

# Architecture and Integration

## E-Commerce

**Fachbereich 2** Informatik und Ingenieurwissenschaften

## Next week: Probevorlesung



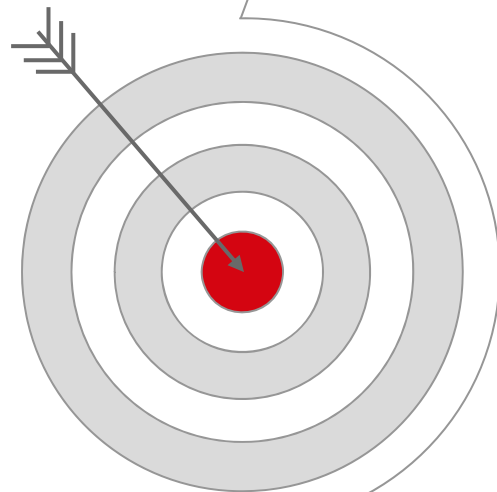
### **Professur Wirtschaftsinformatik und Digitale Transformation**

“Digitale Plattformen und deren Auswirkungen auf das Unternehmen”

- Datum: 3.7.2024
- Dauer: 45 Minuten
- Beginn: 10:30 Uhr (pünktlich)
- Raum: BCN 424



# Learning Objectives: E-Commerce



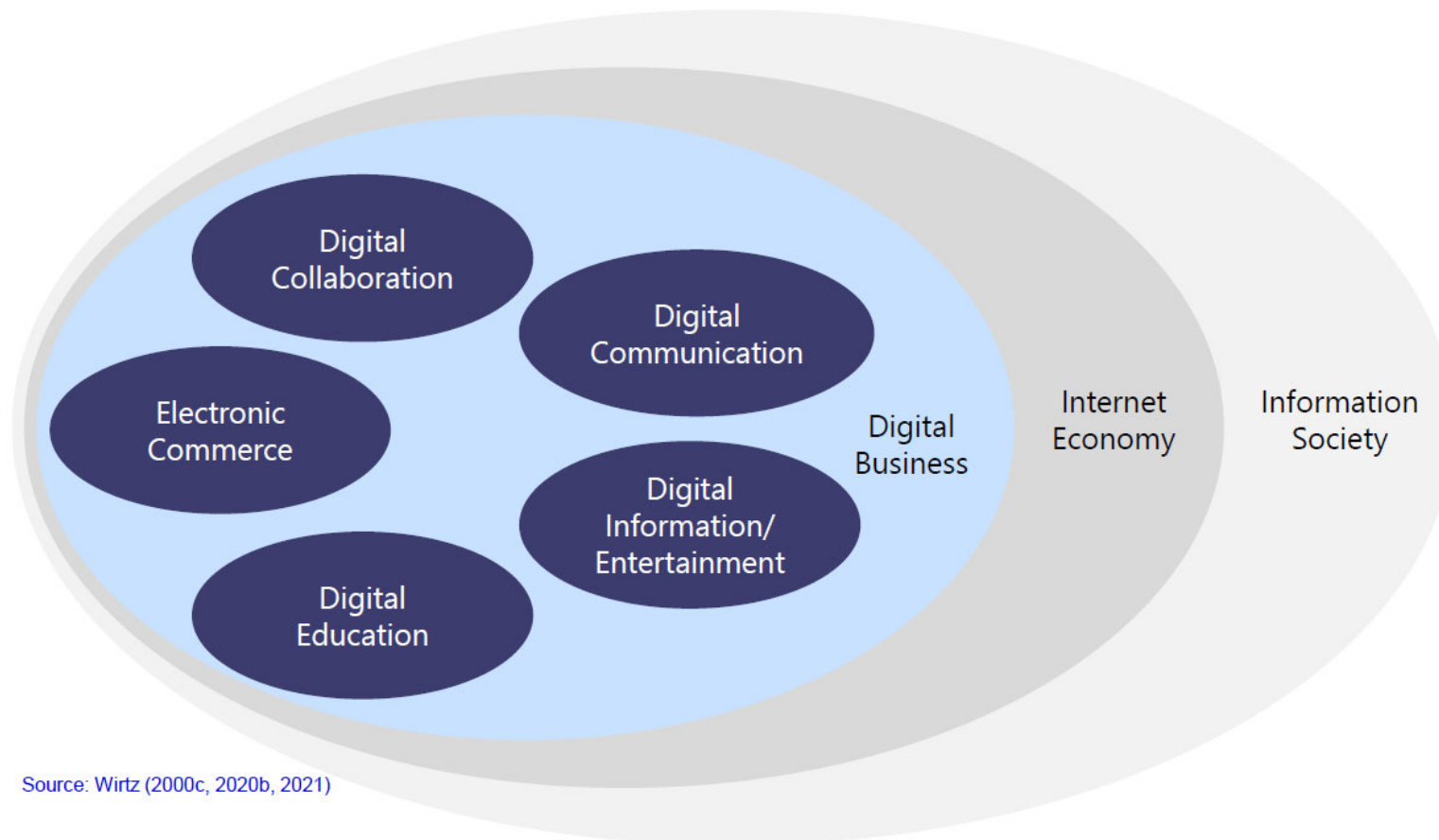
Characterise Electronic Commerce and B2B business models

