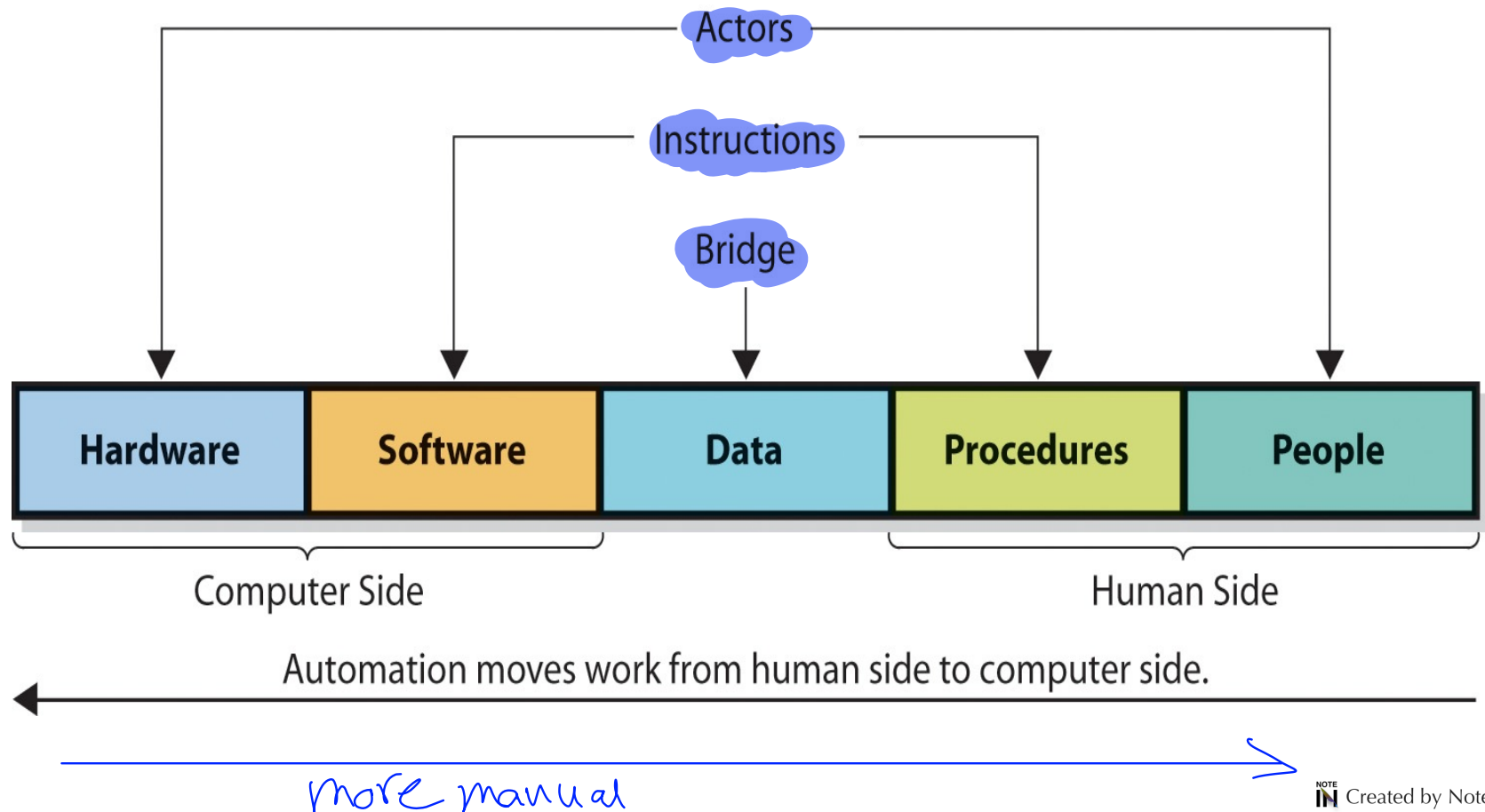
له علاقة بتبادلية

Business Process Management (BPM)

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

by utilising information
business processes
بواسطة المعلومات
في العمليات التجارية

