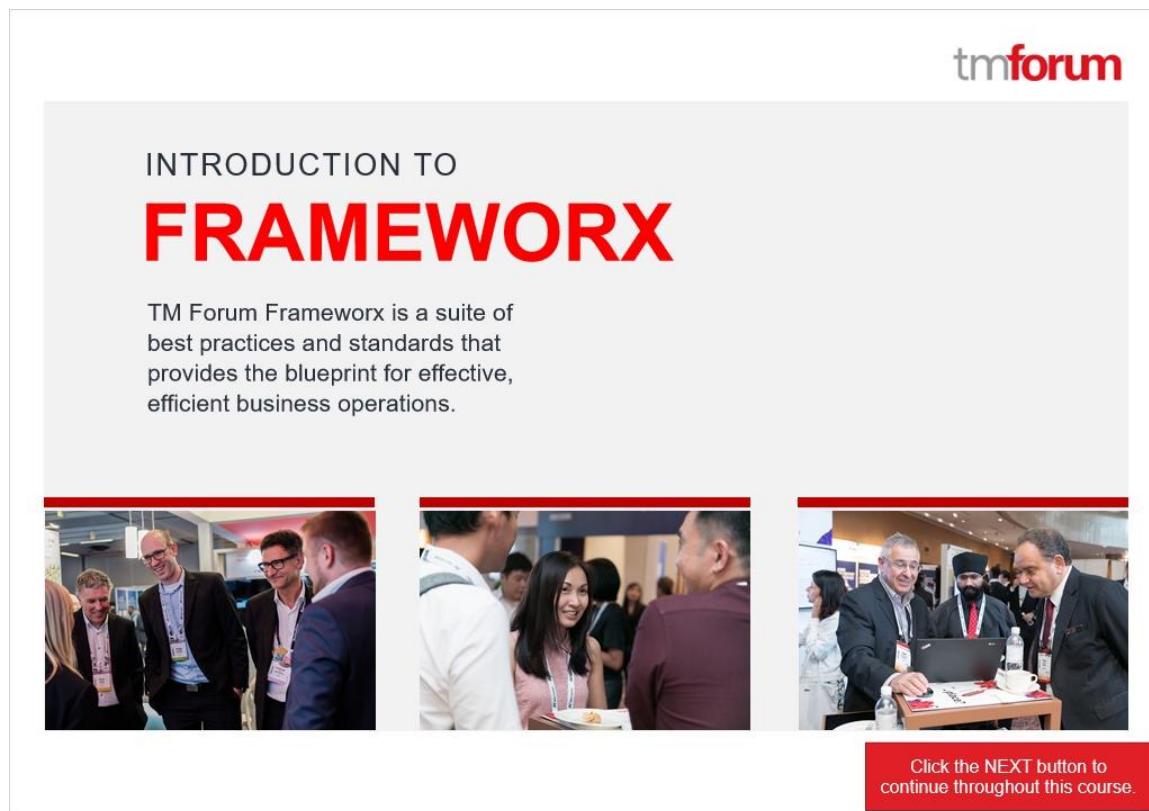


FRAMEWORX OVERVIEW - MODULE 1

INTRODUCTION

WELCOME



The slide features the TM Forum logo in the top right corner. The main title 'INTRODUCTION TO FRAMEWORX' is displayed in large, bold, black and red text. Below the title, a description states: 'TM Forum Frameworkx is a suite of best practices and standards that provides the blueprint for effective, efficient business operations.' Three photographs are shown below the text: two on the left showing groups of people at a networking event, and one on the right showing a group of people at a booth with a laptop and a water bottle.

INTRODUCTION TO
FRAMEWORX

TM Forum Frameworkx is a suite of best practices and standards that provides the blueprint for effective, efficient business operations.



Click the NEXT button to continue throughout this course.

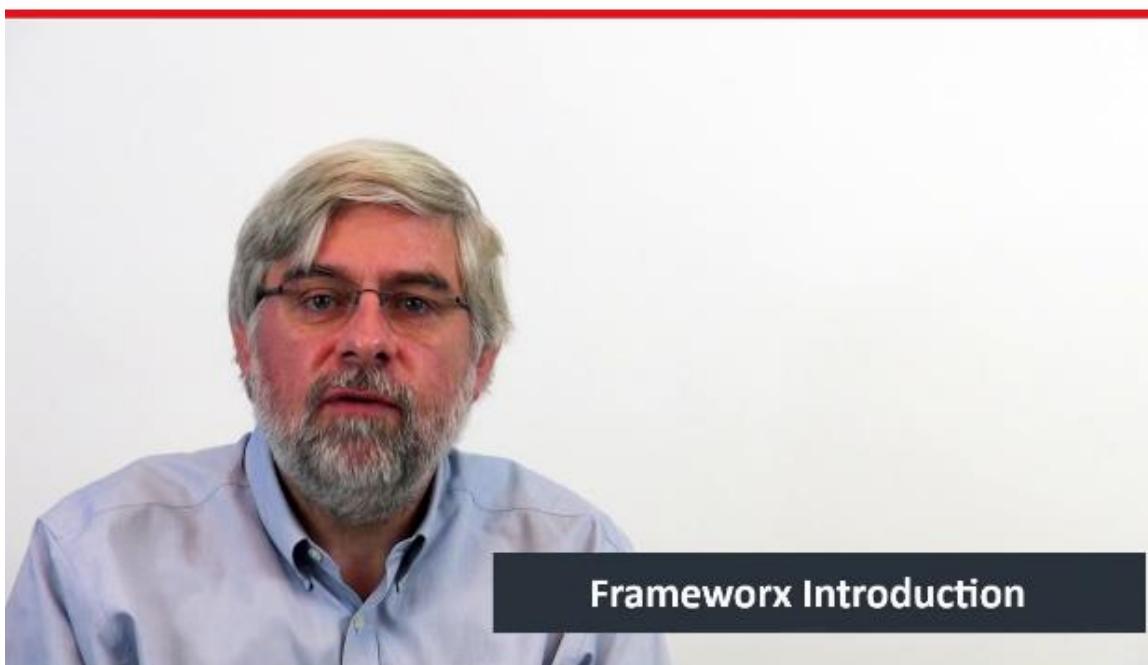
Notes:

FRAMEWORX INTRODUCTION

FRAMEWORX INTRODUCTION

FRAMEWORX INTRODUCTION

tm**forum**



Notes:

TODAY'S DIGITAL ECOSYSTEM (1 of 3)

TODAY'S DIGITAL ECOSYSTEM



Enterprises need to build a solid delivery capability that can:

- Engage effectively with customers
- Support an evolving portfolio of offerings

These enterprises work to differentiate itself and keep-up with the demands of its marketplace.

The best practices built around Frameworkx have been created by organizations that:

- Understand how they can lower their costs
- Move forward more quickly and safely by collaborating to solve challenges

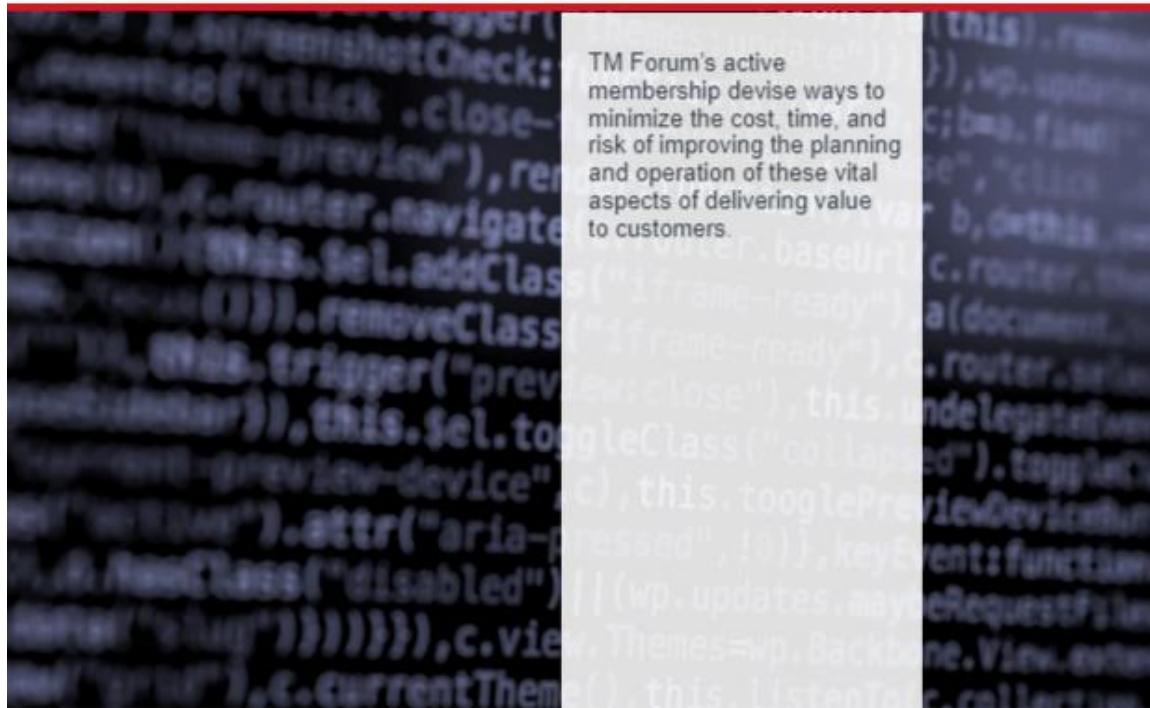
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Notes:

TODAY'S DIGITAL ECOSYSTEM (2 of 3)

TODAY'S DIGITAL ECOSYSTEM

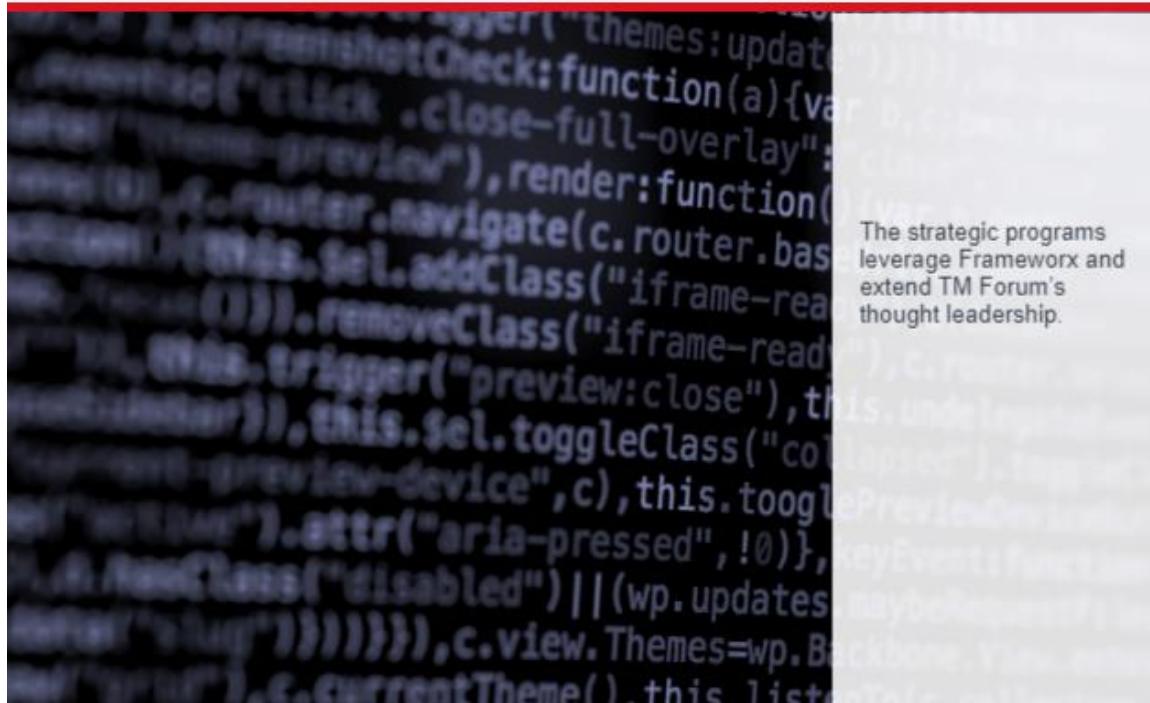


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TODAY'S DIGITAL ECOSYSTEM (3 of 3)

TODAY'S DIGITAL ECOSYSTEM

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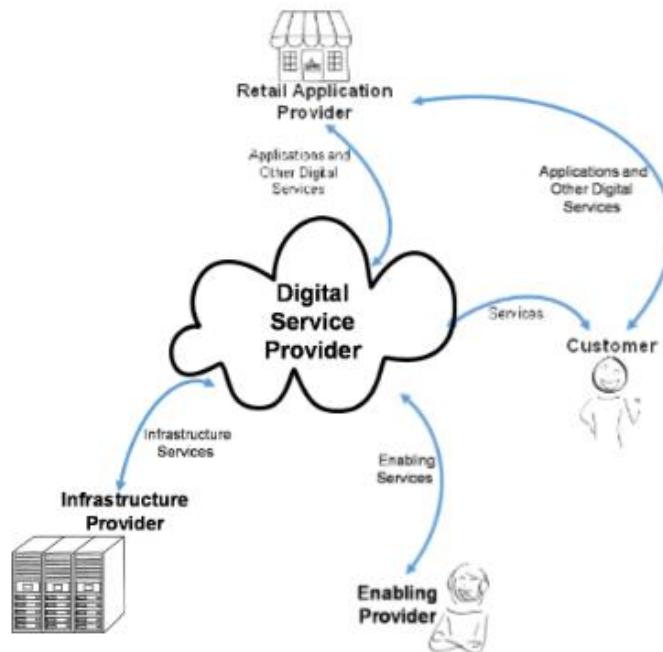
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THE VALUE FABRIC

THE VALUE FABRIC (1 of 7)

THE VALUE FABRIC

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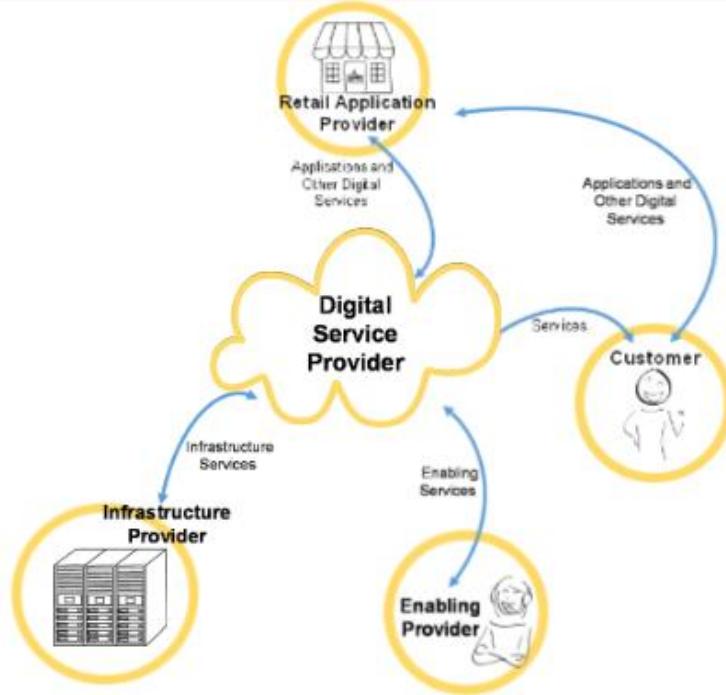


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THE VALUE FABRIC

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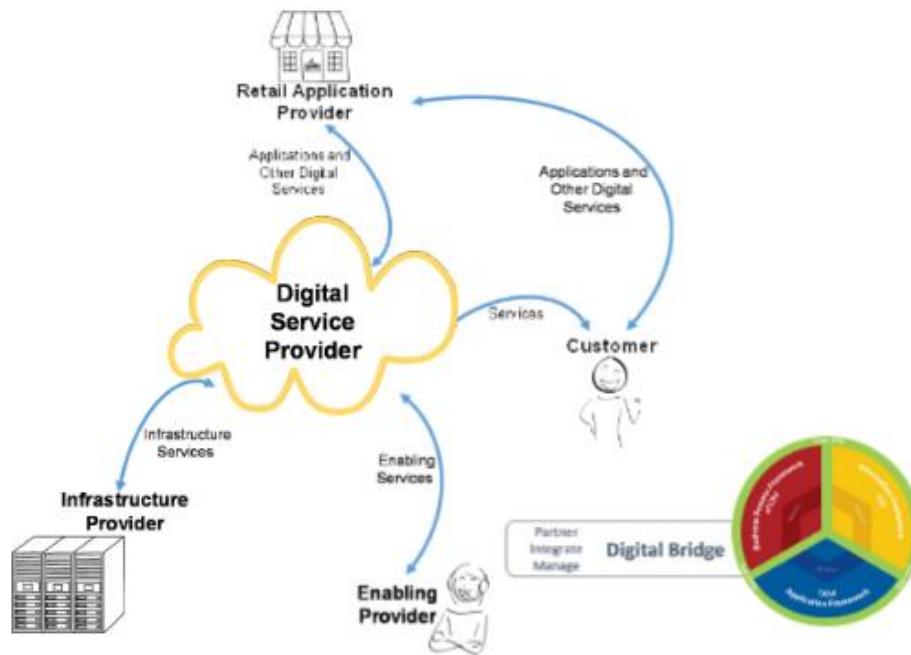


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THE VALUE FABRIC (3 of 7)

THE VALUE FABRIC

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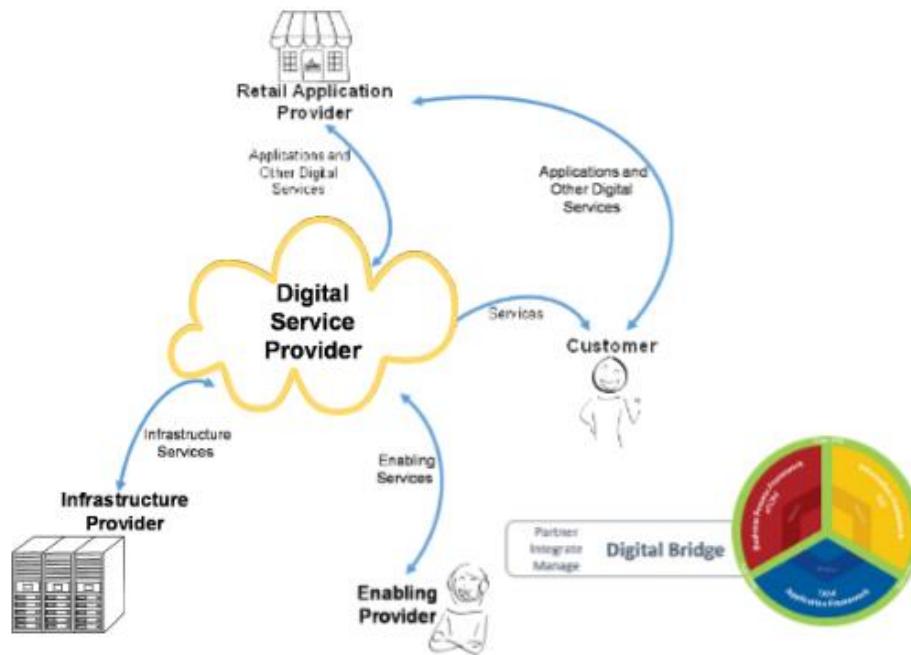


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THE VALUE FABRIC

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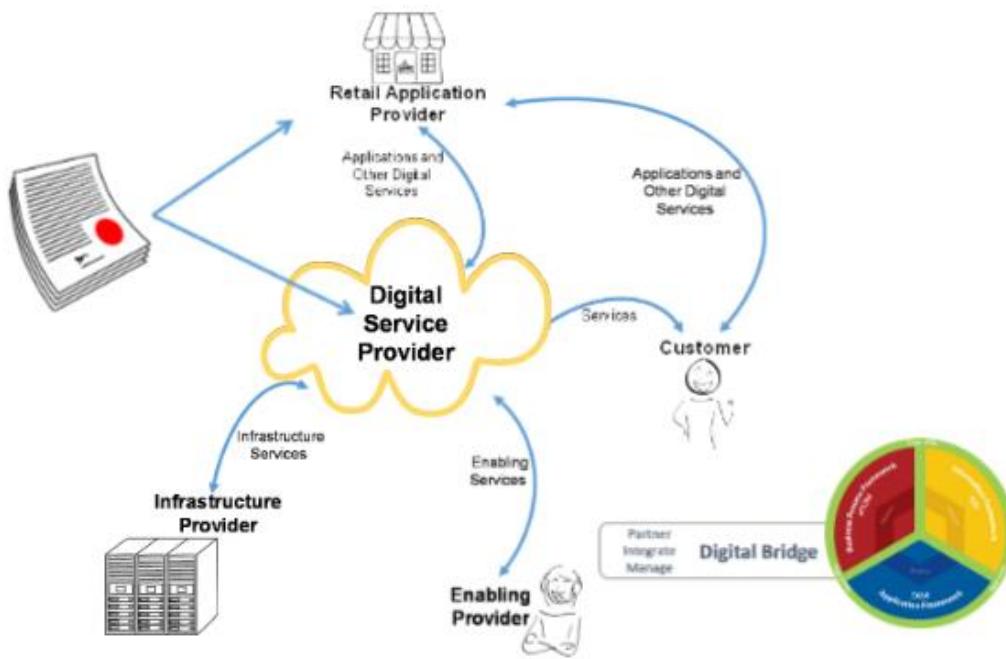