Describe fulfilment process

Explain relevance of API gateway and its impact on integration



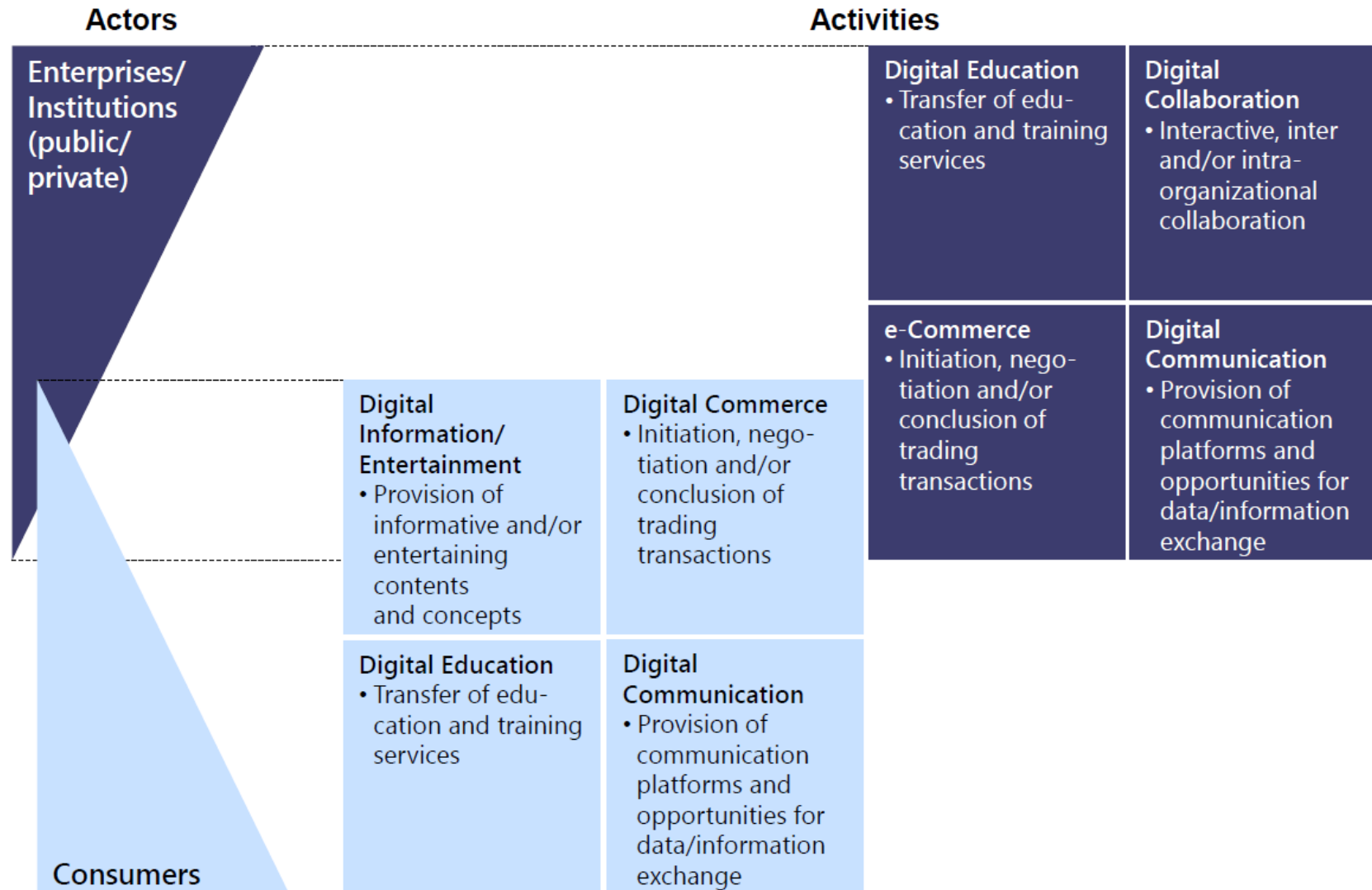
# Electronic Commerce and Internet Economy



Source: Wirtz (2000c, 2020b, 2021)