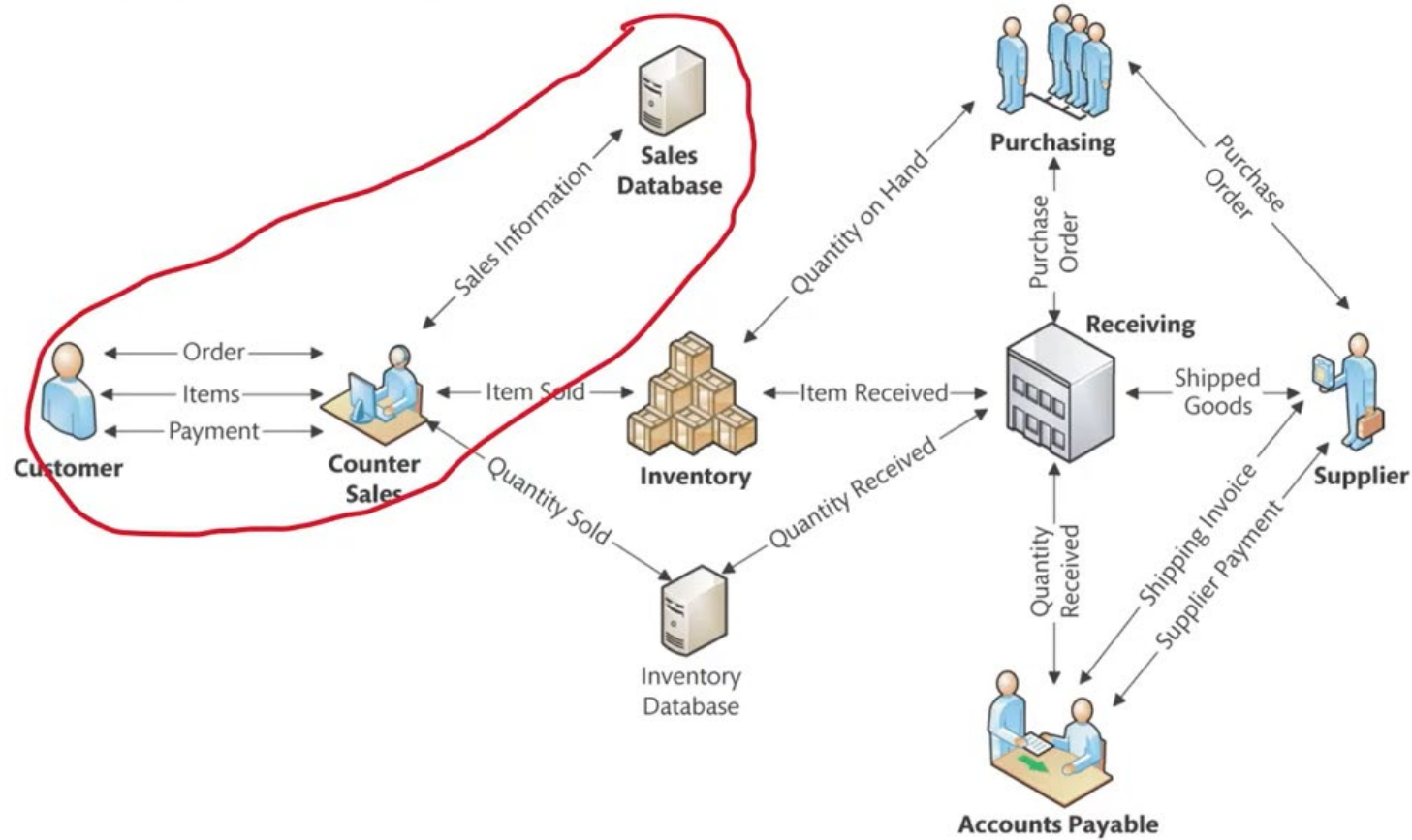
What Does It Mean to Automate a Process Activity?



Automation of Process Activity

- Automation of processes بدني اقل ال human side
 - Transfer work done by people to computers
 - People follow procedures
 - Computers follow software instructions