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THE VALUE FABRIC

tmforum

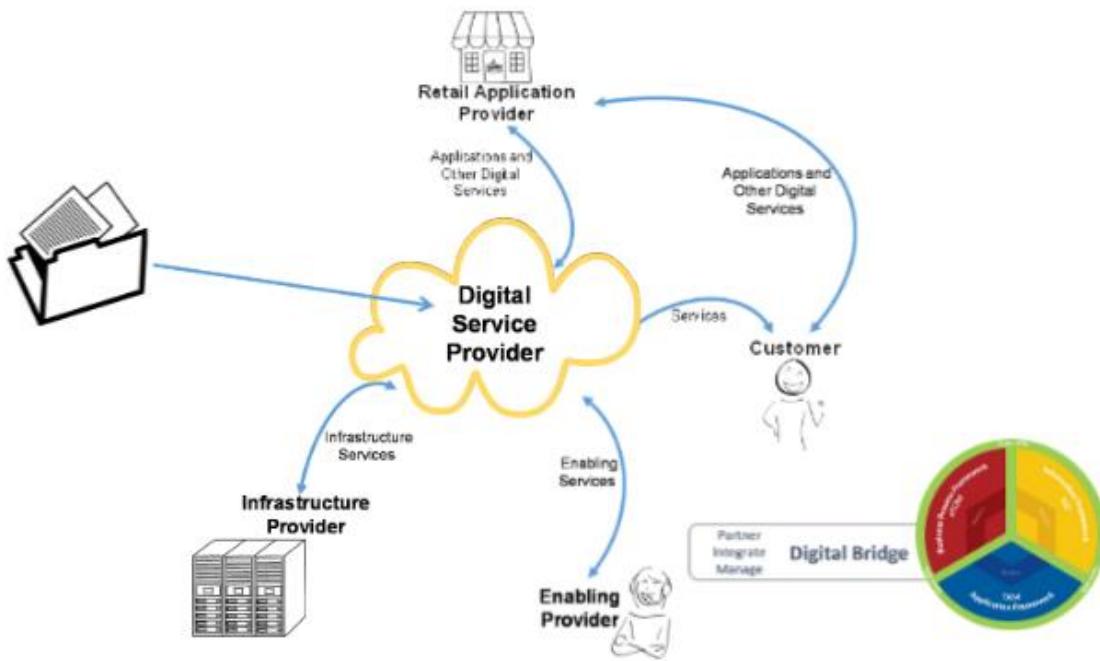


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THE VALUE FABRIC

tmforum

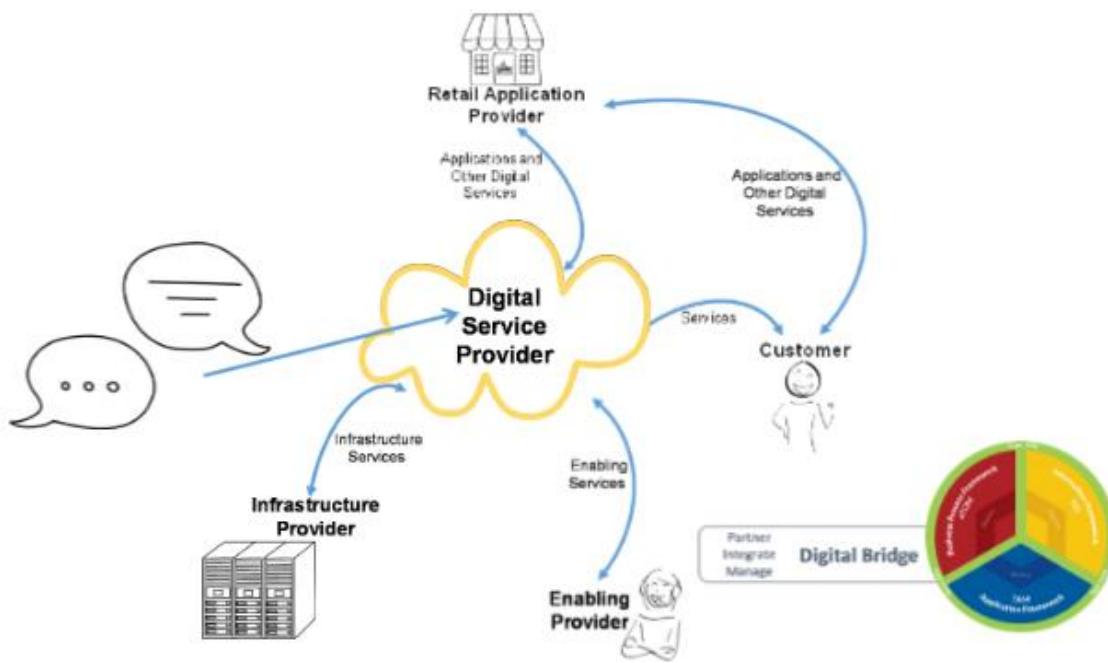


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THE VALUE FABRIC (7 of 7)

THE VALUE FABRIC

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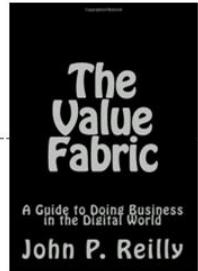


Notes:

THE VALUE FABRIC ONLINE BOOKSTORE

THE VALUE FABRIC ONLINE BOOKSTORE

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[Visit the TM Forum online bookstore](#)

To learn more about how The Value Fabric and Frameworkx provides a guide to doing business in the digital world.

Watch Andy Tiller explain how Frameworkx is used by AsiaInfo and AsiaInfo client companies.

Notes:

MORE ABOUT FRAMEWORX

FRAMEWORX APPLICATION

FRAMEWORX APPLICATION

tm**forum**



Dr Andy Tiller
VP of Product Marketing, AsiaInfo-Linkage Inc

Notes:

FRAMEWORK SUMMARY

FRAMEWORK SUMMARY



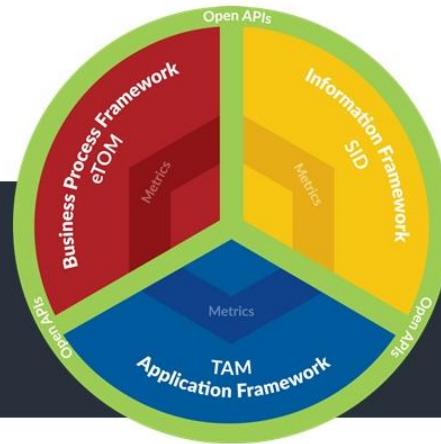
TM FORUM FRAMEWORK is a set of models, maps or templates for the architecture of any enterprise doing business in the digital world.

Any enterprise can map their own processes, data and applications portfolio to Framework components.

- Framework does not drive all businesses to transform in the same way.
- Framework design maps out generic components that can be configured in unique ways.

FrameworkX

The X at the end is the collective name for a group of Frameworks with "KS" at the end and supporting material that show you how to implement and use them.



Notes:

RECENT SURVEY



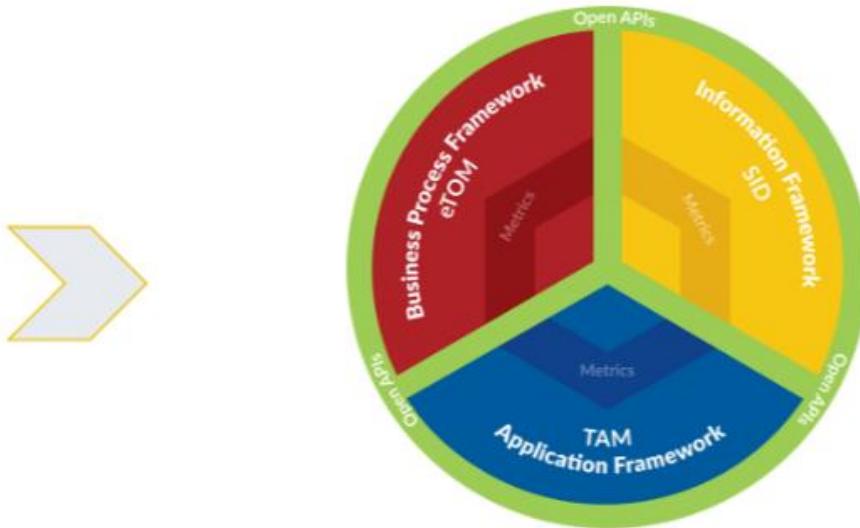
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FRAMEWORK COMPONENTS

THE COMPONENTS OF THE FRAMEWORK (1 of 3)

THE COMPONENTS OF THE FRAMEWORK

tmforum



Notes:

THE COMPONENTS OF THE FRAMEWORK (2 of 3)

THE COMPONENTS OF THE FRAMEWORK

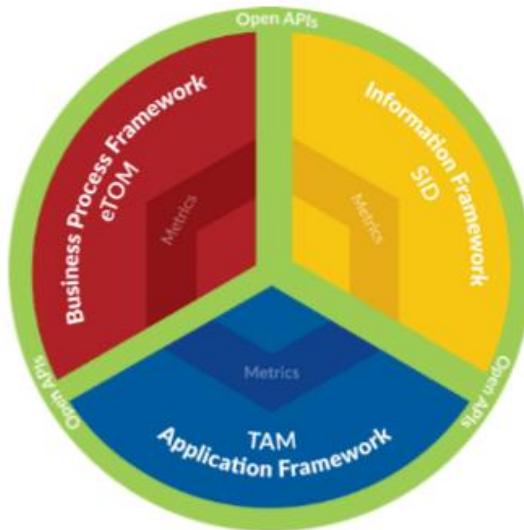


The Business Process Framework is a hierarchical catalog of key processes required to run a digital world enterprise.

The Information Framework provides a structured reference model and common vocabulary for the information required by an enterprise.

The Application Framework provides catalog of applications which support and/or implement business processes.

The Open APIs is a set of standard REST based APIs enabling rapid, repeatable, and flexible integration among operations and management systems.



Notes:

THE COMPONENTS OF THE FRAMEWORK (3 of 3)

THE COMPONENTS OF THE FRAMEWORK



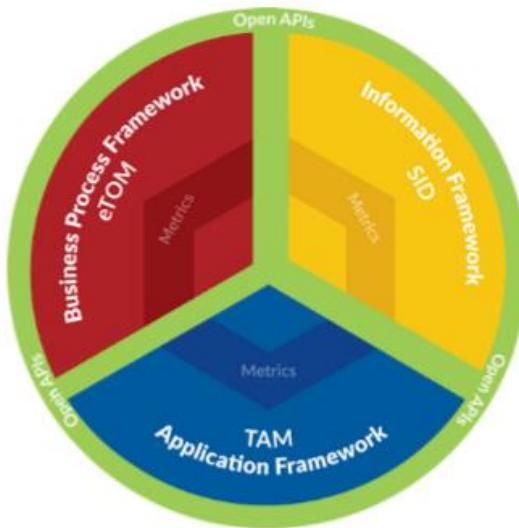
These four frameworks are often referred to as the core frameworks.

Business Metrics provide metrics and guidelines to ensure the operation of your enterprise is monitored for efficiency and effectiveness.

Best Practices provide pragmatic advice based on the core frameworks and the collective experience and expertise of TM Forum members.

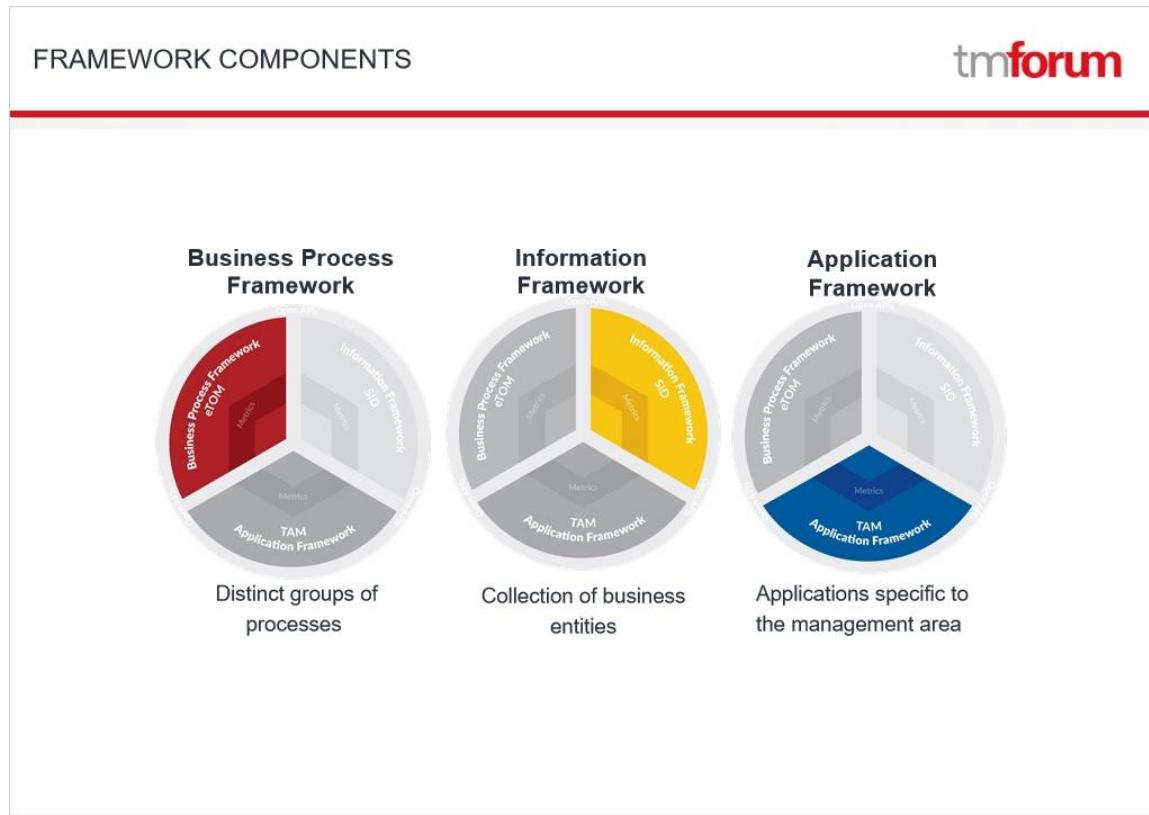
Best Practices includes:

- Detailed use cases for the standards found in the core frameworks
- Documented approaches such as instructional how-to guides and blueprints for the best way to approach a particular capability task or challenge



Notes:

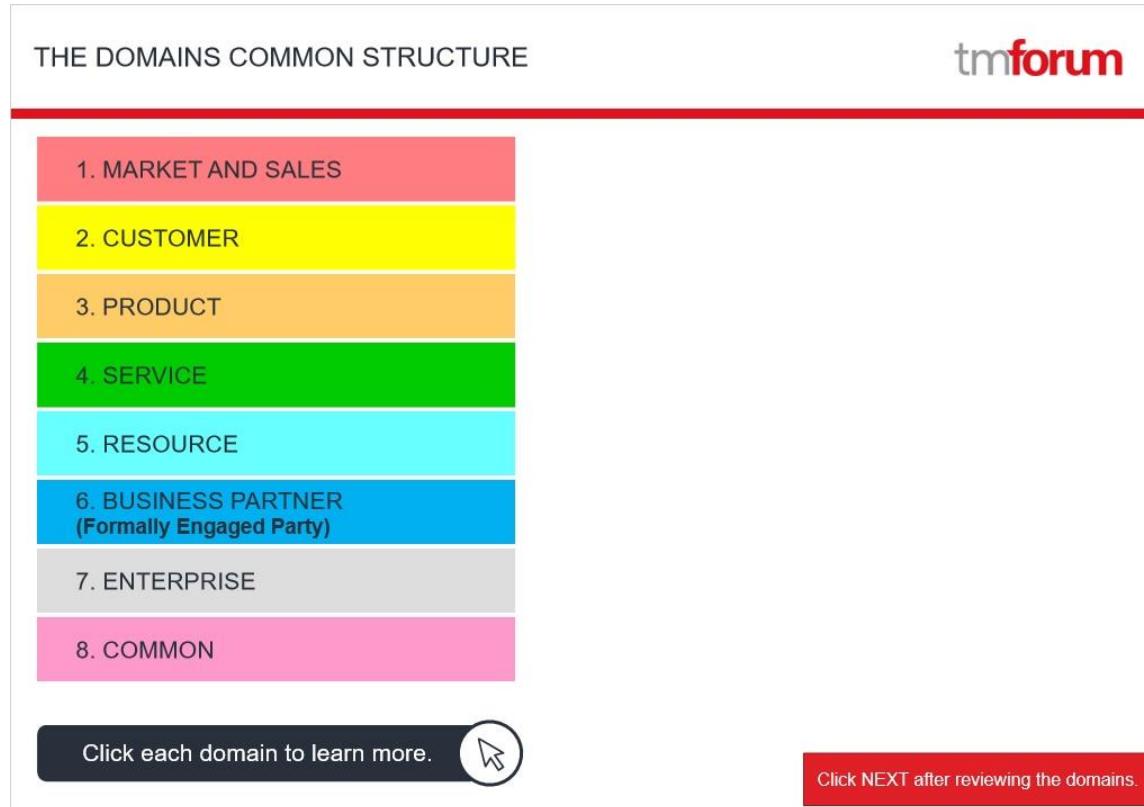
FRAMEWORK COMPONENTS



Notes:

THE DOMAINS COMMON STRUCTURE

THE DOMAINS COMMON STRUCTURE



Notes:

Market and Sales (Slide Layer)

THE DOMAINS COMMON STRUCTURE

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1. MARKET AND SALES

Sales includes:

- Sales contacts
- Leads and prospects through to the sales-force and sales statistics

2. CUSTOMER

3. PRODUCT

4. SERVICE

5. RESOURCE

**6. BUSINESS PARTNER
(Formally Engaged Party)**

7. ENTERPRISE

8. COMMON

Click each domain to learn more.

Click NEXT after reviewing the domains.

Notes:

Customer (Slide Layer)

THE DOMAINS COMMON STRUCTURE

tmforum

1. MARKET AND SALES	It represents:
3. CUSTOMER	<ul style="list-style-type: none">Individuals or organizations that obtain products from an enterprise, such as a service provider.All types of contact with the customer, the management of the relationship and the administration of customer data.
3. PRODUCT	Customer also includes:
4. SERVICE	<ul style="list-style-type: none">Customer bills for productsCollection of paymentOverdue accountsBilling inquiries and adjustments
5. RESOURCE	
6. BUSINESS PARTNER (Formally Engaged Party)	
7. ENTERPRISE	
8. COMMON	

Click each domain to learn more. 

Click NEXT after reviewing the domains.

Notes:

Product (Slide Layer)

THE DOMAINS COMMON STRUCTURE

tmforum

1. MARKET AND SALES

2. CUSTOMER

2. PRODUCT

4. SERVICE

5. RESOURCE

6. BUSINESS PARTNER
(Formally Engaged Party)

7. ENTERPRISE

8. COMMON

Is concerned with the lifecycle of products' lifecycle.

It includes:

- Strategic portfolio plans
- Products offered
- Product performance
- Product usage
- Product instances

Click each domain to learn more.

Click NEXT after reviewing the domains.

Notes:

Service (Slide Layer)

THE DOMAINS COMMON STRUCTURE

tmforum

1. MARKET AND SALES	Is concerned with the definition, development and operational aspects of Services used to realize offerings to the market. This includes: <ul style="list-style-type: none">• Agreement on Service levels to be offered• Deployment and configuration of Services• Management of problems in Service installation• Deployment• Usage or performance• Quality analysis• Planning for future services• Service enhancement or retirement• Capacity
2. CUSTOMER	
3. PRODUCT	
4. SERVICE	
5. RESOURCE	
6. BUSINESS PARTNER (Formally Engaged Party)	
7. ENTERPRISE	
8. COMMON	

Click each domain to learn more. 

Click NEXT after reviewing the domains.

Notes:

Resource (Slide Layer)

THE DOMAINS COMMON STRUCTURE

tmforum

1. MARKET AND SALES	Is concerned with the definition, development and operational aspects of the applications, computing and networks which represent the infrastructure of an enterprise.
2. CUSTOMER	Resource management has three important objectives:
3. PRODUCT	<ol style="list-style-type: none">1. Associate Resources to Products and Services and provide a detailed enough set of Resource entities to facilitate this association.2. Ensure that Resources can support and deliver Products offered by the enterprise.3. Enable strategy and planning processes to be defined.
4. SERVICE	
5. RESOURCE	
6. BUSINESS PARTNER (Formally Engaged Party)	
7. ENTERPRISE	
8. COMMON	

Click each domain to learn more. 

Click NEXT after reviewing the domains.

Notes:

Business Partner (Slide Layer)

THE DOMAINS COMMON STRUCTURE

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1. MARKET AND SALES	Includes all data associated with individuals or organizations that are involved with an enterprise.
2. CUSTOMER	Engaged Party represents: <ul style="list-style-type: none">Planning of strategies for engagement with partiesAll types of contact with the partyThe management of the relationshipThe administration of party data
3. PRODUCT	The Engaged Party Domain also includes: <ul style="list-style-type: none">Data and processes related to the party bills for productsCollection of paymentOverdue accountsBilling inquiries and adjustments
4. SERVICE	
5. RESOURCE	
6. BUSINESS PARTNER (Formally Engaged Party)	
7. ENTERPRISE	
8. COMMON	

Click each domain to learn more. 

Click NEXT after reviewing the domains.

Notes:

Enterprise (Slide Layer)

THE DOMAINS COMMON STRUCTURE

tmforum

1. MARKET AND SALES

2. CUSTOMER

3. PRODUCT

4. SERVICE

5. RESOURCE

6. BUSINESS PARTNER
(Formally Engaged Party)

7. ENTERPRISE

8. COMMON

Provides support and sets policy for the overall enterprise. It also includes activities that are common to all enterprises across all industries such as accounting and human resource management.

Click each domain to learn more.

Click NEXT after reviewing the domains.

Notes:

Common (Slide Layer)

THE DOMAINS COMMON STRUCTURE

tmforum

1. MARKET AND SALES

2. CUSTOMER

3. PRODUCT

4. SERVICE

5. RESOURCE

6. BUSINESS PARTNER
(Formally Engaged Party)

7. ENTERPRISE

8. COMMON

Represents business entities, processes and applications that are shared across two or more domains. This domain is uniquely named and specialized in each core framework.

Click each domain to learn more.

Click NEXT after reviewing the domains.

Notes:

CREATING VALUE FROM FRAMEWORK

CREATING VALUE FROM FRAMEWORK

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Provides a template to streamline product and service delivery.

Improves customer experience and customer retention.

Business processes can be simplified, optimized and automated.

Reduced the cost and risk of integrating multi-vendor solutions.

Speeds up and improves the procurement process.

Notes:

TELEKOM MALAYSIA CASE STUDY

TELEKOM MALAYSIA CASE STUDY

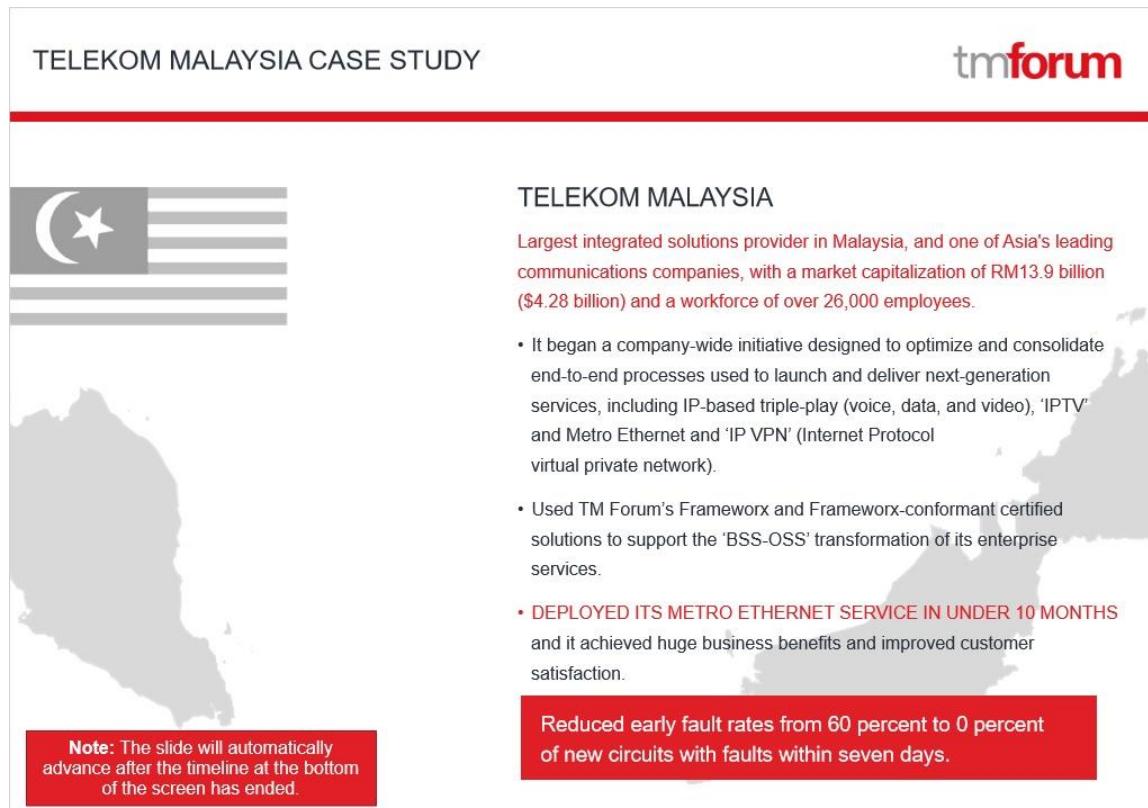
TELEKOM MALAYSIA CASE STUDY

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Here is a look at Framework in action in a case study. 	1. ABOUT TELEKOM MALAYSIA 	2. WIDESPREAD USES 
3. STANDARDIZE 	4. FX - DEPLOYMENT 	5. MINIMAL MANUAL INTERVENTION 
6. FX - SOLUTIONS 	7. TIME TO INSTALL 	<p>Click each in order, and learn more.</p> <p>Click NEXT after reviewing the case study.</p>

Notes:

1 – About Telekom Malaysia (Slide Layer)



The slide features a red header bar with the text "TELEKOM MALAYSIA CASE STUDY" on the left and the "tmforum" logo on the right. Below the header is a large image of the Malaysian flag and a map of Malaysia. A red note box at the bottom left contains a note about automatic slide advancement. To the right, a section titled "TELEKOM MALAYSIA" describes the company as the largest integrated solutions provider in Malaysia and one of Asia's leading communications companies. It highlights a company-wide initiative to optimize processes, the deployment of Metro Ethernet service, and reduced fault rates. A red callout box summarizes these achievements.