Source: Wirtz: Digital Business and Electronic Commerce. Springer 2011

# E-Commerce and Digital Business Models



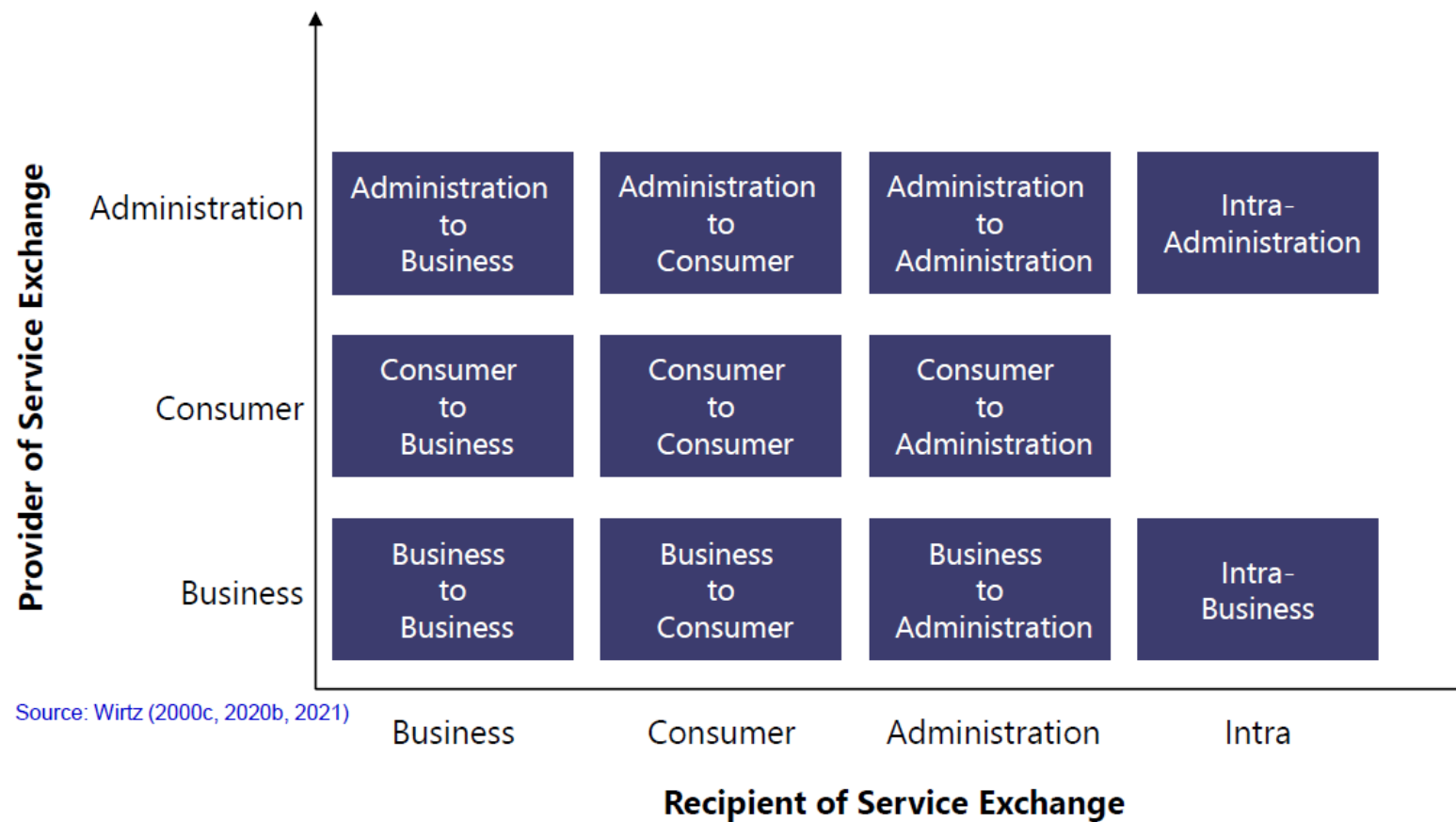
Source: Wirtz: Digital Business and Electronic Commerce. Springer 2011

## E-Commerce: Definition

**E-Commerce:** Electronic Commerce (E-commerce) involves the electronic support of activities that are directly related to the purchase and sale of products or services through electronic networks.

Wirtz: Digital Business and Electronic Commerce. Springer 2011

# E-Commerce: B2B, B2C et al.



Source: Wirtz (2000c, 2020b, 2021)

Source: Wirtz: Digital Business and Electronic Commerce. Springer 2011

## E-Commerce: B2B Business Models

<p style="text-align: center;"><b>Sourcing</b></p> <ul style="list-style-type: none"> <li>• Initiation and/or</li> <li>• Settlement of direct B2B business transactions from buyer to seller</li> </ul>	<p style="text-align: center;"><b>Sales</b></p> <ul style="list-style-type: none"> <li>• Initiation and/or</li> <li>• Settlement of business transactions from seller to buyer</li> </ul>
<p style="text-align: center;"><b>Supportive Collaboration</b></p> <ul style="list-style-type: none"> <li>• Supporting collaborative value generation</li> <li>• Collaborative research and development</li> <li>• Collaborative production</li> <li>• Collaborative sale</li> </ul>	<p style="text-align: center;"><b>Service Broker</b></p> <ul style="list-style-type: none"> <li>• Support of B2B business transactions</li> <li>• Providing information and marketplaces of third parties</li> </ul>

Source: Wirtz (2010c, 2021)