INFORMATION SYSTEM TO SUPPORT COUNTER SALES



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



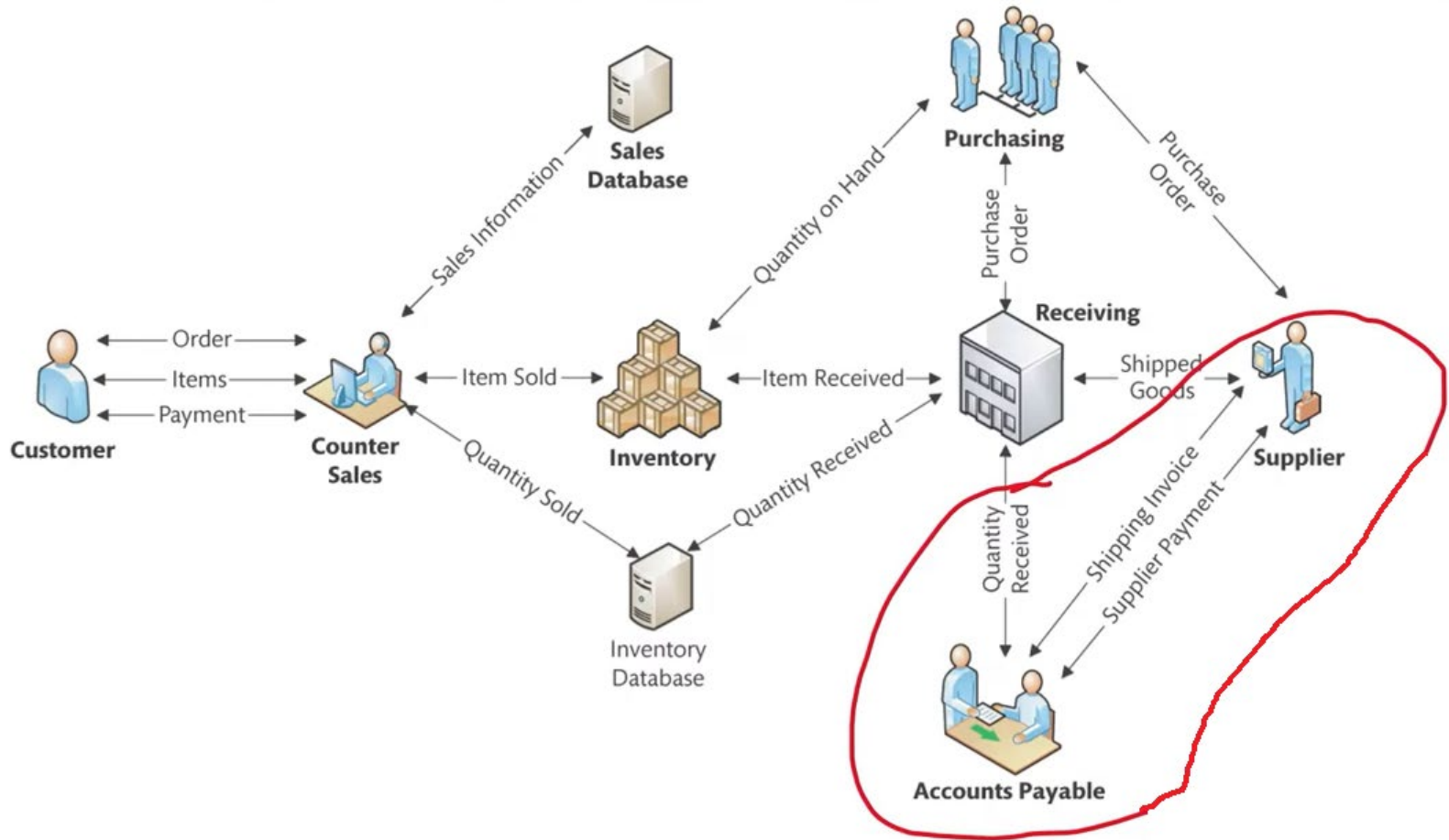
Mostly an automated system.
Almost all work is done by computers and software.