TELEKOM MALAYSIA CASE STUDY

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TELEKOM MALAYSIA

Largest integrated solutions provider in Malaysia, and one of Asia's leading communications companies, with a market capitalization of RM13.9 billion (\$4.28 billion) and a workforce of over 26,000 employees.

- It began a company-wide initiative designed to optimize and consolidate end-to-end processes used to launch and deliver next-generation services, including IP-based triple-play (voice, data, and video), 'IPTV' and Metro Ethernet and 'IP VPN' (Internet Protocol virtual private network).
- Used TM Forum's Frameworx and Frameworx-conformant certified solutions to support the 'BSS-OSS' transformation of its enterprise services.
- **DEPLOYED ITS METRO ETHERNET SERVICE IN UNDER 10 MONTHS** and it achieved huge business benefits and improved customer satisfaction.

Reduced early fault rates from 60 percent to 0 percent of new circuits with faults within seven days.

Note: The slide will automatically advance after the timeline at the bottom of the screen has ended.

Notes:

2 - Widespread Uses (Slide Layer)

TELEKOM MALAYSIA CASE STUDY

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WIDESPREAD USES

Prior to the project, the organization faced challenges such as:

- Widespread use of manual, non-standard processes resulting in high operating expenditure.
- Fragmented, non-scalable IT architecture and processes, which it determined were impeding growth.
- Customized implementations that could not support end-to-end business processes.
- High fault rates, poor order visibility and long time-to deliver, due to orders captured and tracked in multiple non-standard systems.
- Orders submitted for fulfillment with little verification of ability to deliver.
- Manual tracking and activation of inventory resource assignments, resulting in long order cycle time.
- Revenue leakage, due to discrepancies between customer relationship management (**CRM**), billing and inventory systems, and reactive jeopardy management.

Note: The slide will automatically advance after the timeline at the bottom of the screen has ended.

Notes:

3 - Standardize (Slide Layer)

TELEKOM MALAYSIA CASE STUDY

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STANDARDIZE

The primary objectives of the implementation were to simplify, standardize and increase automation of end-to-end processes that the company used to deliver **Metro Ethernet and Internet Protocol virtual private network or 'IP VPN'** services.

It also sought to enhance operational efficiency and to improve the overall enterprise customer experience.



The project focused on the following business key performance indicators:

- Time to install
- Time to restore
- Order fallout and fulfillment efficiency
- Early fault rate
- Repeat faults
- Customer turnaround time

Note: The slide will automatically advance after the timeline at the bottom of the screen has ended.

Notes:

4 - FX Deployment (Slide Layer)

TELEKOM MALAYSIA CASE STUDY

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FX-Deployment

- For Project **NOVA**, Telekom Malaysia chose to deploy a TM Forum standards-based architecture to reduce cost and risk, increase flexibility and optimize operations.
- The new '**BSS-OSS**' architecture for the **NOVA Metro Ethernet** and '**IP VPN**' implementation was modeled according to the TM Forum's Business Process Framework.

Telekom Malaysia started from the ground-up in developing processes to address limitations and enable future growth opportunities.

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Notes:

5 - Minimal Manual Intervention (Slide Layer)

TELEKOM MALAYSIA CASE STUDY

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MINIMAL MANUAL INTERVENTION

These new processes were based on Framework concepts such as:

- Minimal manual intervention between processes
- Higher usability of data
- Auditability and traceability in systems and processes
- Tight OSS coupling, allowing for flow-through provisioning
- Integrated systems to minimize complexity in processing.
- A single view of customer information and services

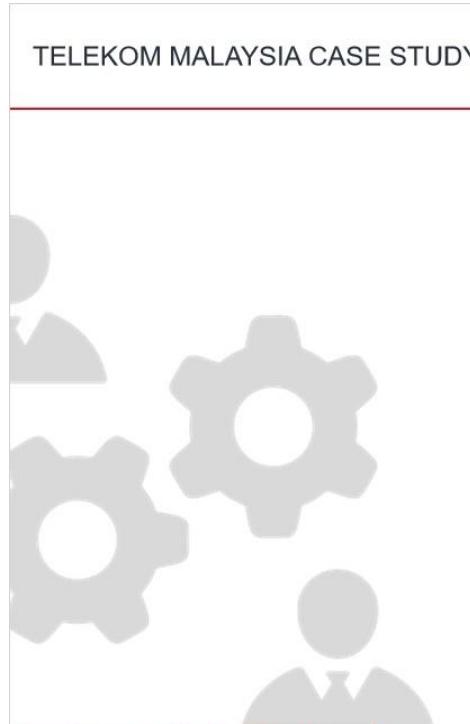
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Notes:

6 - FX2 (Slide Layer)

TELEKOM MALAYSIA CASE STUDY

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FX

The Information Framework provided definitions of important data objects as a baseline, and accelerated both the solution design and the subsequent build phase of the program.

The Information Framework was used to finalize cross-application interface contracts and the integration build, and the use of pre-integrated, productized, Frameworx-certified solutions ensured alignment with TM Forum's industry standard information model.

Telekom Malaysia was able to launch Metro Ethernet services in under 10 months.

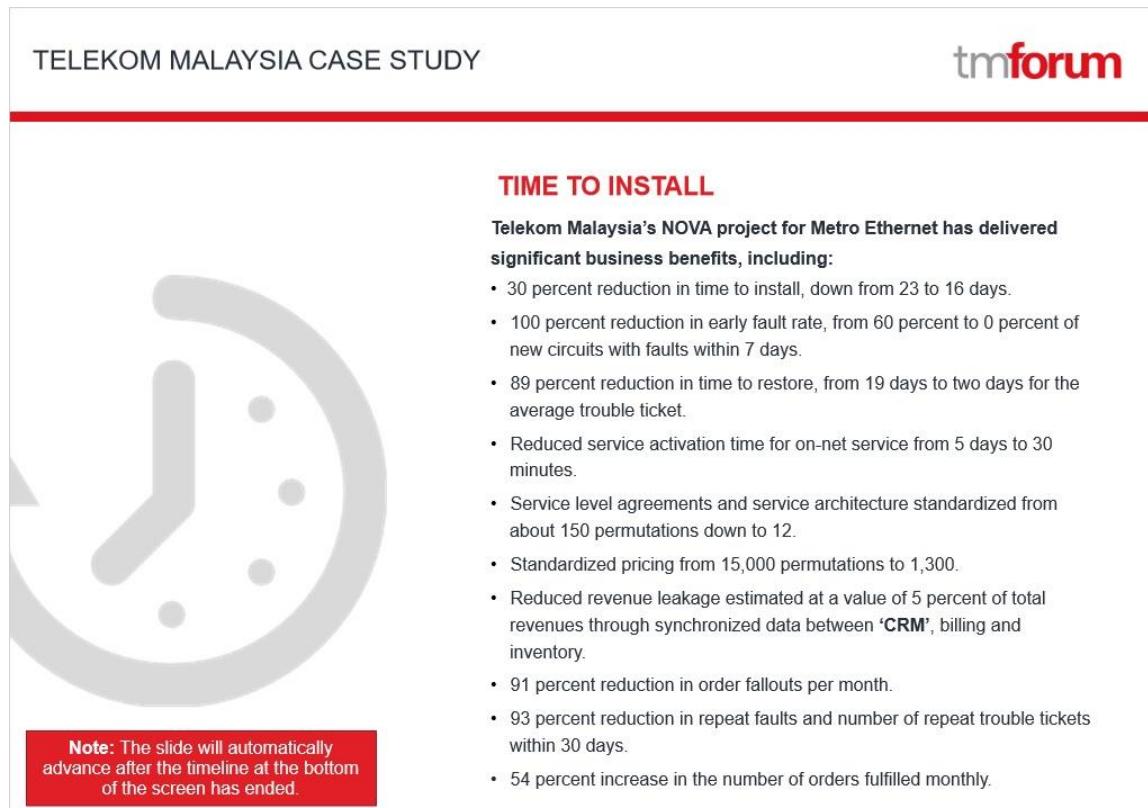
Telekom Malaysia:

- Used the Application Framework to provide a complementary view of a reference systems landscape for the program.
- Used Frameworx-certified solutions whenever possible.
- Used during initial procurement and vendor selection exercises to outline the roles of the various applications that would be a part of the solution to avoid duplication of capabilities.

Note: The slide will automatically advance after the timeline at the bottom of the screen has ended.

Notes:

7 - Time to Install (Slide Layer)



The slide features a large grey circular icon on the left containing a stylized 'J' shape and three small dots. At the top, it says 'TELEKOM MALAYSIA CASE STUDY' and has the 'tmforum' logo. Below the timeline icon, a red note box contains the text: 'Note: The slide will automatically advance after the timeline at the bottom of the screen has ended.' The main content area is titled 'TIME TO INSTALL' and discusses business benefits, followed by a bulleted list of achievements.

TIME TO INSTALL

Telekom Malaysia's NOVA project for Metro Ethernet has delivered significant business benefits, including:

- 30 percent reduction in time to install, down from 23 to 16 days.
- 100 percent reduction in early fault rate, from 60 percent to 0 percent of new circuits with faults within 7 days.
- 89 percent reduction in time to restore, from 19 days to two days for the average trouble ticket.
- Reduced service activation time for on-net service from 5 days to 30 minutes.
- Service level agreements and service architecture standardized from about 150 permutations down to 12.
- Standardized pricing from 15,000 permutations to 1,300.
- Reduced revenue leakage estimated at a value of 5 percent of total revenues through synchronized data between 'CRM', billing and inventory.
- 91 percent reduction in order fallouts per month.
- 93 percent reduction in repeat faults and number of repeat trouble tickets within 30 days.
- 54 percent increase in the number of orders fulfilled monthly.

Notes:

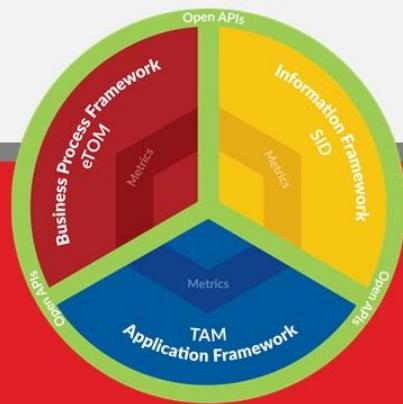
CASE STUDY SUMMARY

CASE STUDY SUMMARY

tmforum

“It is important to note that without TM Forum’s Business Process Framework and Frameworkx-certified solutions, it would have been impossible to consolidate consumer, business and wholesale services on a single platform. Process and IT architecture standardization across all lines of business is one of the single biggest benefits of the project.”

Chief Strategy Officer
Ahmad Azhar Yahya



WRAP UP

WRAP UP

This slide template for a 'WRAP UP' section features a white header bar with the word 'WRAP UP' on the left and the 'tmforum' logo on the right. Below this is a large white area for content, which includes a summary of the module's content. At the bottom, there is a grey footer bar containing two buttons: a red 'RESTART' button on the left and a dark blue 'EXIT MODULE' button on the right.

WRAP UP

tmforum

This wraps up the first module, which introduced how enterprises do business in today's digital world followed by a summary of **FRAMEWORX** and its components.

RESTART EXIT MODULE

Notes:

FRAMEWORK OVERVIEW - MODULE 2

INTRODUCTION

WELCOME

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The Business Process Framework

TM Forum Business Process Framework sets out to standardize the purpose, names and descriptions of the various tasks involved in running an agile enterprise.



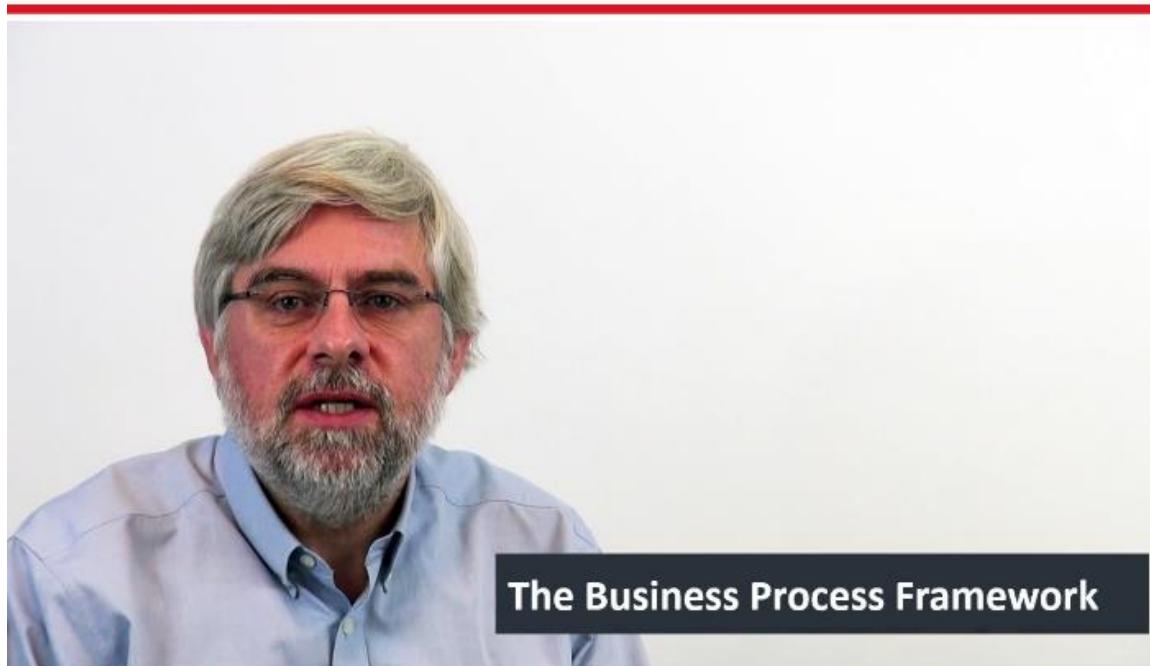
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Notes:

BUSINESS PROCESS FRAMEWORK INTRODUCTION

BUSINESS PROCESS FRAMEWORK INTRODUCTION

tmforum



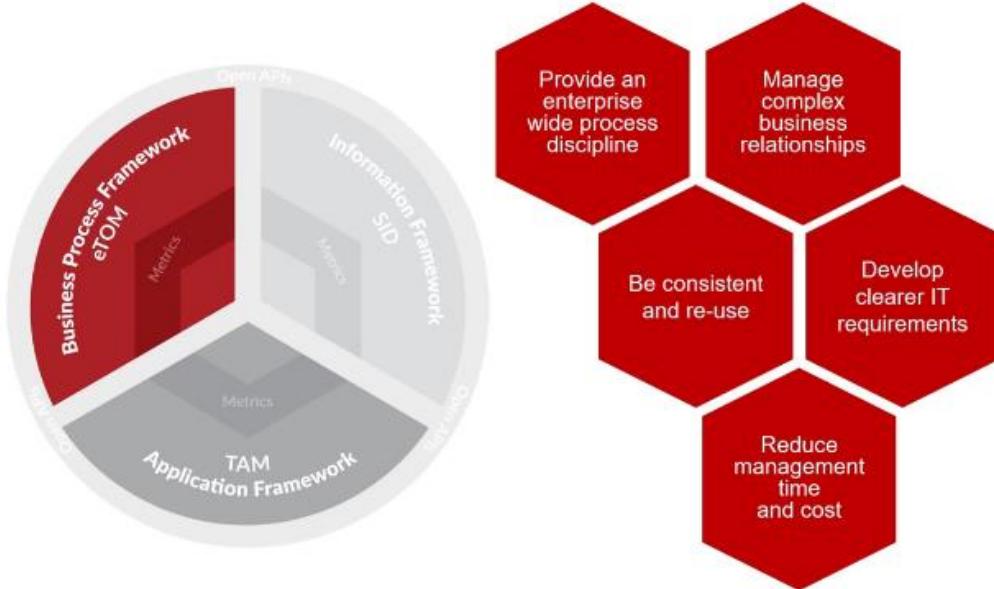
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BUSINESS PROCESS FRAMEWORK OVERVIEW

BUSINESS PROCESS FRAMEWORK OVERVIEW

BUSINESS PROCESS FRAMEWORK OVERVIEW

tmforum

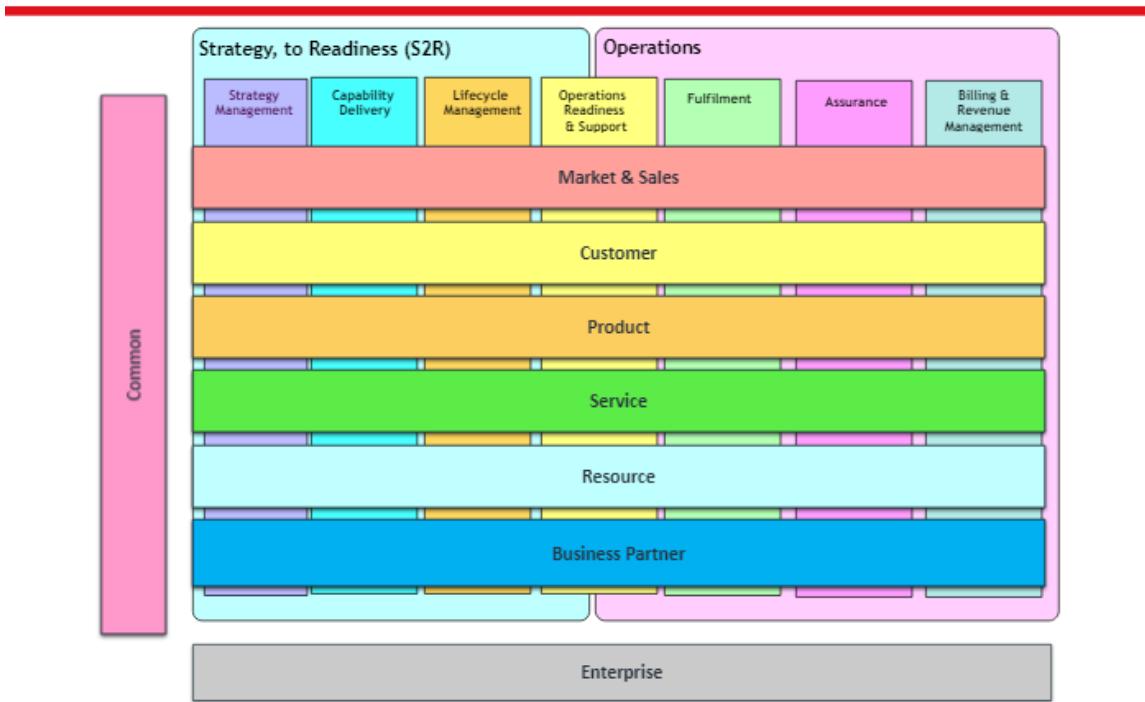


Notes:

2.2 THE EIGHT DOMAINS

THE EIGHT DOMAINS

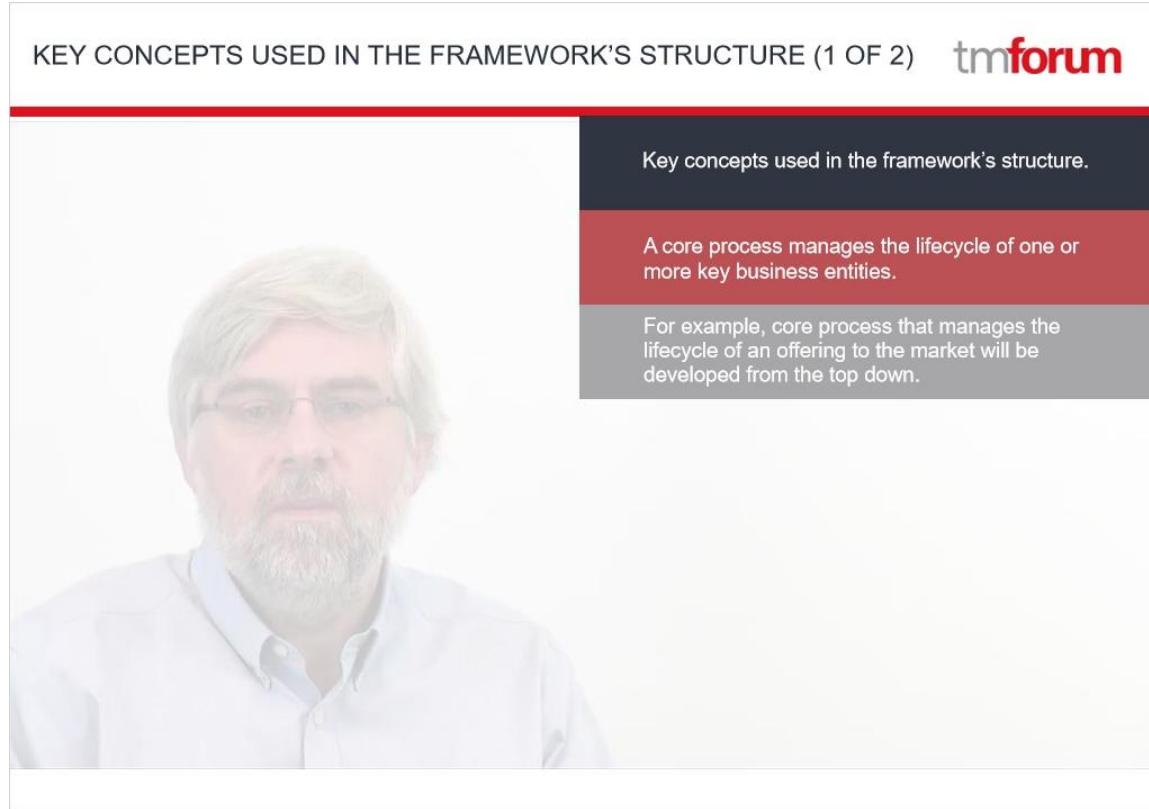
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Notes:

KEY CONCEPTS USED IN THE FRAMEWORK'S STRUCTURE

KEY CONCEPTS USED IN THE FRAMEWORK'S STRUCTURE (1 OF 2)



KEY CONCEPTS USED IN THE FRAMEWORK'S STRUCTURE (1 OF 2) **tmforum**

Key concepts used in the framework's structure.