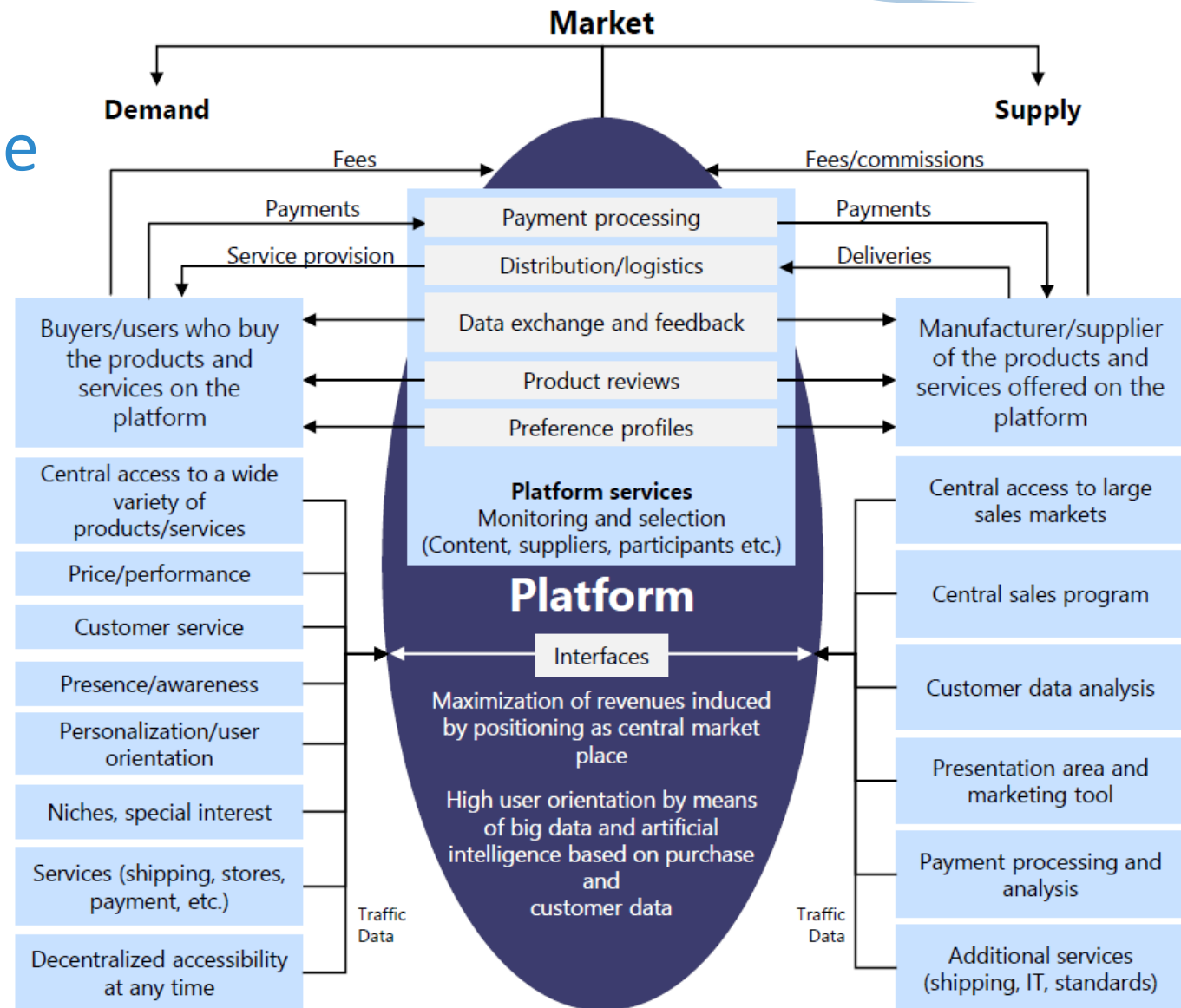
Source: Wirtz: Digital Business and Electronic Commerce. Springer 2011



# E-Commerce Example: Order from Marketplace



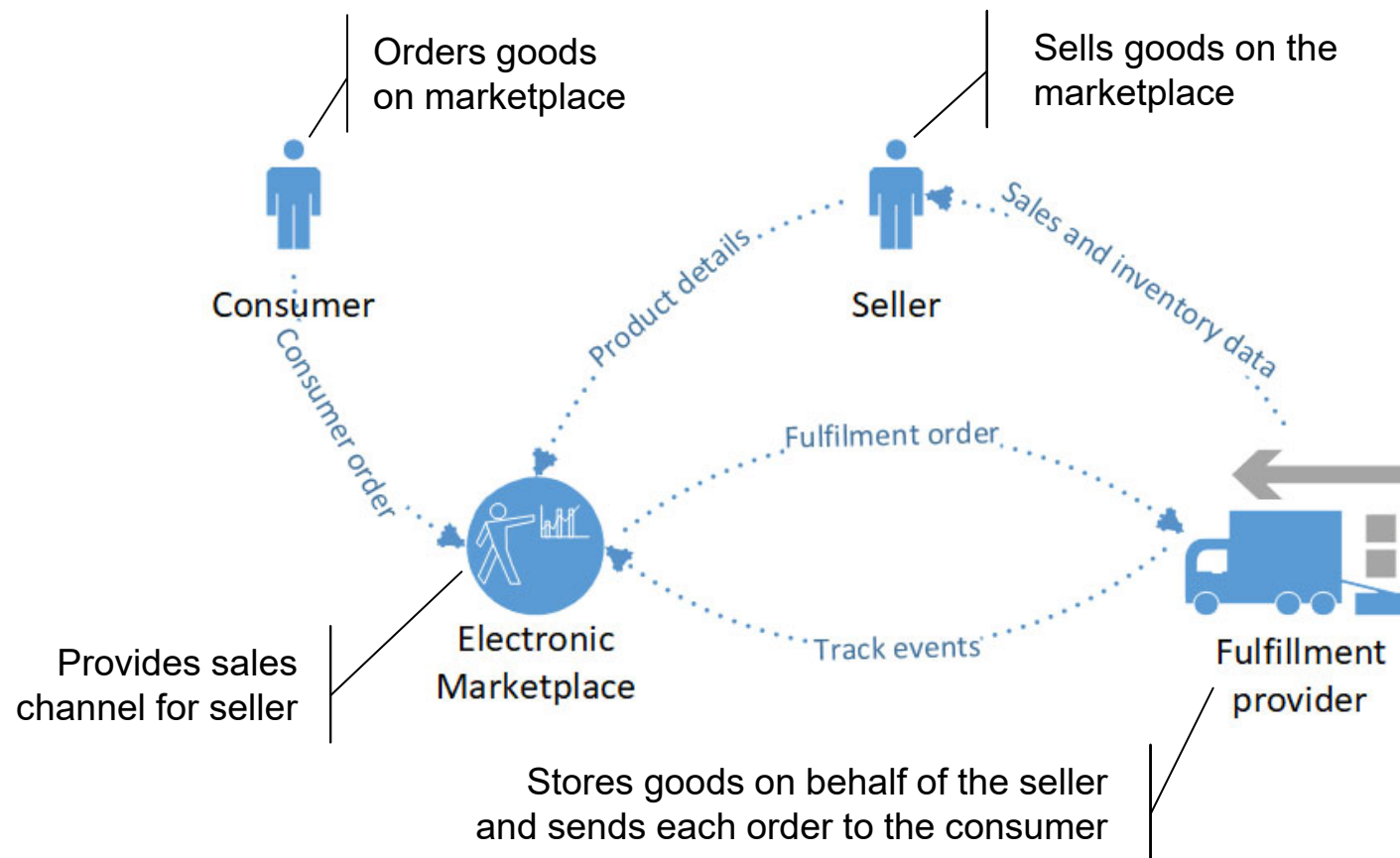
# Marketplace



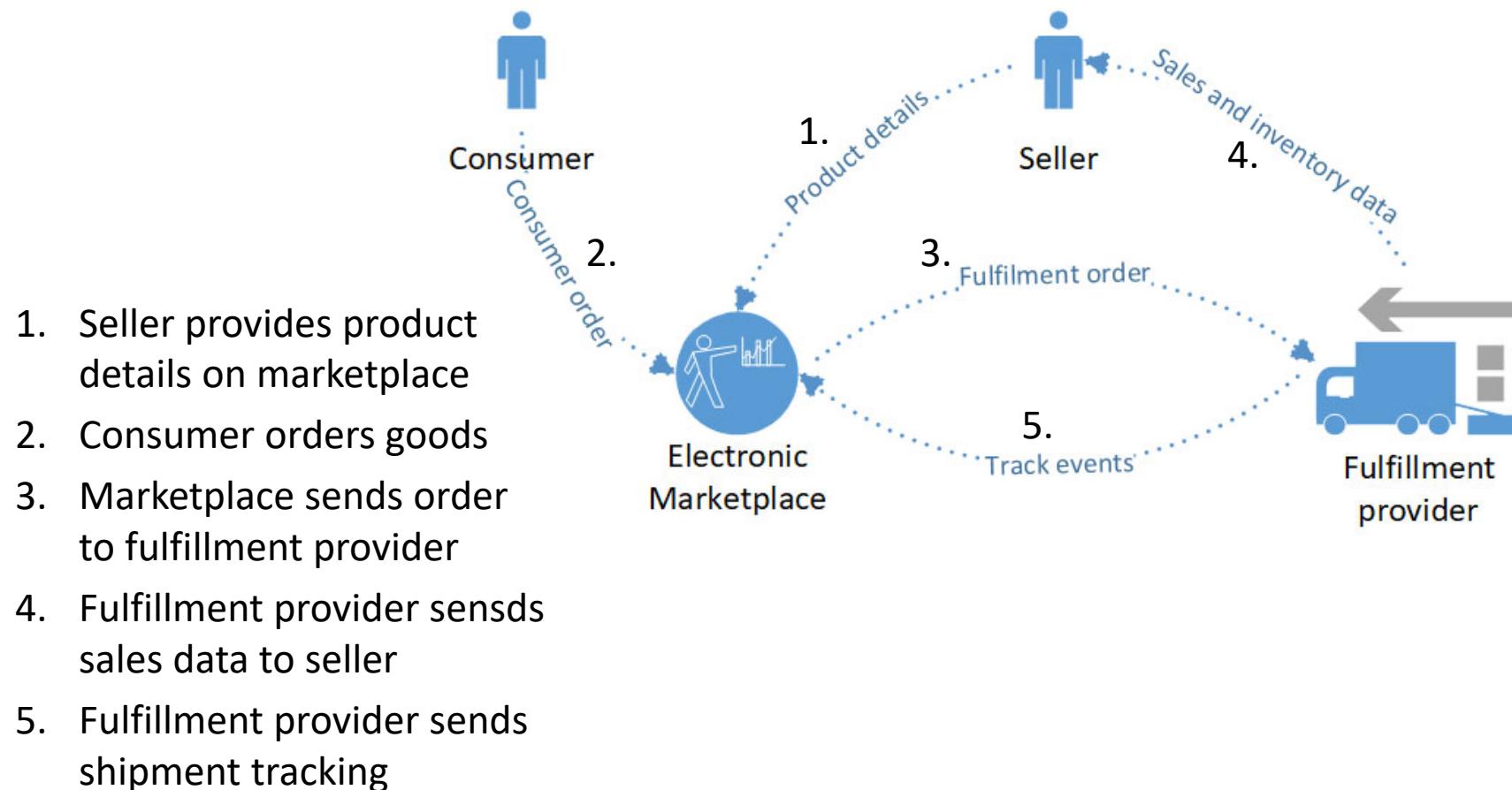
Source: Wirtz (2020b, 2021)

Source: Wirtz: Digital Business and Electronic Commerce. Springer 2011

# Order from Marketplace: Major Participants



## Order from Marketplace: Major Data Flow



## E-Commerce Example: Order Fulfillment

Watch the video and prepare a presentation (one slide) showing the order fulfillment process.

Oracle: <https://www.youtube.com/watch?v=Usn8qJuesrU>

ShipBob: <https://www.youtube.com/watch?v=rfadK5d77jo>

ShipBob <https://www.youtube.com/watch?v=PWMrsDd36vE>



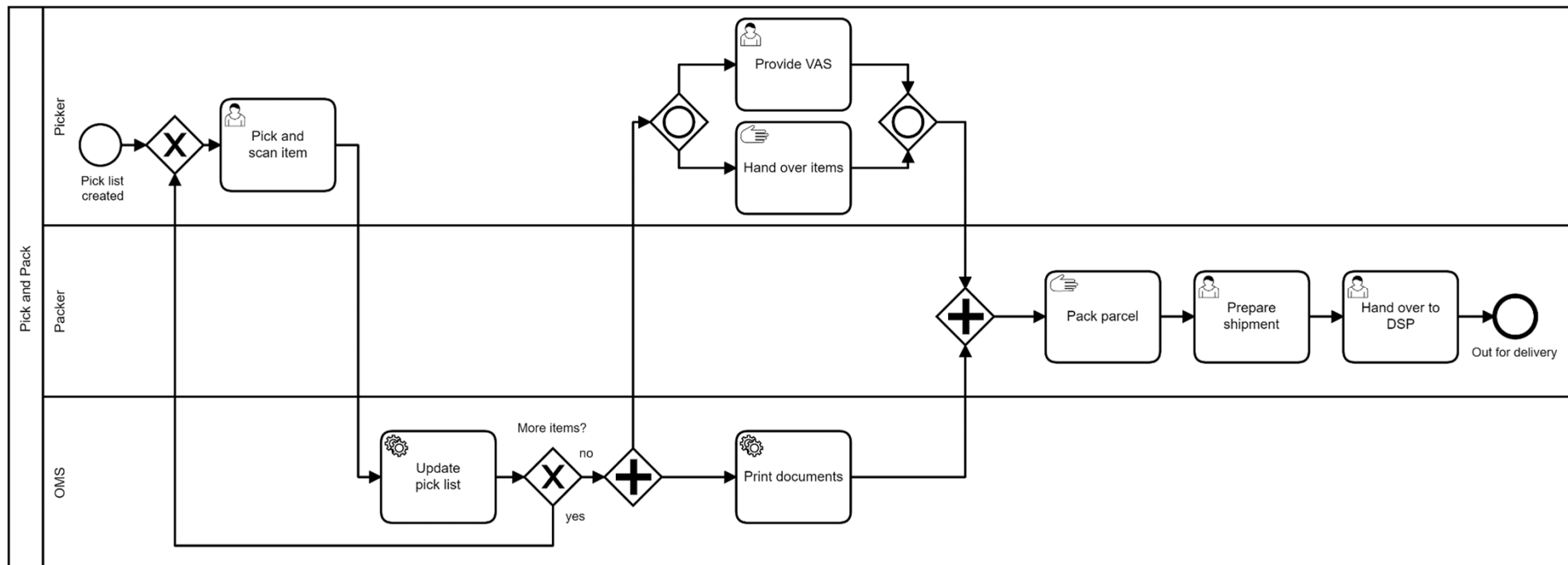
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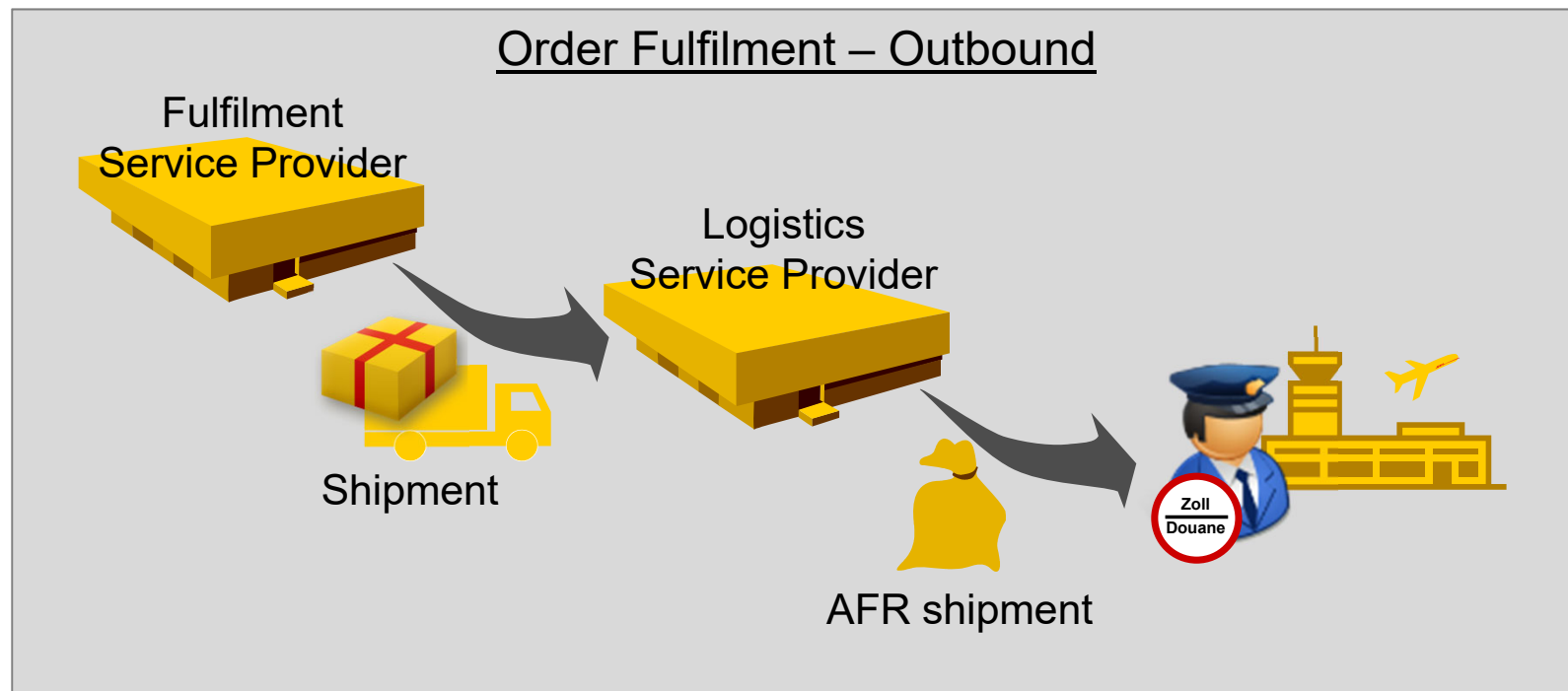
# Order Fulfillment: Process in Warehouse



VAS = Value-Added Service

DSP = Delivery Service Provider

# Order Fulfillment: Logistics at Origin Country



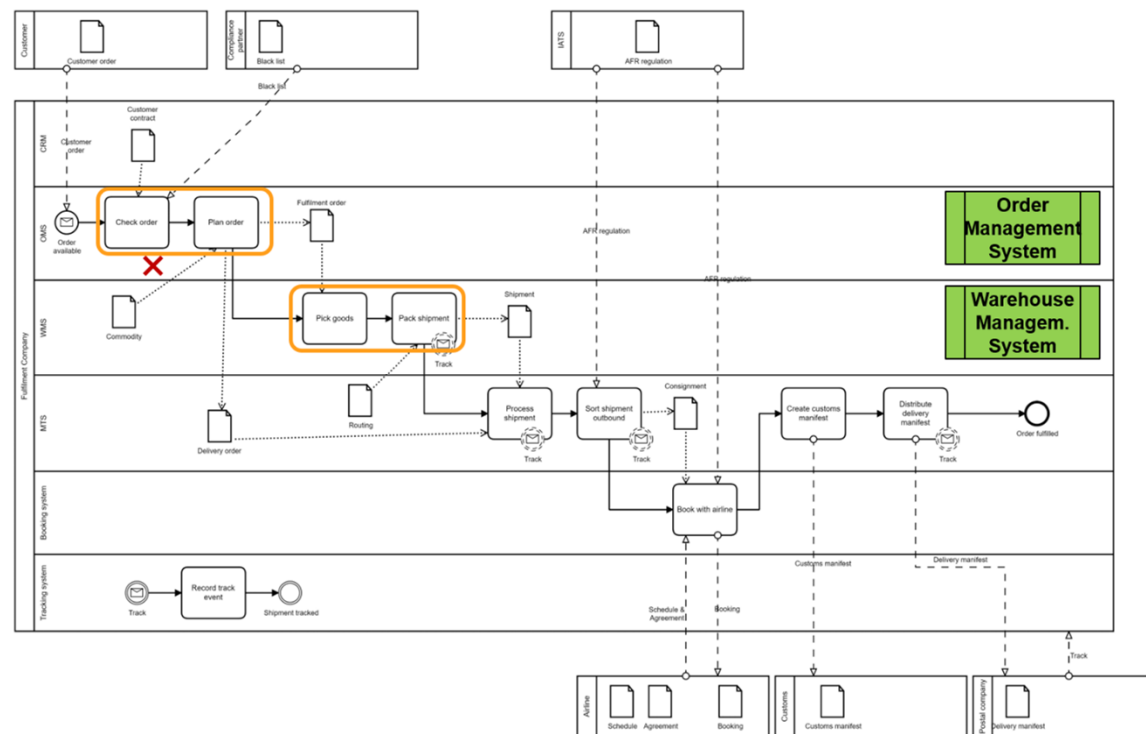
Goods are picked in the warehouse and packed into parcel (shipment)

Shipments are sorted for export in the mail terminal by logistics service provider

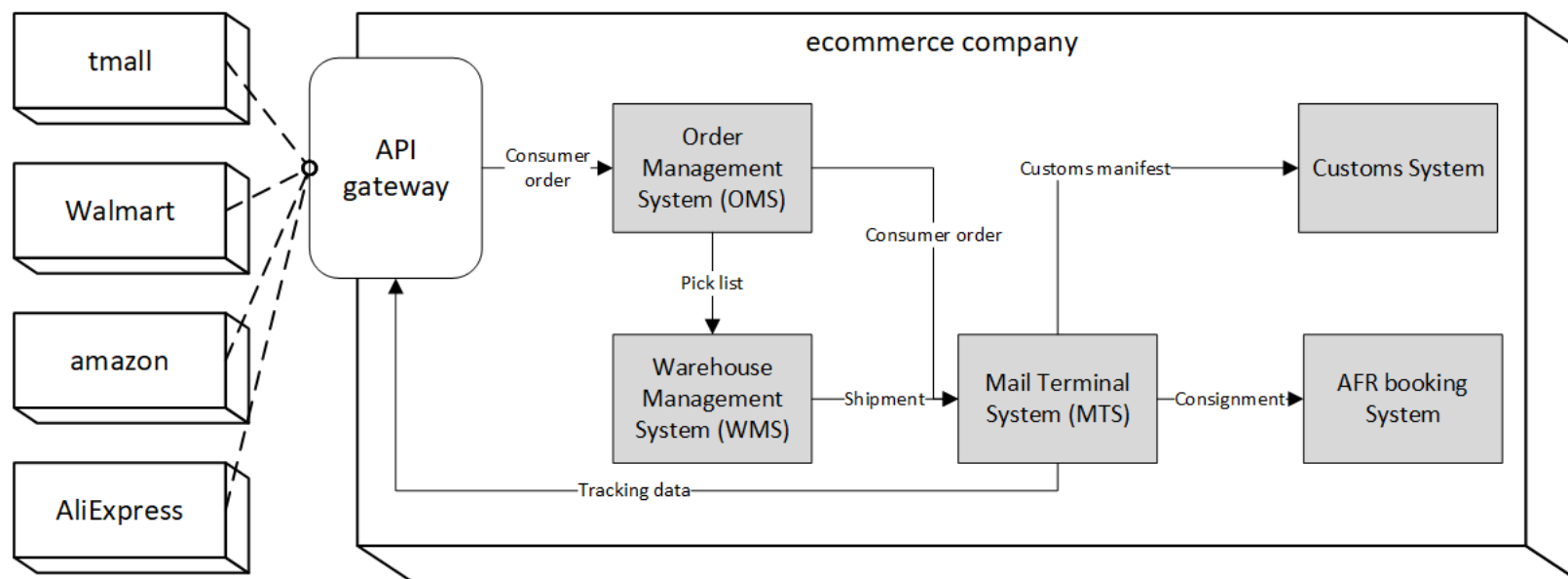
Shipments are handed over to airline and customs is cleared



# Order Fulfillment: Logistics at Origin Country



# Order Fulfillment: IT Systems for Export



## API Gateway: Definition

**API Gateway:** An API Gateway is a special software system that allows for exposing web services to external business partners. It accepts requests from customers, translates protocols and delegates them to internal IT systems. After completion, the gateway transfers the result to the client.

An API gateway can also orchestrate several service calls.

# API Gateway: Introduction

Watch the video and answer the following questions.

<https://www.f5.com/glossary/api-gateway>

Questions:

1. Can an API gateway only be used when already having web services?
2. Can an API gateway only be used for external partners?
3. Is the usage of an API gateway for free?
4. Why might there be a dedicated API just for mobile devices?



# API Gateway: Benefits

	Description	API
Single point of contact	<p>Single entry point for an organisation's web services</p> <ul style="list-style-type: none"> <li>• Dedicated contact point for business partners</li> <li>• Hides structure of IS architecture</li> </ul>	<p>API documentation consists of</p> <ul style="list-style-type: none"> <li>• Protocol (e.g. HTTP)</li> <li>• End point</li> <li>• Services and descriptions</li> <li>• Data definition (e.g. JSON)</li> <li>• Authentication</li> </ul>
Routing and conversion	<p>API Gateways forward service calls to respective web service</p> <ul style="list-style-type: none"> <li>• "Knows" corresponding information system</li> <li>• Converts data (if required)</li> </ul>	
Security	<p>Access control and data protections</p> <ul style="list-style-type: none"> <li>• Authentication for authorized parties (e.g. OAuth2)</li> <li>• Encryption for secure data transfer to external parties</li> </ul>	
Monitoring	<p>API Gateway monitors web service calls and data transfer</p> <ul style="list-style-type: none"> <li>• Central statistics on web service usage</li> <li>• Billing (pay-per-use)</li> </ul>	

## API Gateway: Example

Go to the following web page and answer the following questions.

DHL API gateway: <https://developer.dhl.com/>

Questions:

1. Which kind of services are provided on the gateway?
2. How is authentication be conducted?
3. Which endpoints are required for shipment tracking?
4. How is data transferred for creating a shipping label (Parcel EU)?
5. How is the “postnumber” for a customer validated?



## E-Commerce: Resources

- Wirtz, Bernd: “Digital Business and Electronic Commerce: Strategy, Business Models and Technology.” Springer, 2021