mostly automated but not fully

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



Information System to Support Payment

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

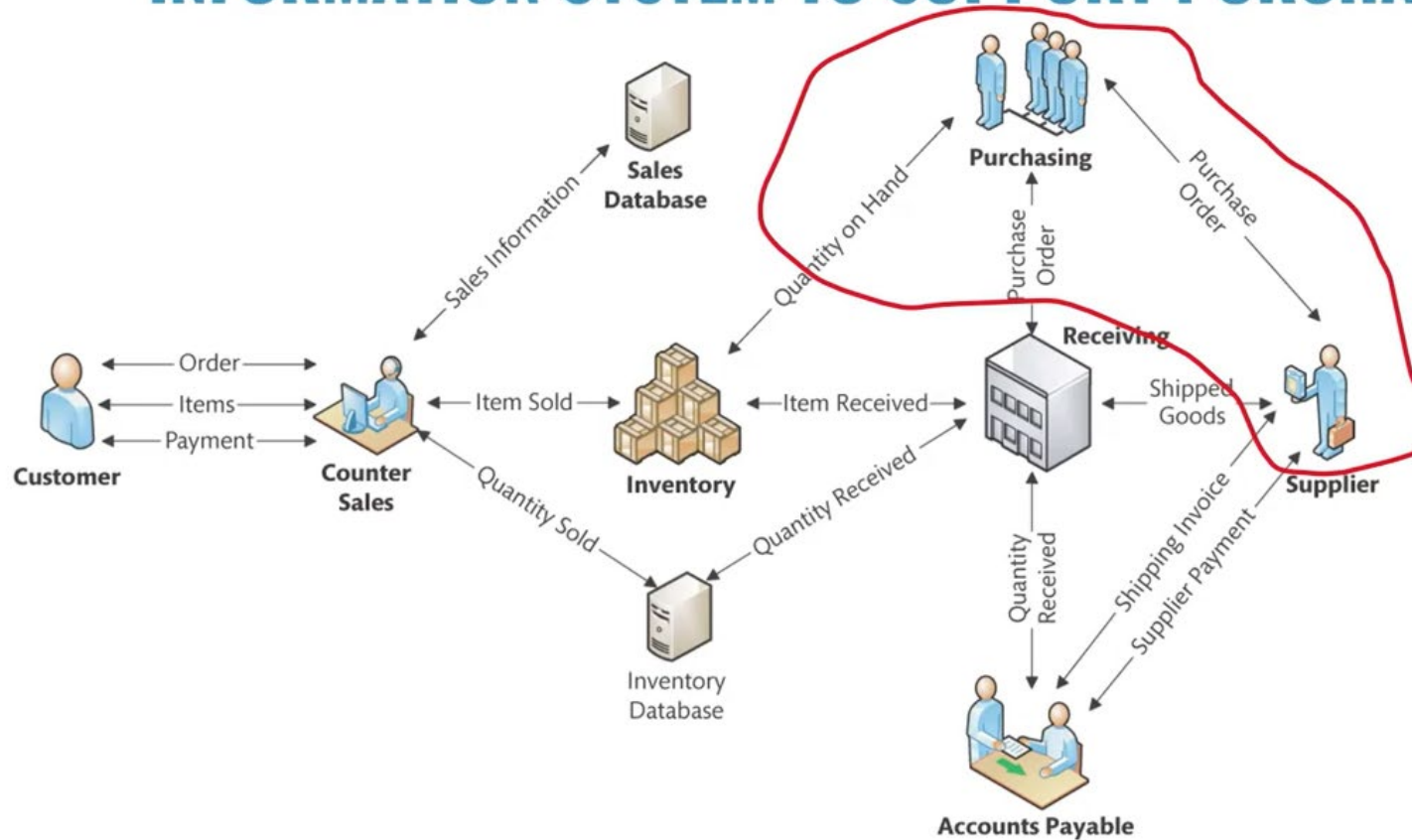


Mostly a manual system.
Little work is done by computers and software.
Most work is done by Accounts Payable clerk.

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
- * Human communication*

INFORMATION SYSTEM TO SUPPORT PURCHASING



Information System to Support Purchasing

Hardware	Software	Data	Procedures	People
– Personal computer – Database host computer	– Inventory application program – Purchasing program	– Inventory database	– Issue <i>PurchaseOrder</i> 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

Your Role in Information System

- You are part of system (people) اهم اشئ في ال is
- Most important component
 - Must be able to use system
 - Quality of thinking



DECISIONS BY LEVEL & STRUCTURE

الهدف الأساسي لا IS ← is to aid in the decision making

» By Level:

- ♦ Operational Decisions
 - ♦ Managerial Decisions
 - ♦ Strategic Decisions
- Supported by transaction processing systems (TPS)



DECISIONS BY LEVEL & STRUCTURE

» By Level:

- ◇ Operational Decisions
 - ◇ Managerial Decisions
 - ◇ Strategic Decisions
- Supported by management information systems (MIS)



DECISIONS BY LEVEL & STRUCTURE

» By Level:

- ◇ Operational Decisions
- ◇ Managerial Decisions
- ◇ Strategic Decisions

Supported by Enterprise
Information Systems (EIS)



DECISIONS BY LEVEL & STRUCTURE

» By Level:

- ♦ Operational Decisions
- ♦ Managerial Decisions
- ♦ Strategic Decisions

مهمة جدا رح يترتب عليها كثير نتائج

قرارات سريعة ما بدھا كثير داتا
أهميتها قليلة
قرارات يومية

Time Frame
Increases



DECISIONS BY LEVEL & STRUCTURE

» By Level:

- ◇ Operational Decisions
- ◇ Managerial Decisions
- ◇ Strategic Decisions

» By Structure:

- ◇ Structured Decision
- ◇ Unstructured Decision

Decisions By Structure

لـ القرار إلى يدى اخذه حل سبق كل مبعه معينه

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

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.

Decisions By Structure

- Unstructured Decision: تعتمد على خبرة المدير
- 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.



DECISIONS BY STRUCTURE

**Deciding where to
open a new restaurant**

ما في معادلة ممكن تحدد هاد الاشپ

Predicting the weather

**Choosing a new
product line to create**

ما رح يكون حسب معادلة

**Determining how
many employees we
need to work on Friday**



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

Unstructured

Structured

Operational
(TPS)

Managerial
(MIS)

Strategic
(EIS)

بالنص بين الاثنين
حسب طبيعة القرار
إلى بدي اعمله

خبرة انسانية



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