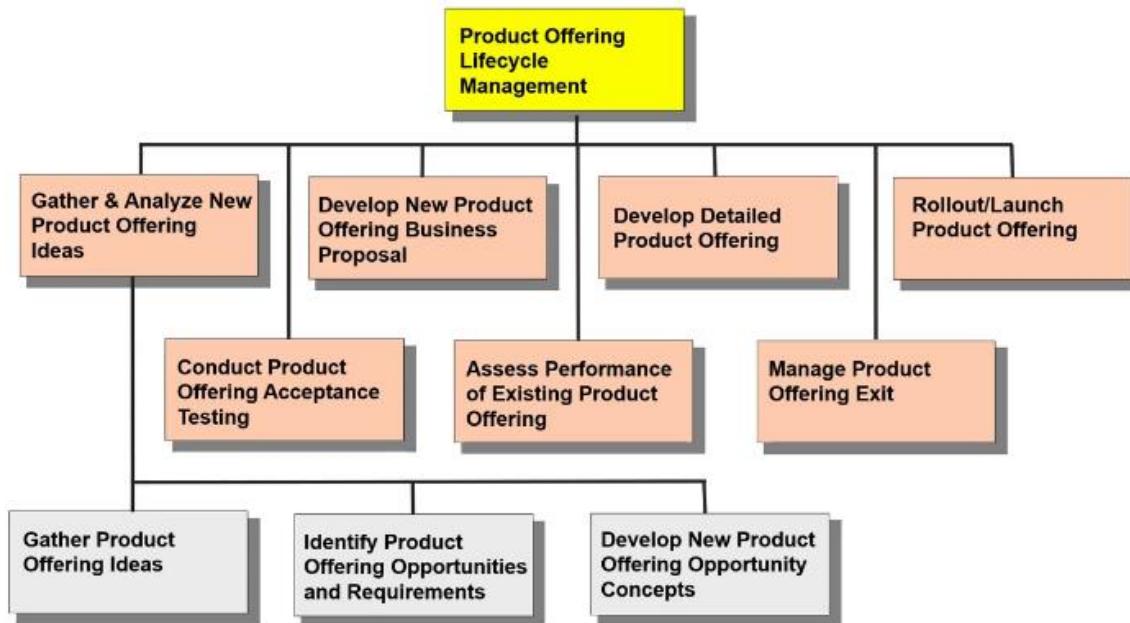
A core process manages the lifecycle of one or more key business entities.

For example, core process that manages the lifecycle of an offering to the market will be developed from the top down.

Notes:

3.2 KEY CONCEPTS USED IN THE FRAMEWORK'S STRUCTURE (2 OF 2)

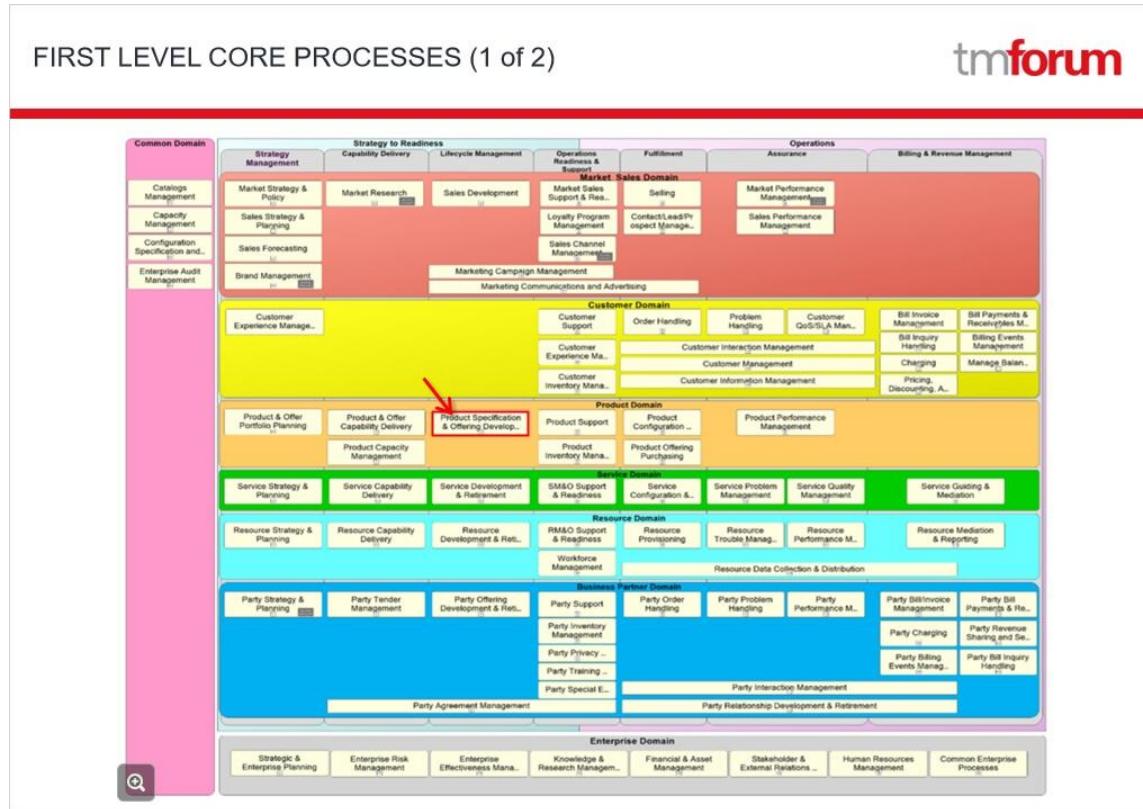
KEY CONCEPTS USED IN THE FRAMEWORK'S STRUCTURE (2 OF 2) 



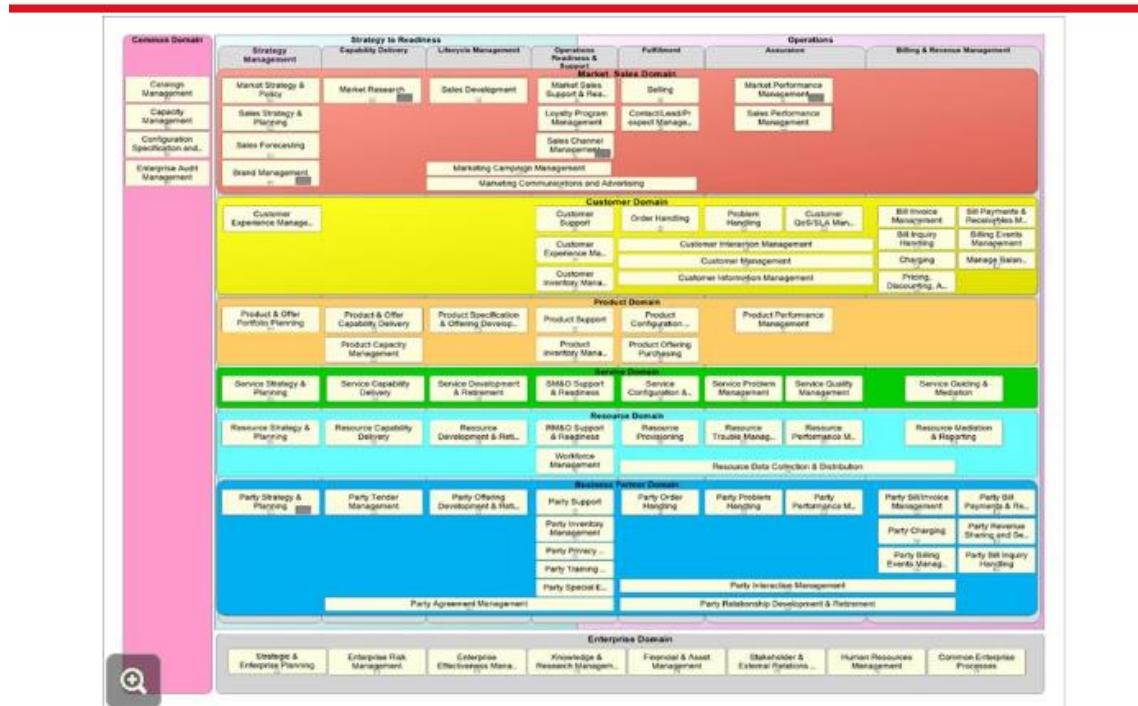
Notes:

FIRST LEVEL CORE PROCESSES

FIRST LEVEL CORE PROCESSES (1 of 2)



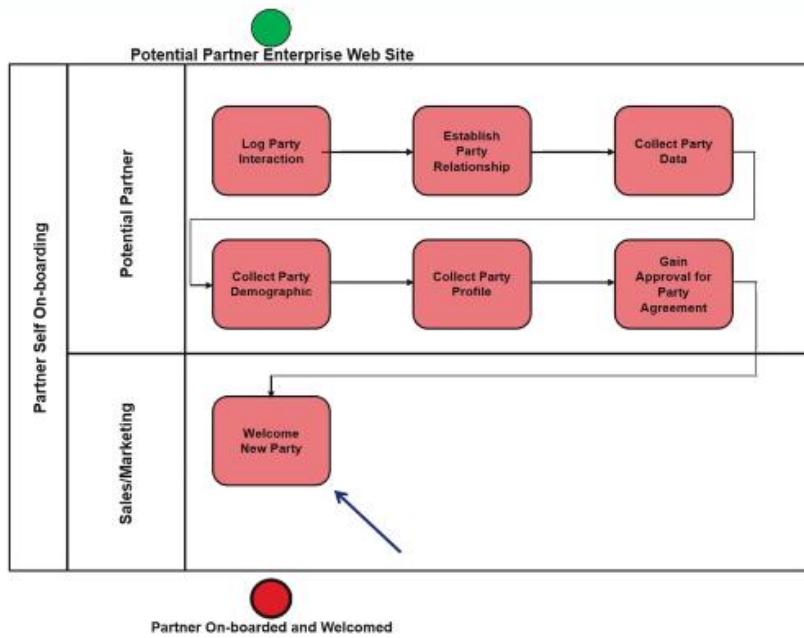
Notes:

FIRST LEVEL CORE PROCESSES (2 of 2)**FIRST LEVEL CORE PROCESSES (2 of 2)****tmforum****Notes:**

4.3 SIMPLE PROCESS FLOW EXAMPLE

SIMPLE PROCESS FLOW EXAMPLE

tmforum



Notes:

BUSINESS FRAMEWORK USES

BUSINESS PROCESS FRAMEWORK USES

BUSINESS PROCESS FRAMEWORK USES

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Use the Business Process Framework to...



Define project scope



Transform business processes



Support procurement requests



Map roles /organizations



Focus process related discussions

Notes:

CASE STUDY

BUSINESS PROCESS FRAMEWORK CASE STUDY

BUSINESS PROCESS FRAMEWORK CASE STUDY

tmforum



Business Process Framework Case Study

Notes:

WRAP UP

WRAP UP

The slide features a red header bar with the word "WRAP UP" on the left and the "tmforum" logo on the right. Below the header is a large white area containing text about the module's content. At the bottom is a grey footer bar with two buttons: "RESTART" on the left and "EXIT MODULE" on the right.

This wraps up the second module, which introduced you to the Business Process Framework, showed you a case study that described how TM Forum member, AT&T used the framework and offered you an opportunity to test your knowledge.

RESTART **EXIT MODULE**

Notes:

FRAMEWORK OVERVIEW - MODULE 3

INTRODUCTION

WELCOME

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The Information Framework

TM Forum Information Framework is an enterprise-wide information decomposition or structured outline and model.



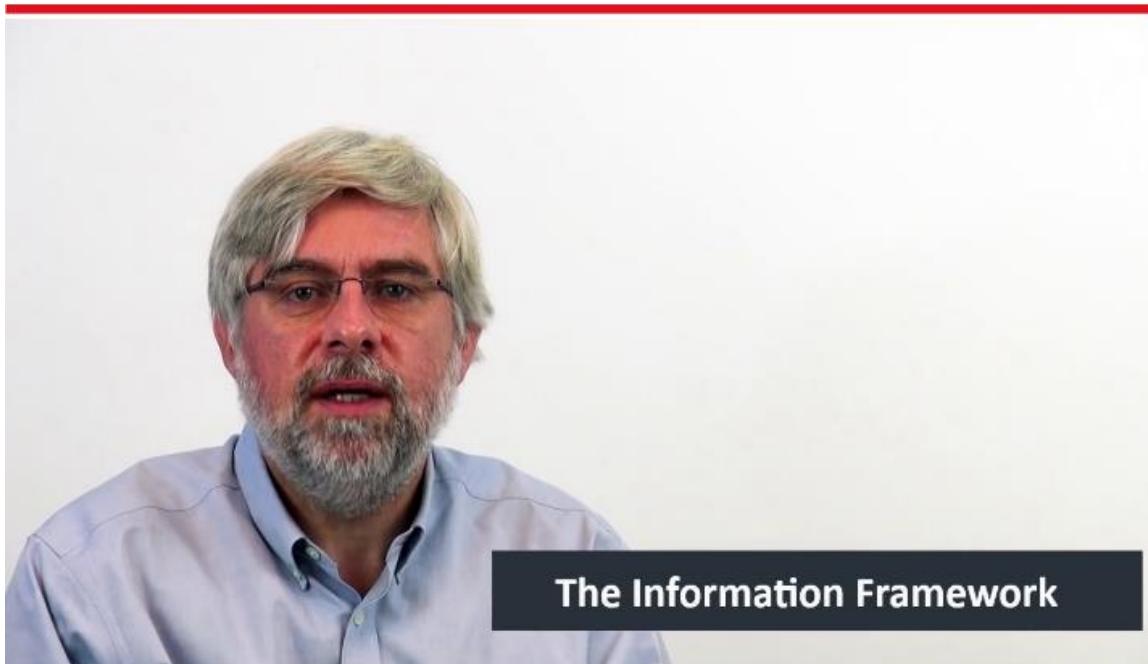
Click the NEXT button to continue throughout this course.

Notes:

INFORMATION FRAMEWORK INTRODUCTION

INFORMATION FRAMEWORK INTRODUCTION

tmforum



Notes:

THE INFORMATION FRAMEWORK

INFORMATION FRAMEWORK GOALS (1 of 2)

INFORMATION FRAMEWORK GOALS



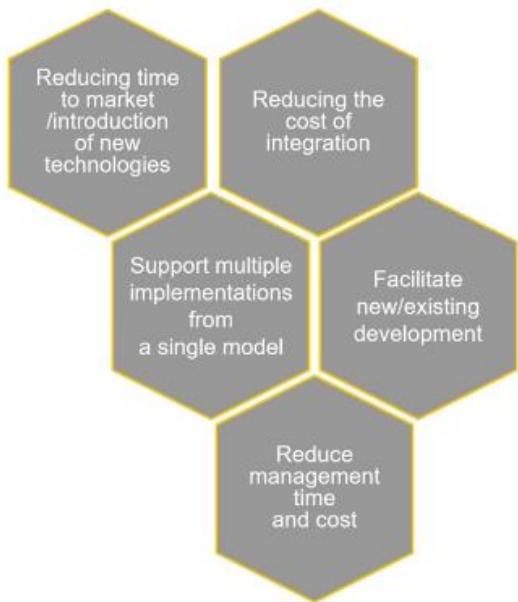
You will learn about the:

- Goals of the Information Framework
- Structure and content
- Uses

Notes:

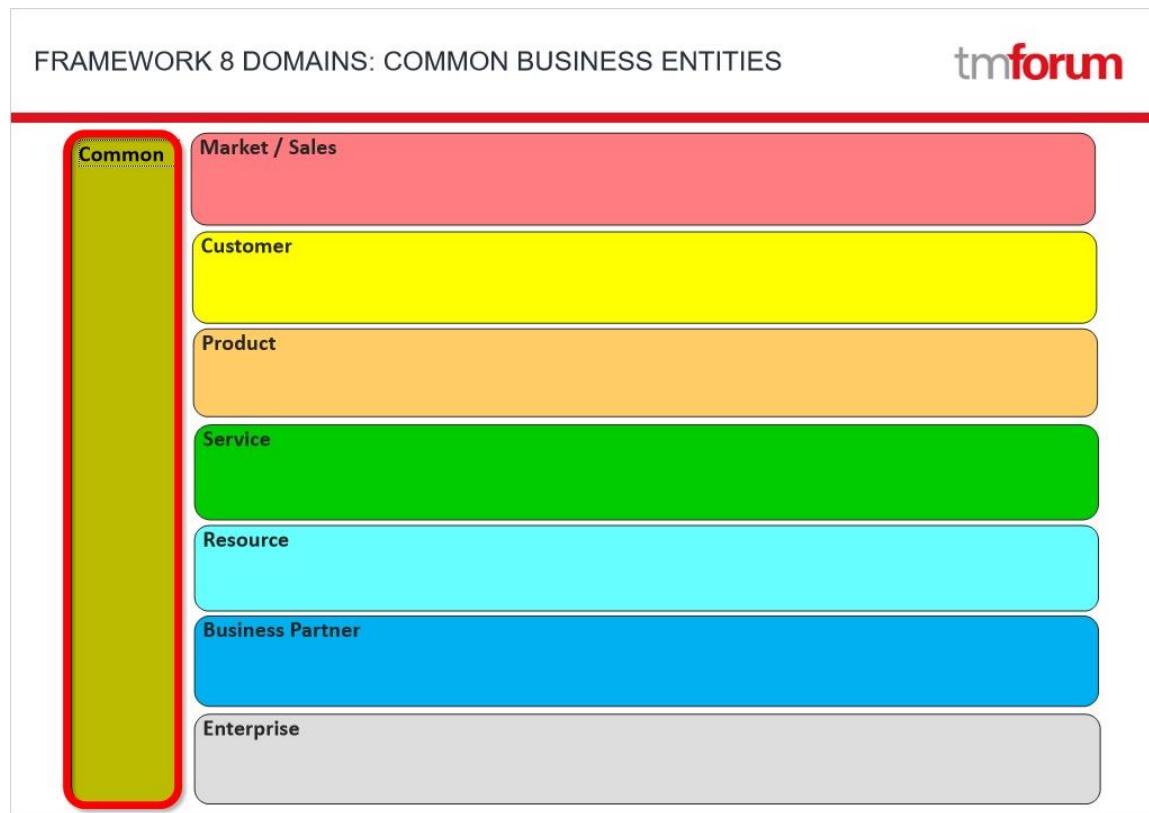
INFORMATION FRAMEWORK GOALS (2 of 2)

INFORMATION FRAMEWORK GOALS



Notes:

FRAMEWORK 8 DOMAINS: COMMON BUSINESS ENTITIES



Notes:

OTHER KEY CONCEPTS

OTHER KEY CONCEPTS (1 of 2)

OTHER KEY CONCEPTS



Business Entities

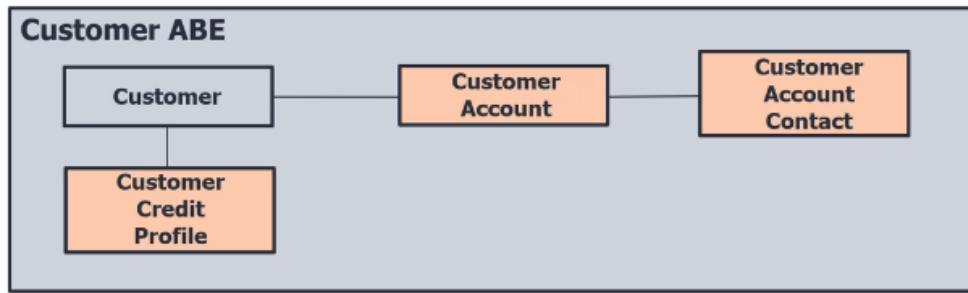
Aggregate Business Entities

Notes:

OTHER KEY CONCEPTS (2 of 2)

OTHER KEY CONCEPTS

tmforum



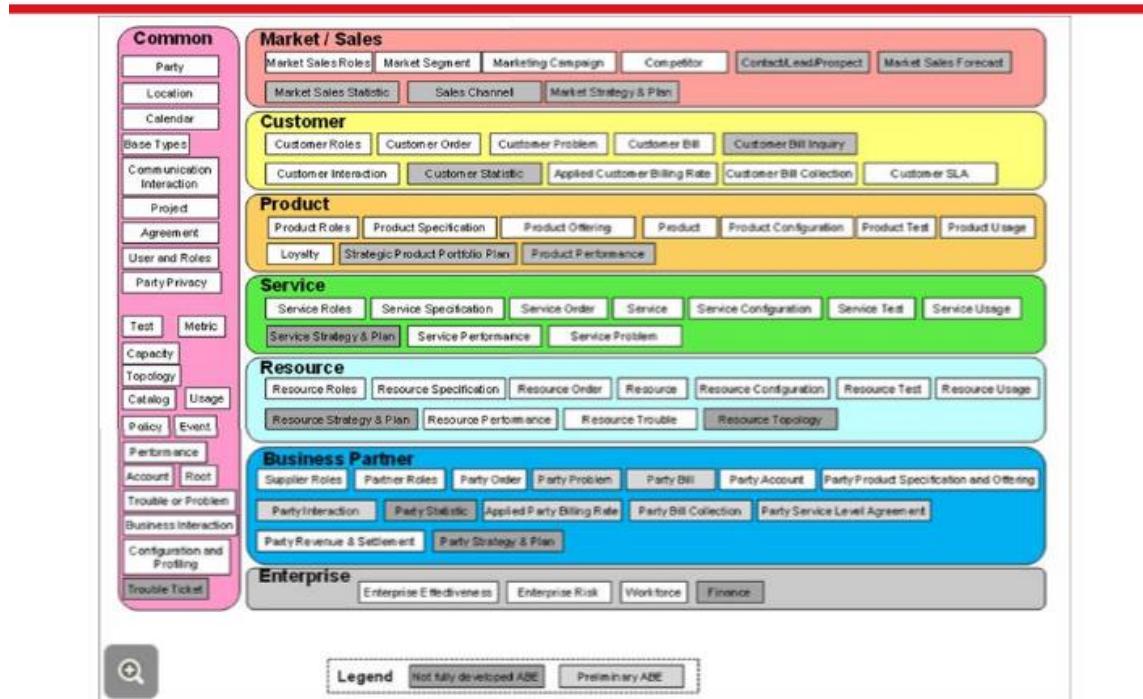
Notes:

INFORMATION FRAMEWORK (SID) MAP

INFORMATION FRAMEWORK (SID) MAP

INFORMATION FRAMEWORK (SID) MAP

tmforum



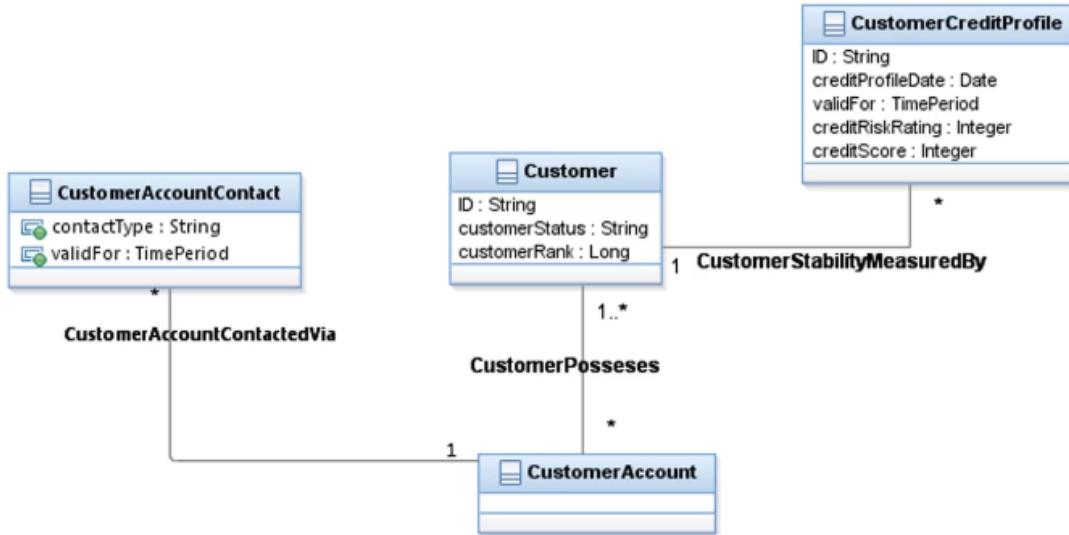
Notes:

UNIFIED MODELING LANGUAGE (UML) CLASS DIAGRAM

UNIFIED MODELING LANGUAGE (UML) CLASS DIAGRAM

UNIFIED MODELING LANGUAGE (UML) CLASS DIAGRAM

tmforum

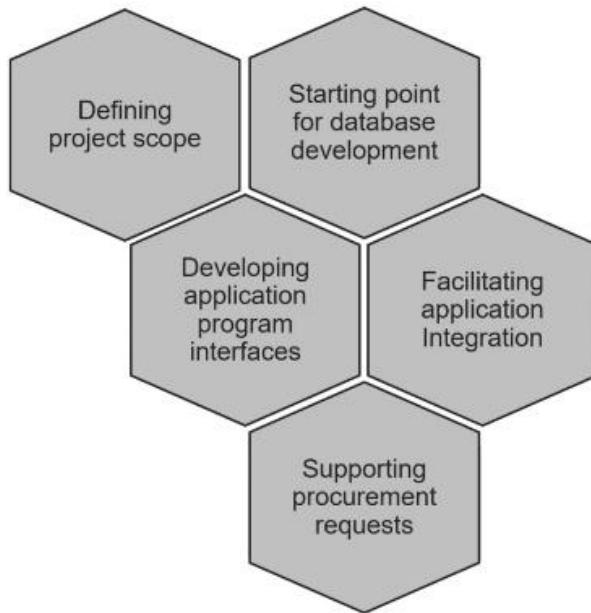
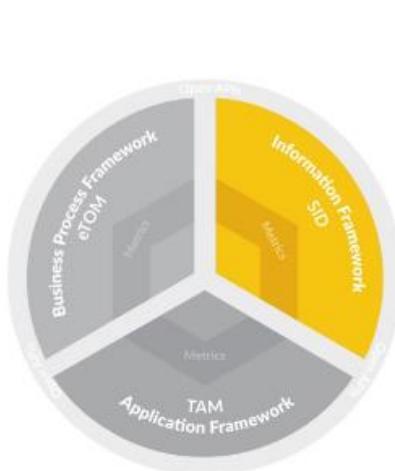


Notes:

INFORMATION FRAMEWORK USES

INFORMATION FRAMEWORK USES

tmforum



Notes:

MAPPING TO THE PROCESS FRAMEWORK

MAPPING TO THE PROCESS FRAMEWORK INTRODUCTION

MAPPING TO THE PROCESS FRAMEWORK INTRODUCTION

tmforum

You will learn more about the Information Framework's relationship with the Business Process Framework.

Only frameworks that have current mappings at their lower levels currently.

Mapping to the Process Framework

The diagram shows a hierarchy of processes:

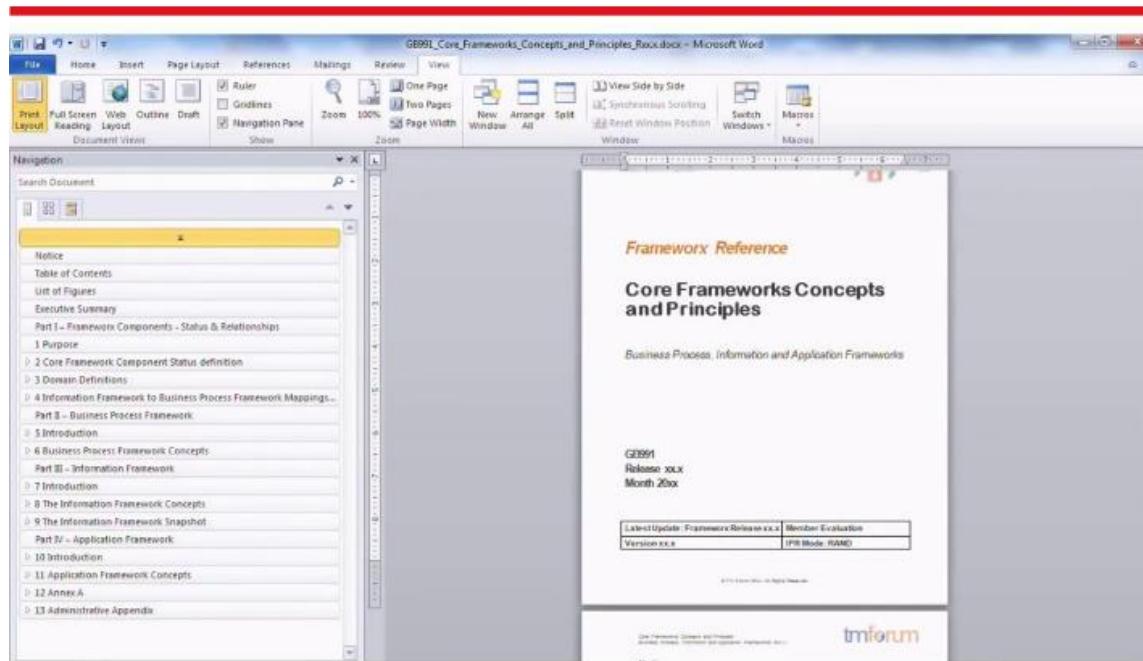
- Customer Acquisition
- Product Offering
- Order Handling
- Billing & Collections Management
- Service Configuration & Activation
- Problem Handling
- Customer QoS/SLA Management
- Service Problem Management
- Service Management

Notes:

MAPPING TO THE PROCESS FRAMEWORK MAPPING WALKTHROUGH

MAPPING TO THE PROCESS FRAMEWORK MAPPING WALKTHROUGH

tmforum



Notes:

Property of TM Forum.

For official TM Forum Training participant personal use/reference only.

WALKTHROUGH WRAP UP

WALKTHROUGH WRAP UP

tmforum



Notes:

INFORMATION FRAMEWORK CASE STUDY

INFORMATION FRAMEWORK CASE STUDY INTRODUCTION

INFORMATION FRAMEWORK CASE STUDY INTRODUCTION



Information Framework Case Study

Notes:

INFORMATION FRAMEWORK CASE STUDY

INFORMATION FRAMEWORK CASE STUDY

tmforum



Notes:

WRAP UP

WRAP UP

The slide features a red header bar with the text "WRAP UP" on the left and the "tmforum" logo on the right. Below the header is a large white area containing a summary of the module's content. At the bottom is a grey footer bar with two buttons: "RESTART" on the left and "EXIT MODULE" on the right.

This wraps up the third module, which provided you with an introduction to the framework and its relationship with the Business Process Framework, you were shown a case study on how and why a TM Forum member uses the framework, and this section concluded with a quiz.

RESTART **EXIT MODULE**

Notes:

FRAMEWORK OVERVIEW - MODULE 4

INTRODUCTION

WELCOME



The Application Framework

TM Forum Application Framework is an enterprise-wide decomposition and model of application functionality and it describes a standard way of structuring, defining, and implementing application functionality.



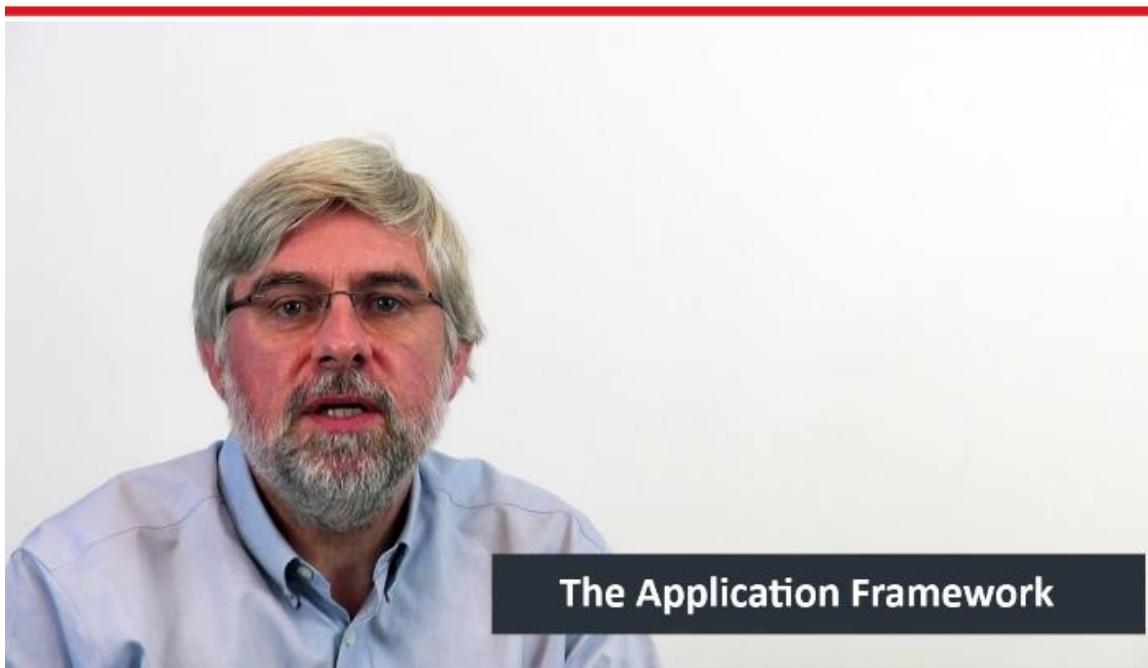
Click the NEXT button to continue throughout this course.

Notes:

APPLICATION FRAMEWORK INTRODUCTION

APPLICATION FRAMEWORK INTRODUCTION

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Notes:

APPLICATION FRAMEWORK GOALS

APPLICATION FRAMEWORK GOALS (1 of 2)

APPLICATION FRAMEWORK GOALS

tmforum

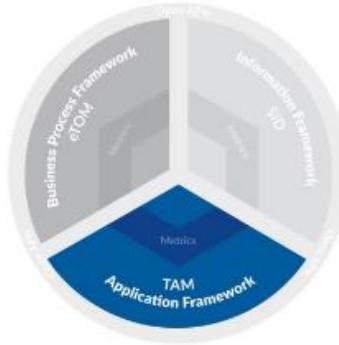
You will learn about the:

- Goals of the Application Framework
- Structure and content
- Uses

Notes:

APPLICATION FRAMEWORK GOALS (2 of 2)

APPLICATION FRAMEWORK GOALS



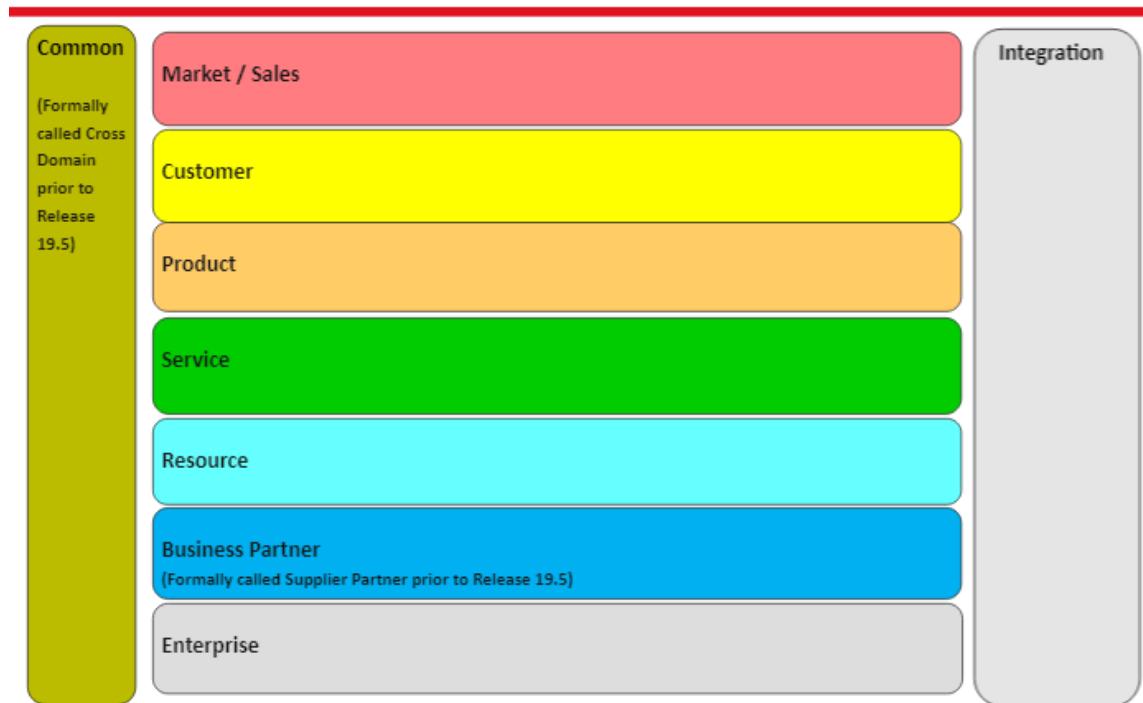
Notes:

FRAMEWORK DOMAINS

SEVEN OF THE FRAMEWORK'S DOMAINS

SEVEN OF THE FRAMEWORK'S DOMAINS

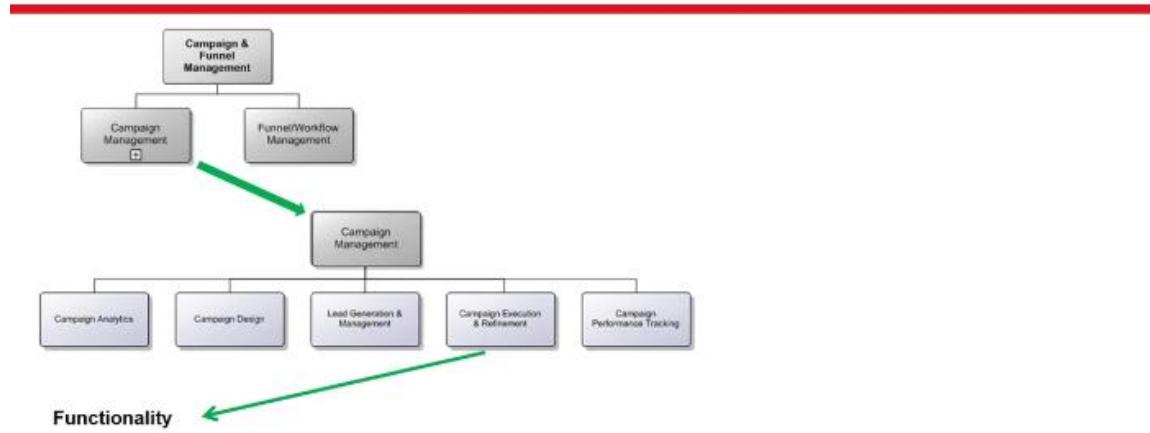
tm**forum**



Notes:

STRUCTURE OF THE APPLICATION FRAMEWORK (1 of 2)

STRUCTURE OF THE APPLICATION FRAMEWORK



Campaign Execution & Refinement provides the necessary tools to execute the campaign, and based on performance indicators collected, accept refinements to the campaign while still executing.

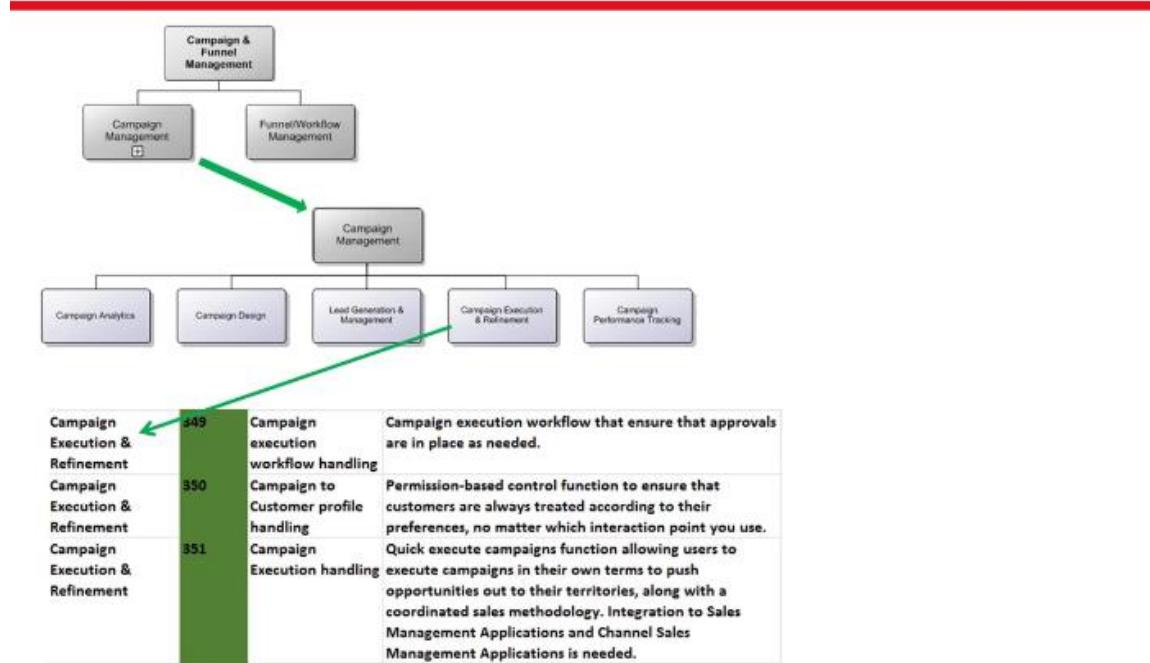
Campaign Execution & Refinement Applications should include:

- Permission-based controls to ensure that customers are always treated according to their preferences, no matter which interaction point you use.
- Users can quickly execute campaigns in their own terms to push opportunities out to their territories, along with a coordinated sales methodology. Integration to Sales Management Applications and Channel Sales Management Applications is needed.
- Integrated Workflow notifications ensure that approvals are in place as needed.

Notes:

STRUCTURE OF THE APPLICATION FRAMEWORK (2 of 2)

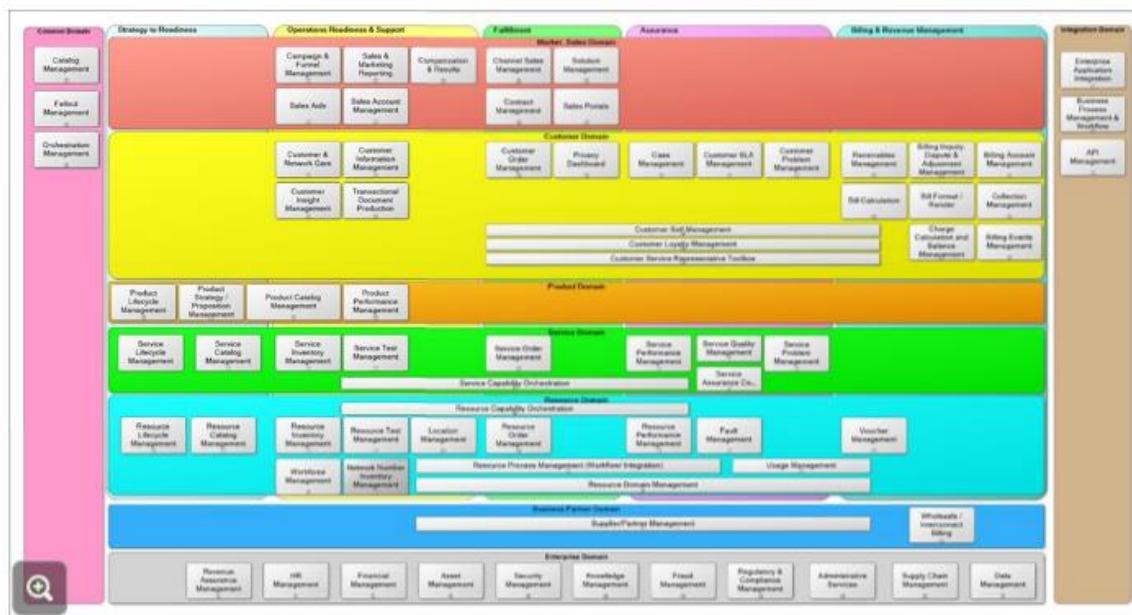
STRUCTURE OF THE APPLICATION FRAMEWORK



Notes:

FRAMEWORK DOMAINS AND LEVEL 1 APPLICATIONS

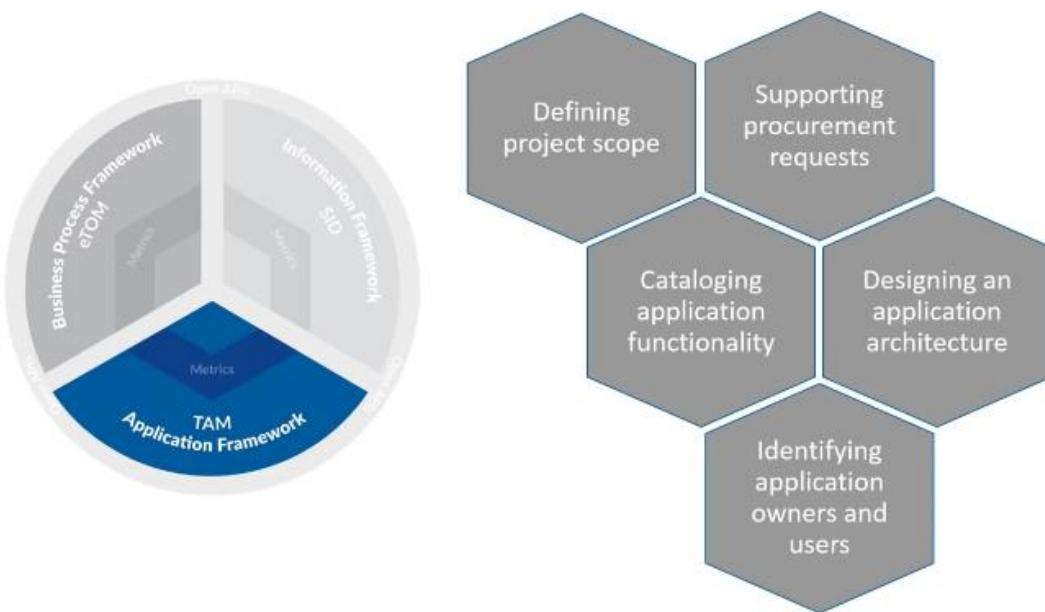
FRAMEWORK DOMAINS AND LEVEL 1 APPLICATIONS



Notes:

APPLICATION FRAMEWORK USES

APPLICATION FRAMEWORK USES



Notes:

APPLICATION FRAMEWORK CASE STUDY

APPLICATION FRAMEWORK CASE STUDY

APPLICATION FRAMEWORK CASE STUDY

tmforum

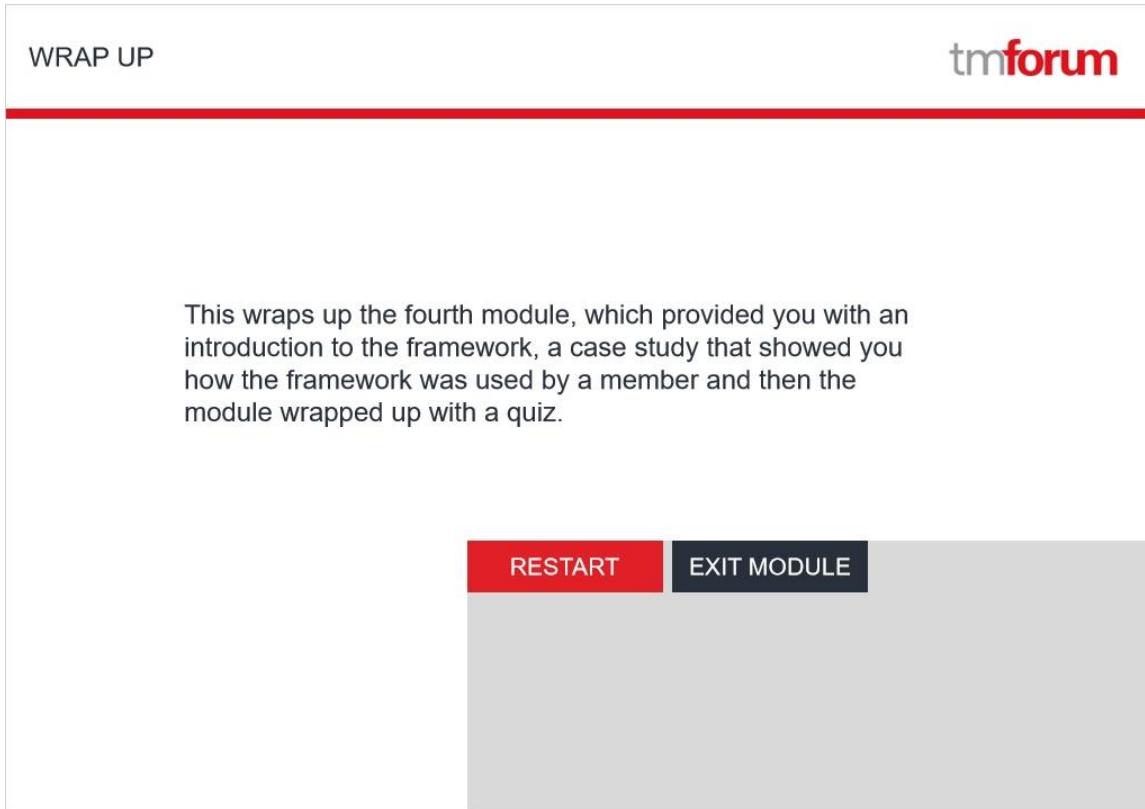


Application Framework Case Study

Notes:

WRAP UP

WRAP UP



The slide template features a white header bar with the word "WRAP UP" on the left and the "tmforum" logo on the right. A thick red horizontal line separates the header from the main content area. The main content area contains a text block about the module wrap-up, followed by a grey footer bar with two buttons: "RESTART" (red) and "EXIT MODULE" (dark grey).

This wraps up the fourth module, which provided you with an introduction to the framework, a case study that showed you how the framework was used by a member and then the module wrapped up with a quiz.

RESTART **EXIT MODULE**

Notes:

FRAMEWORK OVERVIEW - MODULE 5

INTRODUCTION

WELCOME

tmforum

Open APIs

TM Forum Open APIs supports interoperability between the applications defined in the Application Framework and acts as the glue that holds together the other frameworks in a solution implementation.



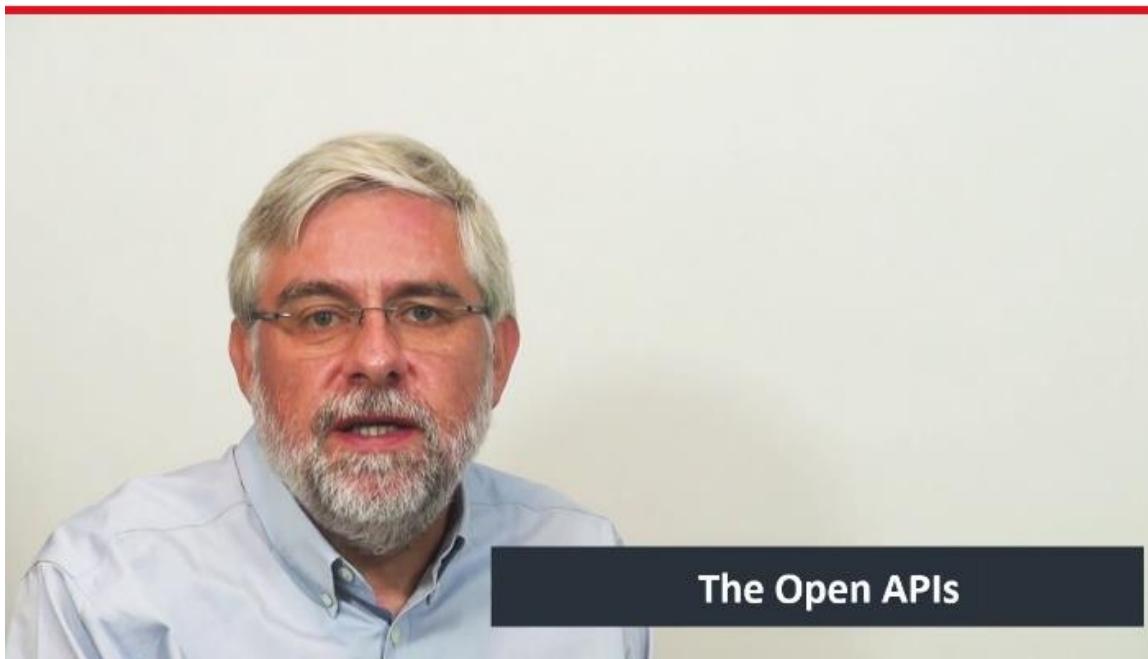
Click the NEXT button to continue throughout this course.

Notes:

OPEN APIs INTRODUCTION

OPEN APIs INTRODUCTION

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Notes:

OPEN APIs GOALS

OPEN APIs GOALS (1 of 2)

OPEN APIs GOALS

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You will learn about the:

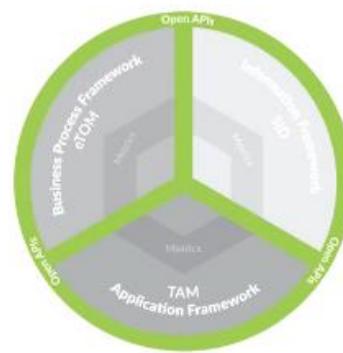
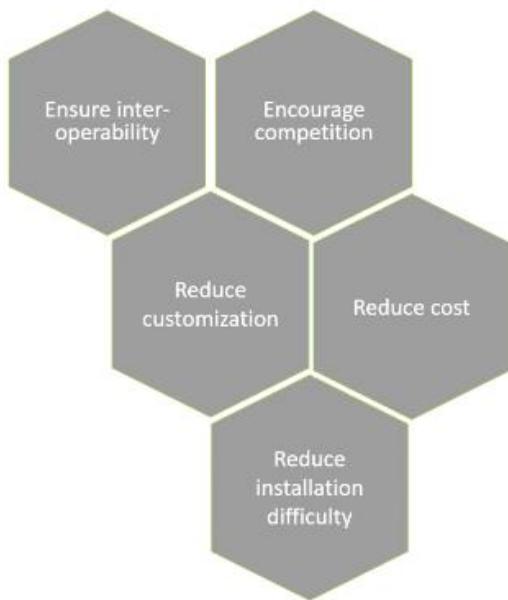
- Goals of the Open APIs
- How they are organized
- Uses

Notes:

OPEN APIs GOALS (2 of 2)

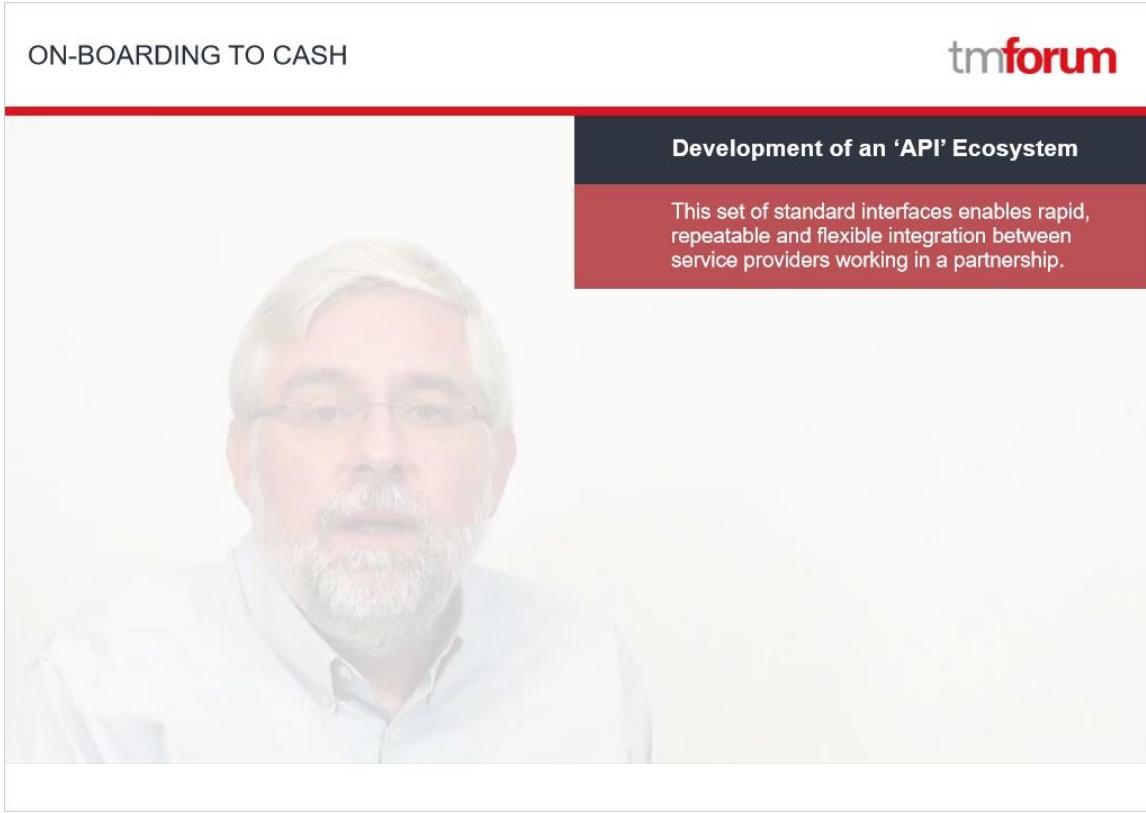
OPEN APIs GOALS

tmforum



Notes:

ON-BOARDING TO CASH



ON-BOARDING TO CASH

tmforum

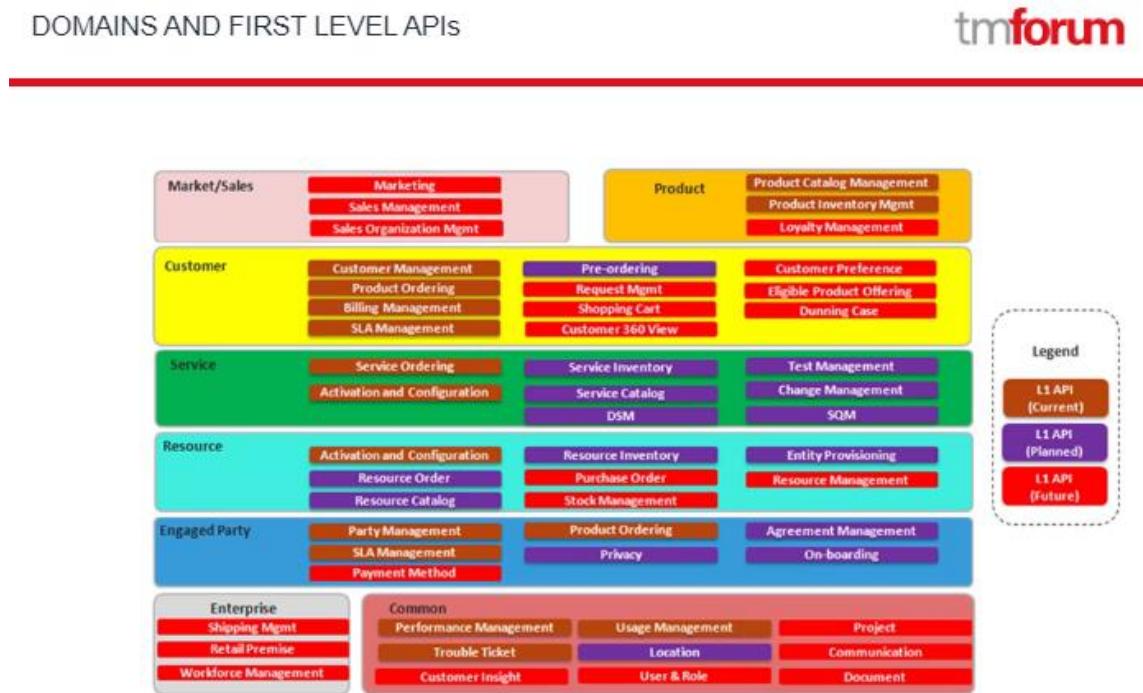
Development of an 'API' Ecosystem

This set of standard interfaces enables rapid, repeatable and flexible integration between service providers working in a partnership.

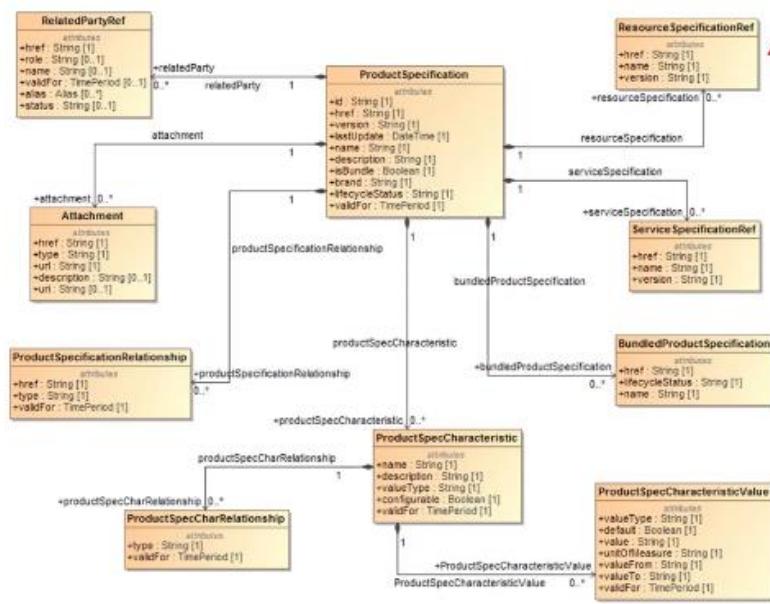
Notes:

OPEN APIs GOALS

DOMAINS AND FIRST LEVEL APIs



Notes:

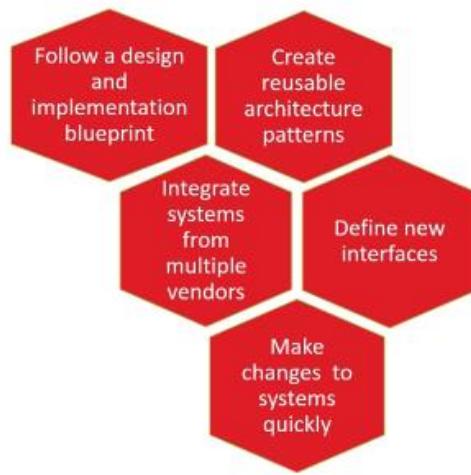
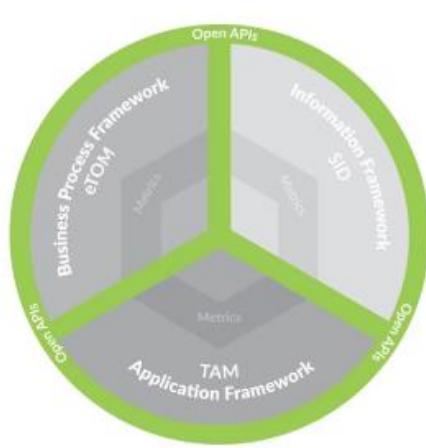
API DATA MODEL FRAGMENT**API DATA MODEL FRAGMENT****tmforum****Notes:**

OPEN APIs USES

OPEN APIs USES

OPEN APIs USES

tmforum



Notes:

OPEN APIs CASE STUDY

OPEN APIs CASE STUDY

OPEN APIs CASE STUDY

tmforum



Connected Care Anywhere

The Open APIs Case Study

Notes:

WRAP UP

WRAP UP

The slide features a red header bar with the word "WRAP UP" on the left and the "tmforum" logo on the right. Below the header is a large white area containing text about the module's content. At the bottom is a grey footer bar with two buttons: "RESTART" on the left and "EXIT MODULE" on the right.

This wraps up the fifth module, which provided you with an overview of the Open APIs, showed you a case study that used one of the APIs and tested your knowledge.

RESTART **EXIT MODULE**

Notes:

FRAMEWORK OVERVIEW - MODULE 6

INTRODUCTION

WELCOME

The slide features a large red header 'Business Metrics'. Below it is a descriptive text: 'Business Metrics provides a set of metrics aimed specifically at business performance at the product and service level.' At the top right is the 'tmforum' logo. At the bottom right is a red button with white text: 'Click the NEXT button to continue throughout this course.' Three small photographs are displayed horizontally below the main title: two show groups of people talking at a networking event, and one shows people at a booth with a laptop.

Business Metrics

Business Metrics provides a set of metrics aimed specifically at business performance at the product and service level.

tmforum

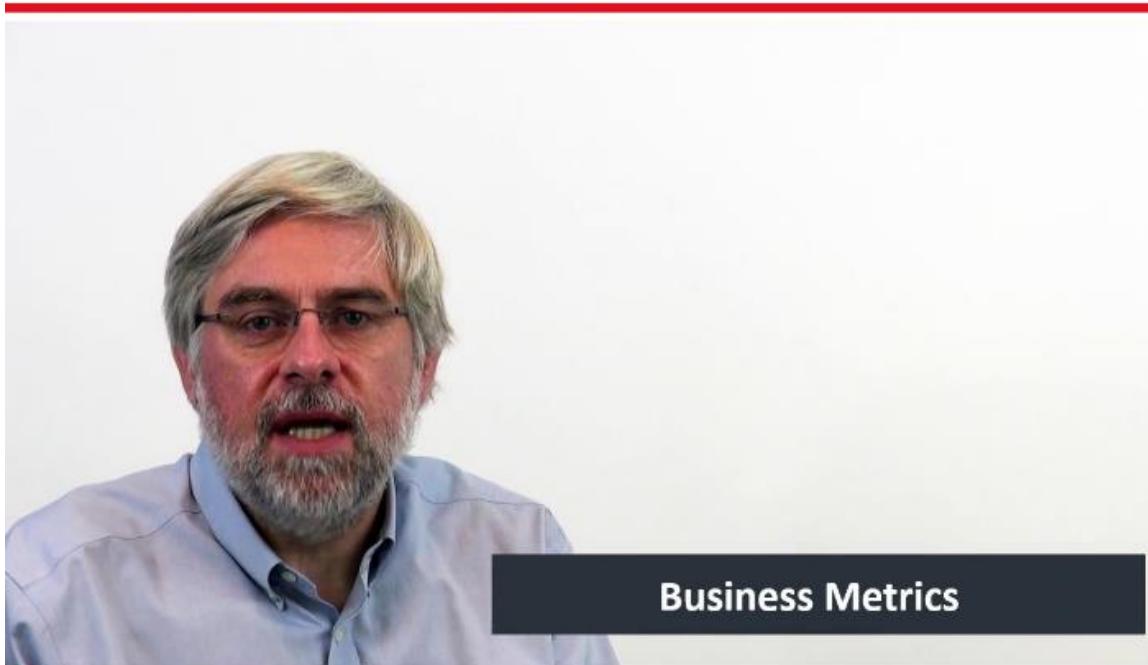
Click the NEXT button to continue throughout this course.

Notes:

BUSINESS METRICS INTRODUCTION

BUSINESS METRICS INTRODUCTION

tmforum



Notes:

BUSINESS METRICS GOALS

BUSINESS METRICS GOALS (1 of 2)

BUSINESS METRICS GOALS

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You will learn about the:

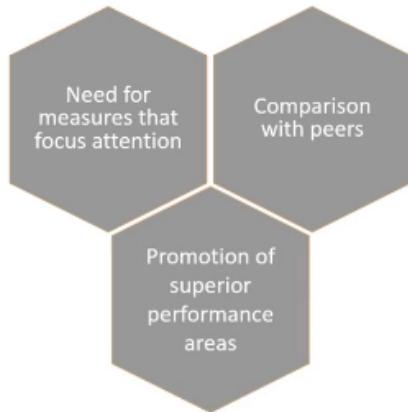
- Goals of Business Metrics
- How they are organized
- Content

Notes:

BUSINESS METRICS GOALS (2 of 2)

BUSINESS METRICS GOALS

tmforum



Notes:

THREE DOMAINS

THE THREE DOMAINS (1 of 3)

THE THREE DOMAINS

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**Organized into
3 Domains**

Notes:

THE THREE DOMAINS (2 of 3)

THE THREE DOMAINS

tm**forum**



Notes:

THE THREE DOMAINS (3 of 3)

THE THREE DOMAINS



Business Metrics provide:

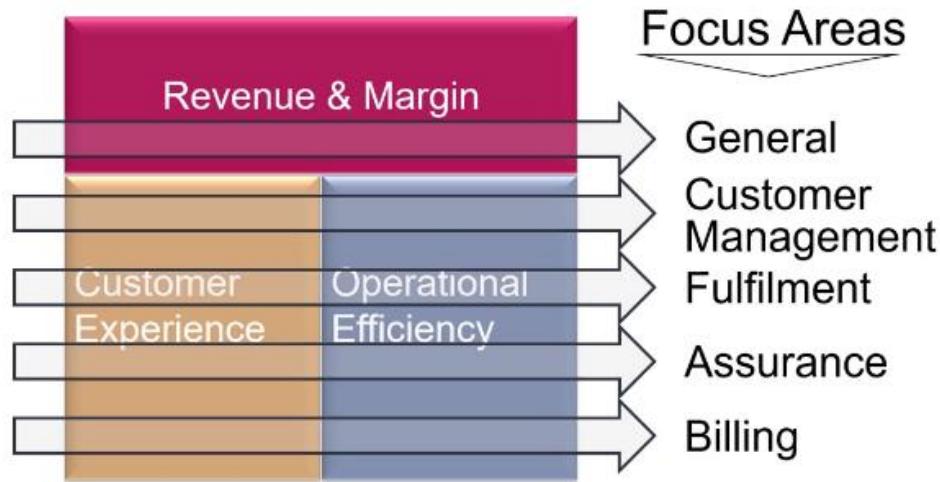
- Standard vocabulary and modelling of business metrics
- Standard definitions of specific business metrics
- Linkages between business metrics and other Frameworkx components

Notes:

FIVE PROCESS FOCUS AREAS

FIVE PROCESS FOCUS AREAS

tmforum



Notes:

DOMAIN TOPIC AREAS

DOMAIN TOPIC AREAS

DOMAIN TOPIC AREAS

tmforum



Notes:

BUSINESS METRICS SCAFFOLD

BUSINESS METRICS SCAFFOLD (1 of 4)

BUSINESS METRICS SCAFFOLD



Notes:

BUSINESS METRICS SCAFFOLD (2 of 4)

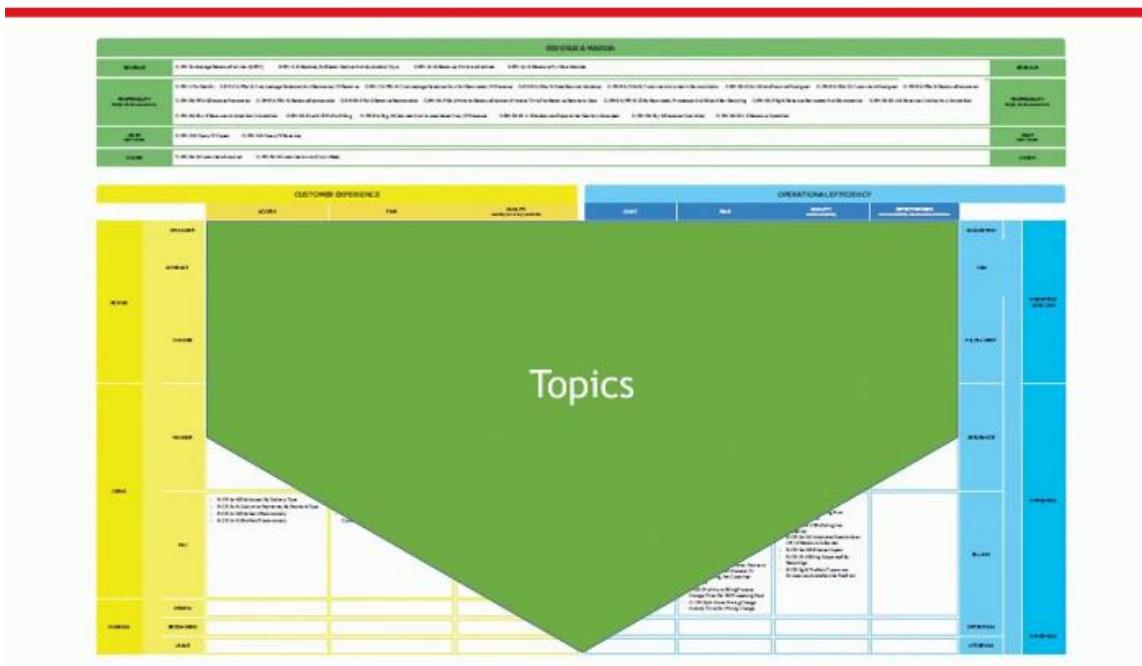
BUSINESS METRICS SCAFFOLD

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**Notes:**

BUSINESS METRICS SCAFFOLD (3 of 4)

BUSINESS METRICS SCAFFOLD

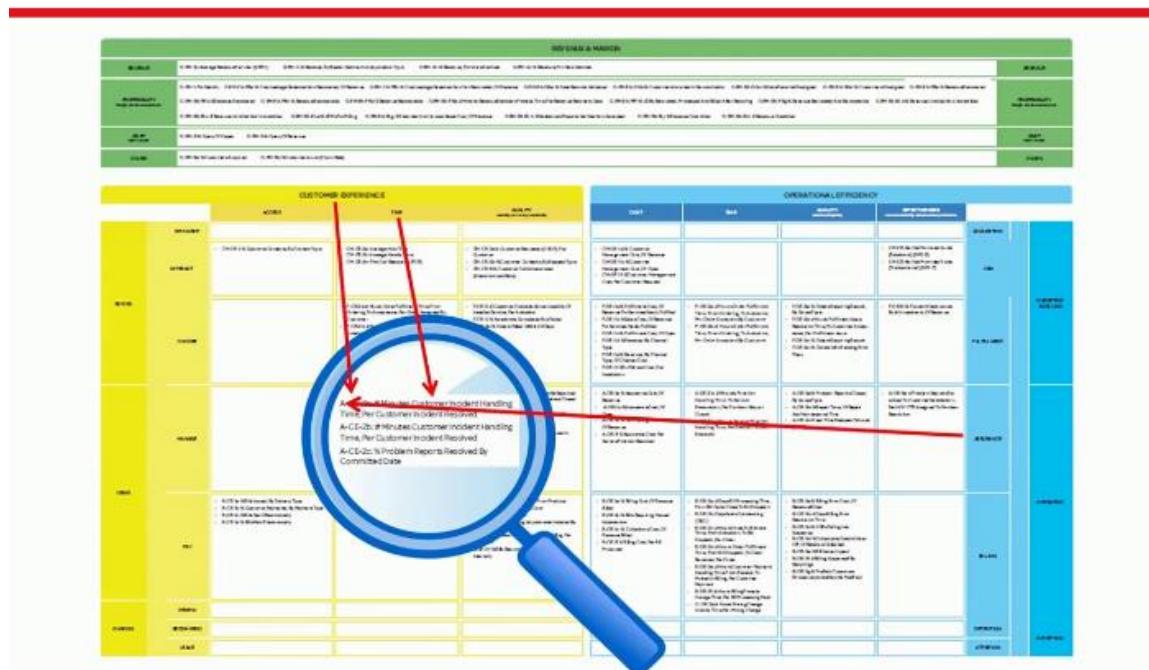


Notes:

BUSINESS METRICS SCAFFOLD (4 of 4)

BUSINESS METRICS SCAFFOLD

tmforum

**Notes:**

METRICS DEFINITION SPREADSHEET

METRICS DEFINITION SPREADSHEET

METRICS DEFINITION SPREADSHEET



tid	group	egid	name	description	units
55	BMS	F-OE-6	% Future Infrastructure Build Investment, Of Revenue	operational effectiveness of the fulfillment process by assessing the relative cost of infrastructure build costs for the Service Offering relative to its overall revenue. The measured cost includes OpEx costs and the appropriate allocation of CapEx costs within the Service Offering business	Percent
56	BMS	A-CE-2a	# Minutes Customer Incident Handling Time, Per Customer Incident Resolved	customer experience of promptness in resolving faults	Minute
58	BMS	A-CE-2c	% Problem Reports Resolved By Committed Date	customer experience of effectiveness in resolving faults or other incidents that impact on an agreed provided service by comparing the number of problems resolved to customer satisfaction by the committed date to the total number of problems occurring during the reporting period	Percent

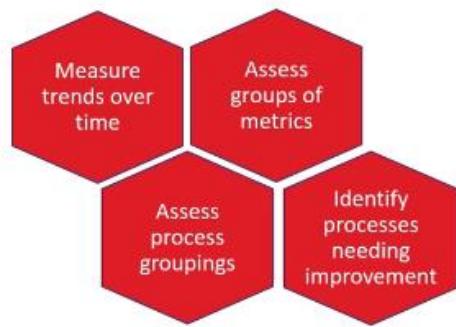
Notes:

BUSINESS METRICS USES

BUSINESS METRICS USES

BUSINESS METRICS USES

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Notes:

BUSINESS METRICS CASE STUDY

BUSINESS METRICS CASE STUDY

BUSINESS METRICS CASE STUDY

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TM Forum Catalyst: Maximizing Profitability with NFV Orchestration

Metrics Case Study

Notes:

WRAP UP

WRAP UP

The slide features a red header bar with the word "WRAP UP" on the left and the "tmforum" logo on the right. Below the header is a large white area containing text about the module's content. At the bottom is a grey footer bar with two buttons: "RESTART" (red) and "EXIT MODULE" (dark grey).

This wraps up the sixth module, which provided you with an overview of Business Metrics, showed you a case study that used metrics and tested your Business Metrics knowledge.

RESTART **EXIT MODULE**

Notes:

FRAMEWORK OVERVIEW - MODULE 7

INTRODUCTION

WELCOME

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Framework Best Practices

TM Forum Framework is a suite of best practices and standards that provides the blueprint for effective, efficient business operations.

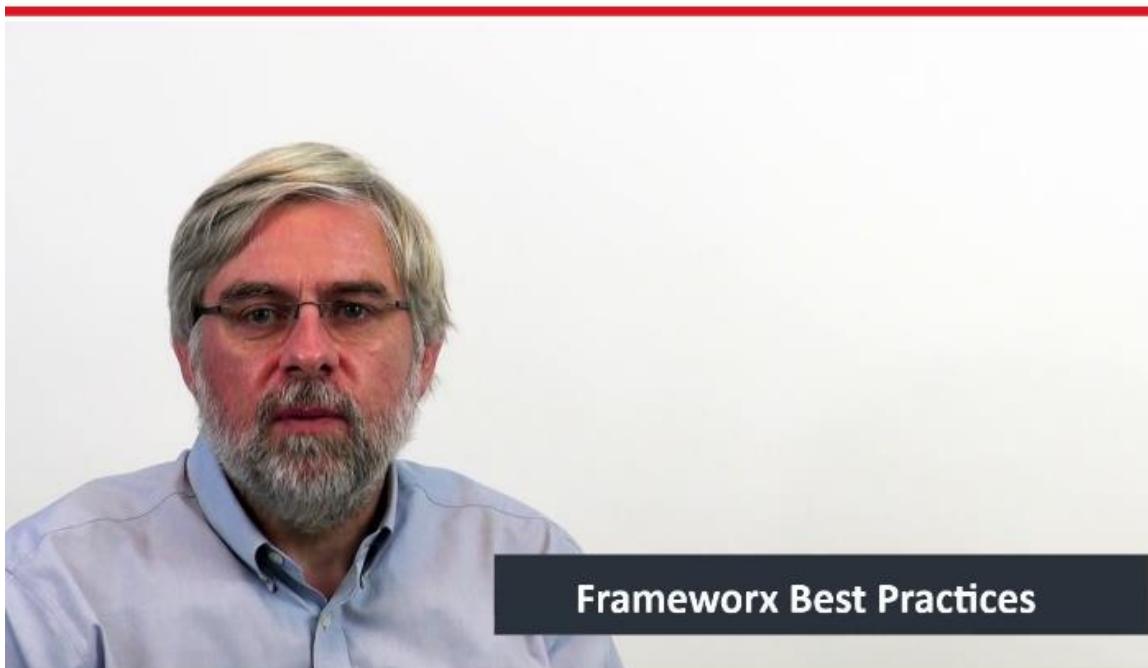
Click the NEXT button to continue throughout this course.

Notes:

FRAMEWORX BEST PRACTICES INTRODUCTION

FRAMEWORX BEST PRACTICES INTRODUCTION

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Notes:

GOALS ACHIEVED

GOALS ACHIEVED (1 of 2)

GOALS ACHIEVED

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You will be provided with:

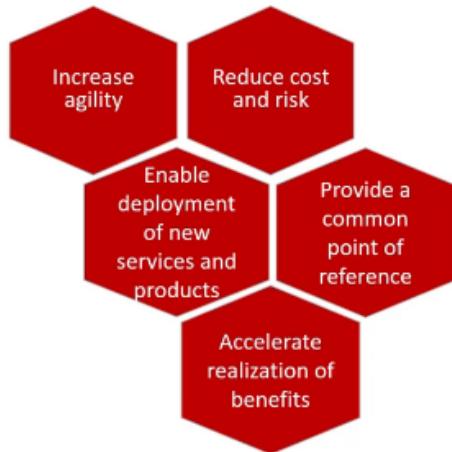
- Overview about agile and virtualization practices
- Managing virtualized networks and services
- Business metrics and key performance indicators
- Security
- Privacy and risk

Notes:

GOALS ACHIEVED (2 of 2)

GOALS ACHIEVED

tmforum



Best Practices

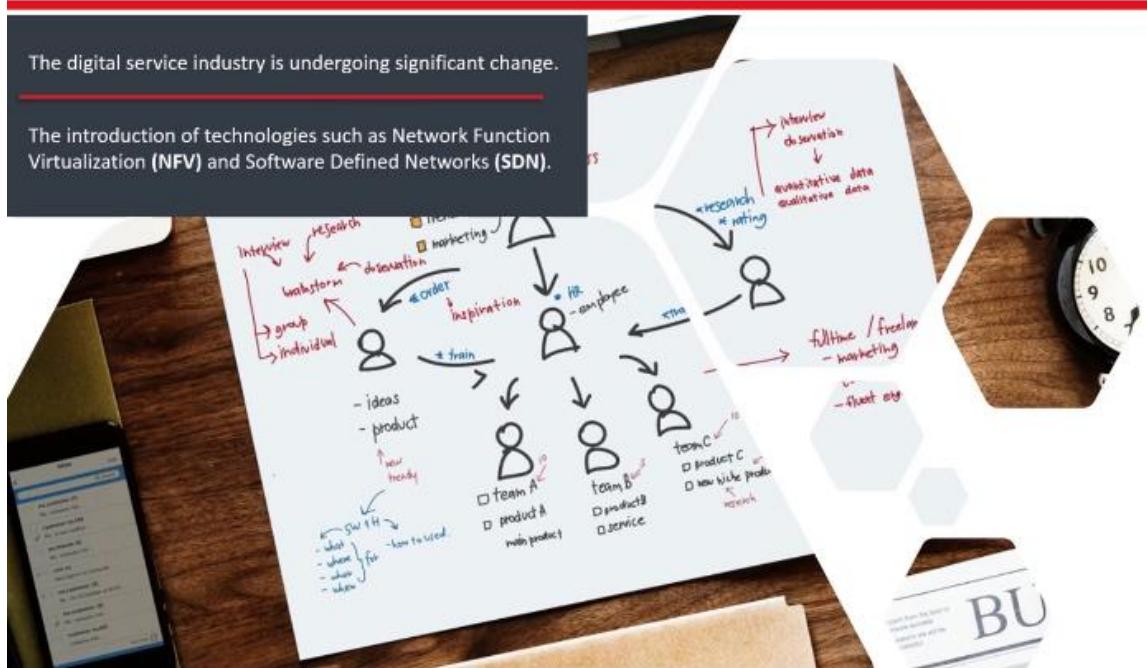
Notes:

BECOMING AGILE AND VIRTUALIZED

BECOMING AGILE AND VIRTUALIZED (1 of 3)

BECOMING AGILE AND VIRTUALIZED

tmforum

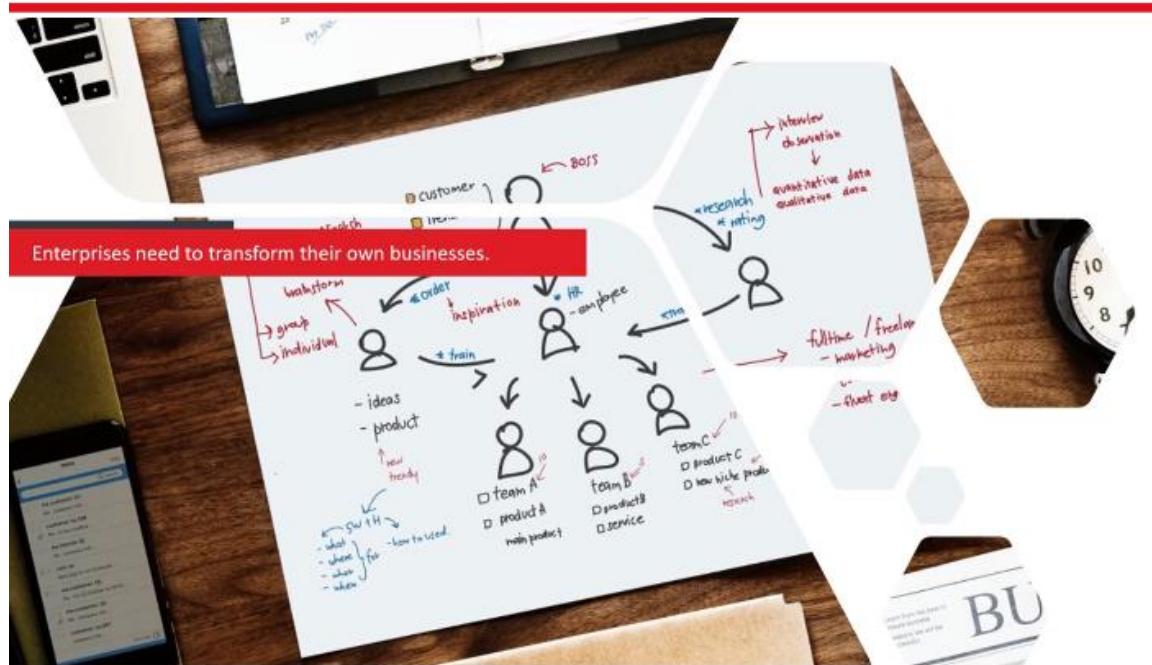


Notes:

BECOMING AGILE AND VIRTUALIZED (2 of 3)

BECOMING AGILE AND VIRTUALIZED

tmforum



Notes:

BECOMING AGILE AND VIRTUALIZED (3 of 3)

BECOMING AGILE AND VIRTUALIZED

tmforum



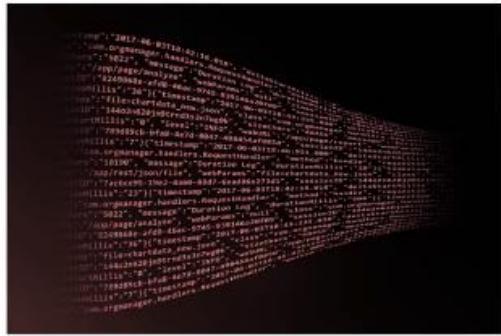
Notes:

VIRTUALIZATION THEMES

VIRTUALIZATION THEMES

VIRTUALIZATION THEMES

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End-to-end Virtualization Management

Operations Transformation

Virtualization Operational Readiness and Procurement

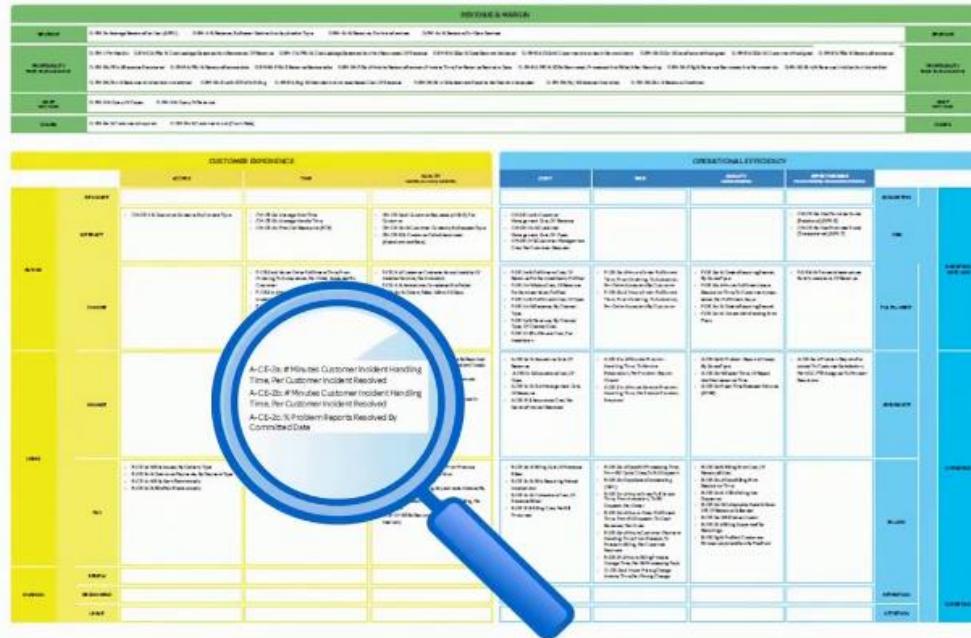
Foundational Studies

Notes:

BUSINESS METRICS REVIEW

BUSINESS METRICS REVIEW

BUSINESS METRICS REVIEW



Notes:

SECURITY, PRIVACY AND RISK MANAGEMENT

SECURITY, PRIVACY AND RISK MANAGEMENT

SECURITY, PRIVACY AND RISK MANAGEMENT

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Notes:

CUSTOMER CENTRICITY

BECOMING CUSTOMER CENTRIC GOALS (1 of 2)

BECOMING CUSTOMER CENTRIC GOALS



You will be provided with:

- Overview about becoming customer centric
- Improving multiple channel engagement
- Experience and driving customer loyalty

You will learn about:

- Creating deliberate customer experiences
- Leveraging metrics to drive business decisions
- Making the most of big data analytics

Notes:

BECOMING CUSTOMER CENTRIC GOALS (2 of 2)

BECOMING CUSTOMER CENTRIC GOALS

tm**forum**



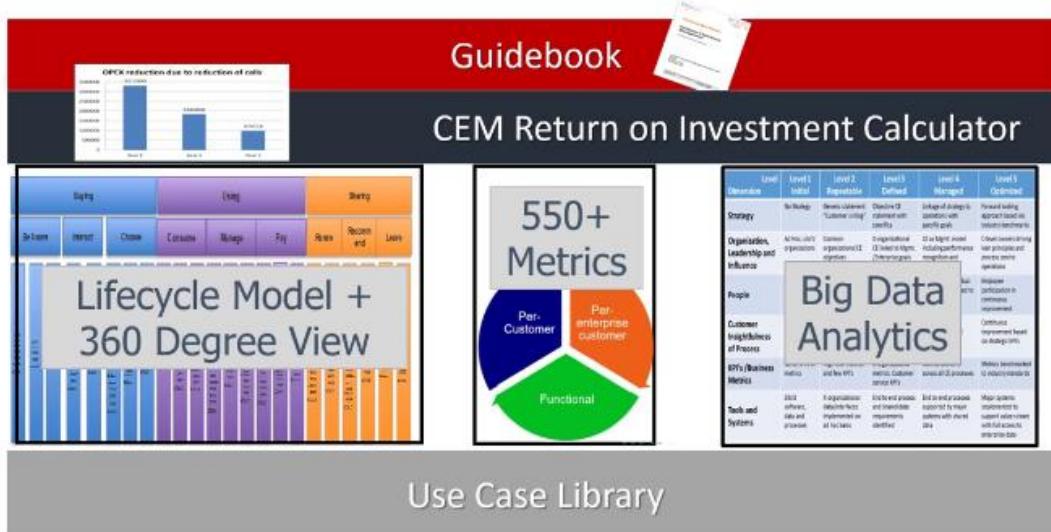
Best Practices

Notes:

CUSTOMER EXPERIENCE MANAGEMENT BEST PRACTICES

CUSTOMER EXPERIENCE MANAGEMENT BEST PRACTICES

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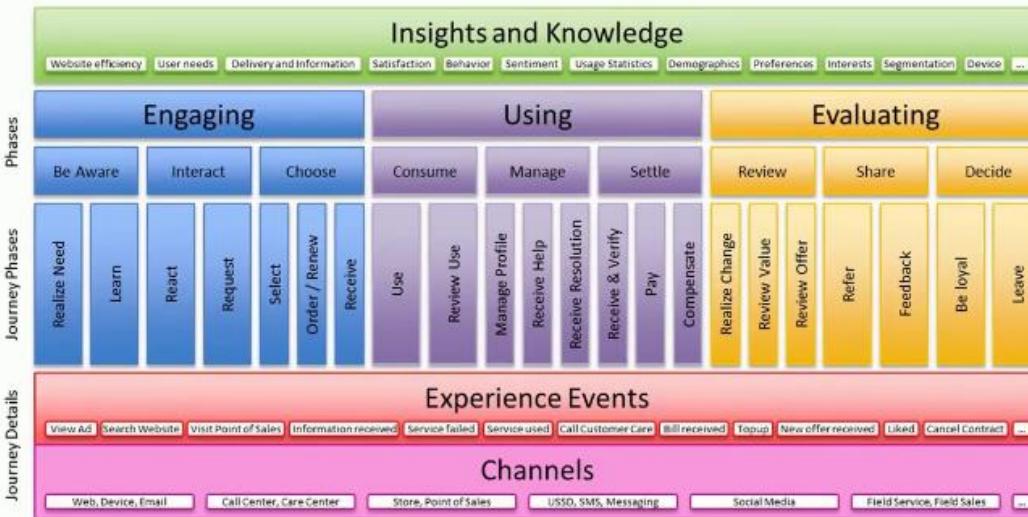


Notes:

CUSTOMER EXPERIENCE LIFECYCLE MODEL

CUSTOMER EXPERIENCE LIFECYCLE MODEL

tmforum



Notes:

MEASURING CUSTOMER EXPERIENCE

MEASURING CUSTOMER EXPERIENCE



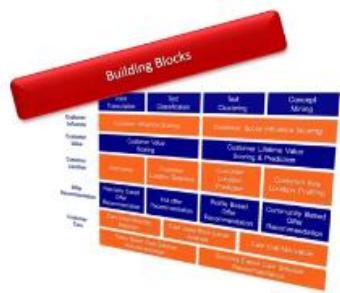
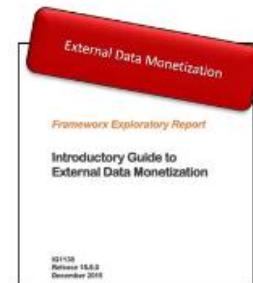
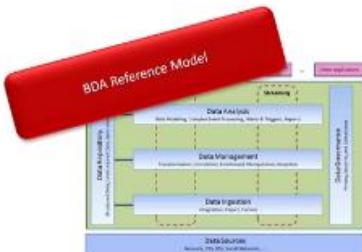
tid	group	egid	name	description	units
436	CEM	BA-E-1	Brand Value Comparative Subjective Score (Enterprise)	Enterprise Customer Response to "How does our reputation and brand compare to competitor x"	6(Far Better) - 1(Fair Worse)
437	CEM	BA-E-2	Product Choice Subjective Score (Enterprise)	Enterprise Customer Response to "We offer a good choice of product brands and models"	6 (Strongly Agree) - 1 (Strongly
438	CEM	BA-E-3	Product Choice Comparative Subjective Score (Enterprise)	Enterprise Customer Response to "How does our choice of product brands and models compare with competitor x"	6(Far Better) - 1(Fair Worse)
439	CEM	BA-E-4	Service Plan Choice Subjective Score (Enterprise)	Enterprise Customer Response to "We offer a good choice of service plans"	6 (Strongly Agree) - 1 (Strongly
440	CEM	BA-E-5	Service Plan Choice Comparative Subjective Score (Enterprise)	Enterprise Customer Response to "How does our choice of service plans compare with competitor x"	6(Far Better) - 1(Fair Worse)
441	CEM	BA-E-6	Customer Service Manager Subjective Score - Awareness	Enterprise Customer Response to "Our CSM is very effective at making you aware of new products and services to meet your needs"	6 (Strongly Agree) - 1 (Strongly Disagree)
442	CEM	BA-E-7	Customer Service Manager Subjective Score - Knowledge	Enterprise Customer Response to "Our CSM has very good product knowledge and is able to answer all your queries"	6 (Strongly Agree) - 1 (Strongly Disagree)
443	CEM	BA-F-1	% Gross Rating Points	% Reach * Frequency; ADDITIONAL COMMENTS: This is an industry	Percent

Notes:

BIG DATA ANALYTICS (1 of 2)

BIG DATAANALYTICS

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Notes:

BIG DATA ANALYTICS (2 of 2)

BIG DATA ANALYTICS

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Available Use Cases

- Real-time Personalized Offers while Browsing
- Real-time Personalized Offers during Checkout
- Real-time Personalized Offers during a Live Interaction
- Real-time Personalized Offers Based on Location
- Real-time Personalized Offers Based on Usage
- Real-time Personalized Offers Based on Device
- Intelligent Advertising Based on Browsing History
- Stimulating Prepaid to Postpaid Conversion
- Enticing Usage from Roaming Customers
- Monetizing Mobile Subscribers' Insights
- Proactive customer care and upsell opportunities based on automated equipment audit
- Product Definition and Development
- Product Introduction Analytics
- Product Performance Optimization

Name:	Injection of personalized and targeted advertising based on customer's browsing history
Horizontal:	Marketing and Offer Management
Actors:	Customer
Business Drivers:	A customer's browsing history provides a unique opportunity to know regular activities, likings and preferences of the customer. Advertisements can be inserted intelligently by analyzing the sites browsed, time spent on each site and any operation performed on the sites. The advert can belong to either the provider (thereby providing a way to cross-sell and up-sell its own products and services) or a third party (with which the provider may have an agreement for revenue sharing).
Business Metrics:	For CSP's Advertisements: <ul style="list-style-type: none">• Increase 2 - Average Revenue per User (ARPU)• Increase 177 - # Orders Accepted by Customer (2)
CxLC Stage:	For CSP's Advertisements: Choose, Renew, & Recommend For Third Party Advertisements: Be Aware (of third party brands)

Notes:

BECOMING OPEN AND EFFECTIVELY PARTNERING

BECOMING OPEN AND EFFECTIVELY PARTNERING OVERVIEW (1 of 3)

BECOMING OPEN AND EFFECTIVELY PARTNERING OVERVIEW

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Notes:

BECOMING OPEN AND EFFECTIVELY PARTNERING OVERVIEW (2 of 3)

BECOMING OPEN AND EFFECTIVELY PARTNERING OVERVIEW

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Delivering, integrating and managing value-added services quickly

Notes:

BECOMING OPEN AND EFFECTIVELY PARTNERING OVERVIEW (3 of 3)

BECOMING OPEN AND EFFECTIVELY PARTNERING OVERVIEW

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Notes:

BECOMING OPENING AND EFFECTIVELY PARTNERING GOALS

BECOMING OPENING AND EFFECTIVELY PARTNERING GOALS

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Best Practices

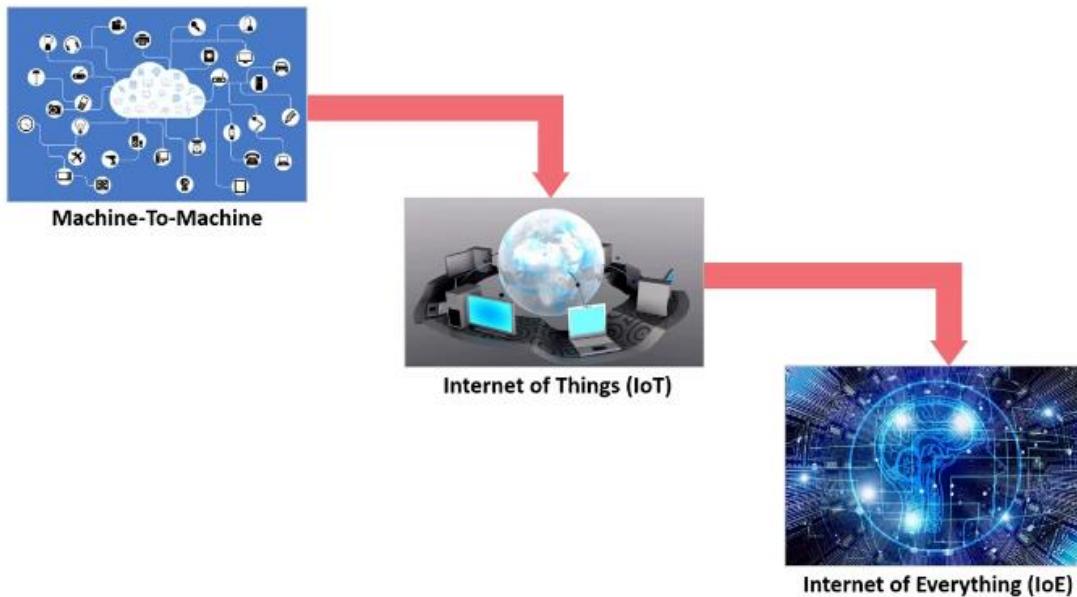
Notes:

DIGITAL WORLD CHALLENGES AND EFFECTIVELY PARTNERING

DIGITAL WORLD CHALLENGES

DIGITAL WORLD CHALLENGES

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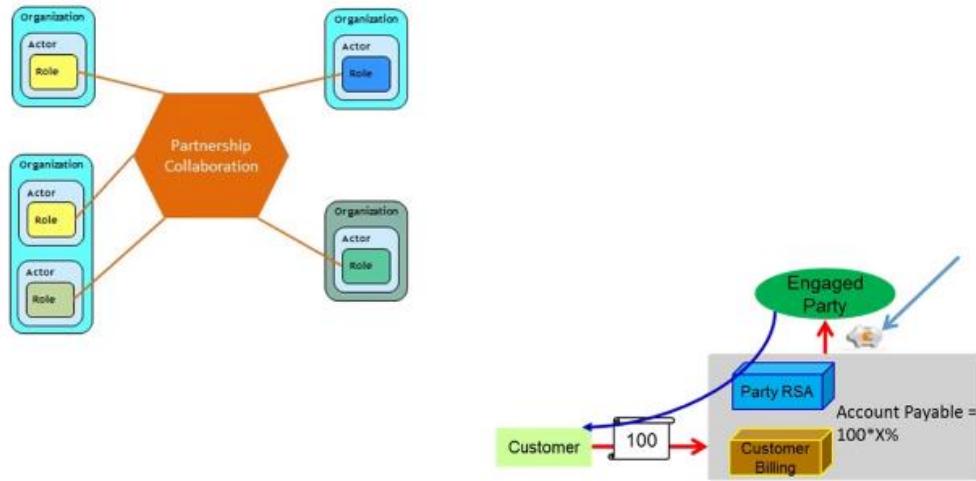


Notes:

EFFECTIVELY PARTNERING

EFFECTIVELY PARTNERING

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Notes:

BEST PRACTICES CASE STUDY

BEST PRACTICES CASE STUDY

BEST PRACTICES CASE STUDY

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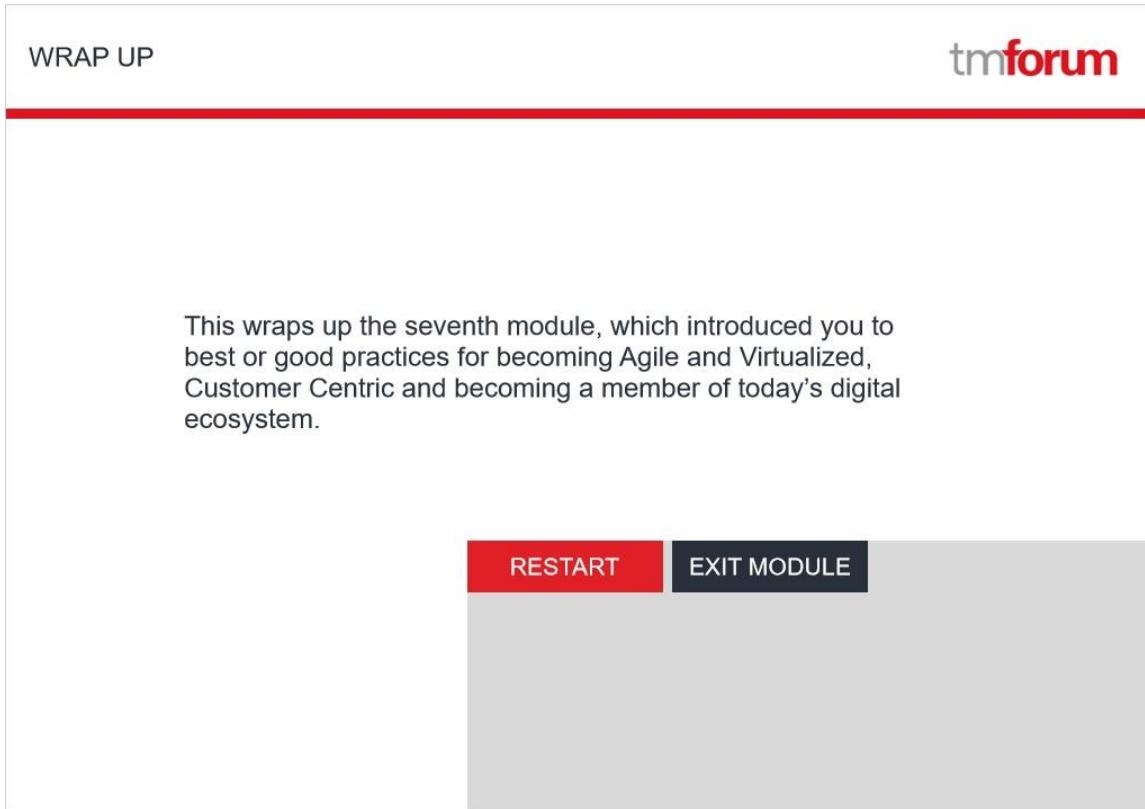
TM Forum Catalyst: APPEX Omnichannel

Best Practice Case Study

Notes:

WRAP UP

WRAP UP



The slide template for the Wrap Up section features a white header bar with the word "WRAP UP" on the left and the "tmforum" logo on the right. Below this is a large white area for content, which contains the following text:

This wraps up the seventh module, which introduced you to best or good practices for becoming Agile and Virtualized, Customer Centric and becoming a member of today's digital ecosystem.

At the bottom of the slide are two buttons: a red "RESTART" button and a dark blue "EXIT MODULE" button.

Notes:

FRAMEWORK OVERVIEW - MODULE 8

INTRODUCTION

WORKSHOP WRAP-UP



Course Wrap-up

This course provided you with an introduction to all that Framework has to offer, its four core frameworks, metrics and best practice.



Click the NEXT button to continue throughout this course.

Notes:

COURSE SUMMARY

FRAMEWORX OVERVIEW SUMMARY

FRAMEWORX OVERVIEW SUMMARY

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Notes:

CONGRATULATIONS

CONGRATULATIONS...



...on completing this TM Forum training course. You are now part of a global community of industry professionals equipped with an understanding of how Framework can help your business to operate efficiently and with agility. You are also now ready to progress your learning journey to more in-depth courses on the components of Framework, and wider, related topics:

- Business Process Framework (**eTOM**)
- Information Framework (**SID**)
- Application Framework (**TAM**)
- Revenue Assurance and Billing
- Customer Centricity
- Transition to Virtualized Networks
- Digital Maturity & Transformation
- Digital Business Ecosystem



Simply complete the feedback survey in the next module and you'll have the option to download and print your ***course completion certificate**.

NOTE: *The course completion certificate attests to completion only of this course and should not be confused with a Knowledge/exam certification, which must be completed separately.

Notes:

CERTIFICATION

CERTIFICATION

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Having completed this course, you would be eligible to attempt the related Knowledge Certification exam.

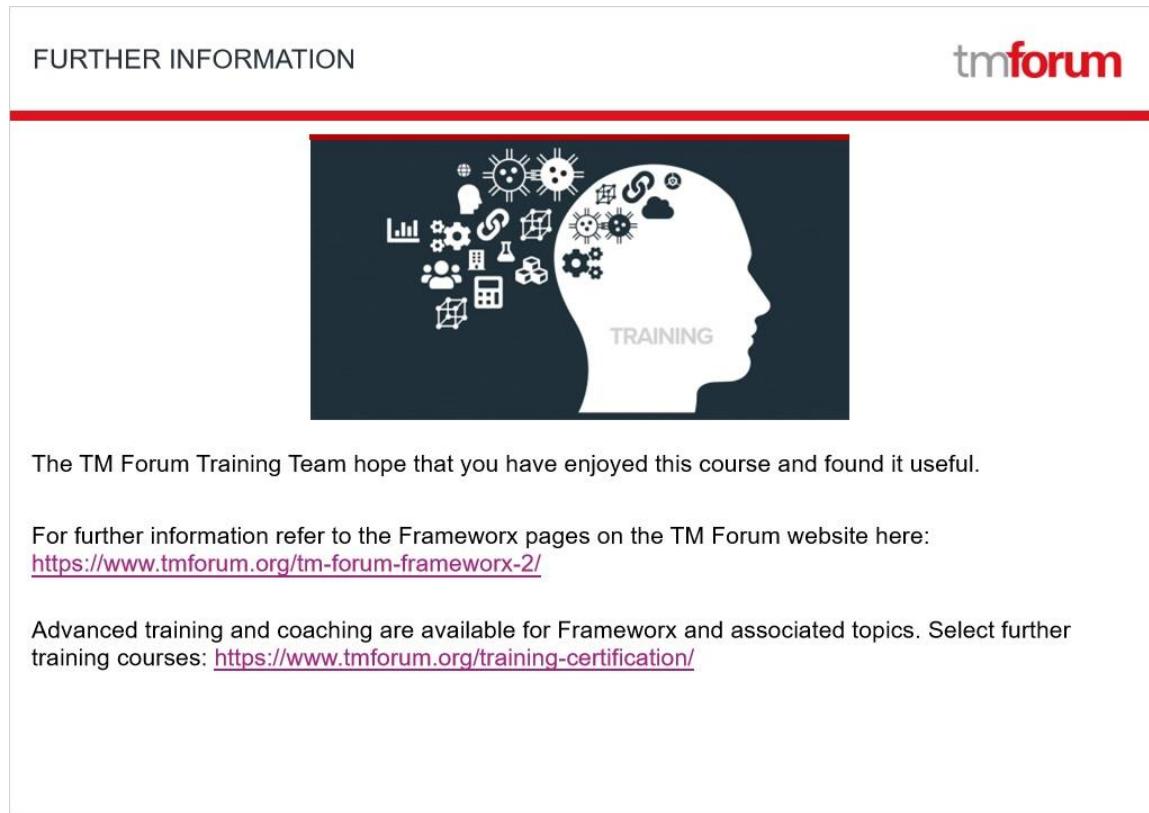
The certification exam is free to TM Forum members and they will be enrolled within one week of course completion, while non-members may contact education@tmforum.org to arrange exam purchase and enrolment.

Candidates will have a 30-day period in which to take the 40 question / multiple-choice exam, at their convenience. Once launched, the candidate will have one hour to submit their exam.

More details on TM Forum Certification can be found here: <https://www.tmforum.org/training-certification/career-certification/>

Notes:

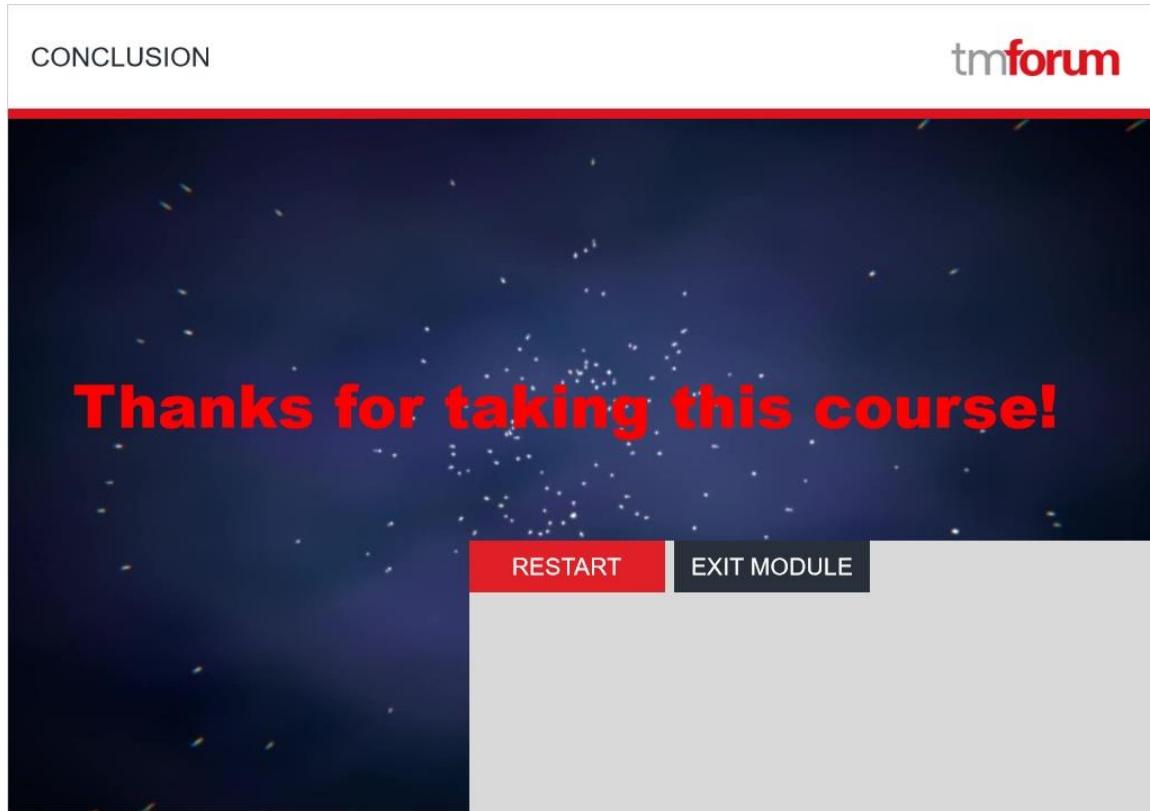
FURTHER INFORMATION



Notes:

CONCLUSION

CONCLUSION



Notes: