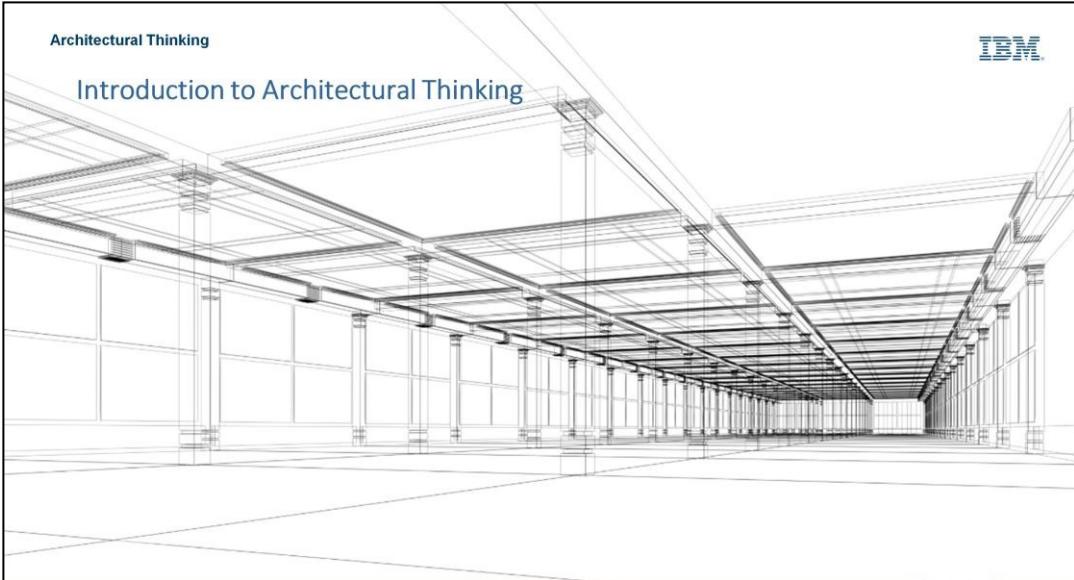


## Introduction to Architectural Thinking



### Module 5 Architect Skills and Capabilities



Version 2

Architectural Thinking

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Welcome to module 5 of the Introduction to Architectural Thinking self-study course. This module is about Architect skills and capabilities.

## Module Outline



### ► Introduction and Objectives

#### Architect Core Capabilities

- Architectural Approach
- Architecture
- Governance and Project Management
- Leadership and Influence

#### Additional Capabilities and Skills

#### Summary

Architectural Thinking

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Here are the topics that we will be discussing in this module. First we'll see the introduction and objectives, and then we get into the Architect capabilities, including architectural approach, architecture, governance and project management, and leadership and influence. Then we will look at some additional capabilities and skills before concluding with a module summary. Let's start now with the introduction and objectives.

## Module Overview



This module describes the Architect capabilities.

- Differences among skills, capabilities, and competencies
- Overview of Architect core capabilities
- Description of each capability
- Additional capabilities and skills



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This module describes the Architect capabilities. It begins with an explanation of the differences among skills, capabilities, and competencies. Then it provides a brief overview of the Architect core capabilities. Each individual capability is then described. The module concludes with a description of additional capabilities and skills that Architects need.

## Modules Objectives



At the end of this module, you should be able to:

- State the differences among capabilities, skills, and competencies
- Identify and describe the Architect core capabilities
- Describe how the core capabilities relate to validation
- Explain why an Architect needs to know the Architect core capabilities
- Describe some of the other skills an Architect needs



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At the end of this module, you should be able to state the differences among capabilities, skills, and competencies, identify and describe the Architect core capabilities, describe how the core capabilities relate to validation, explain why an Architect needs to know the Architect core capabilities, and describe some of the other skills an Architect needs.

## Module Outline



Introduction and Objectives

### ► **Architect Core Capabilities**

- Architectural Approach
- Architecture
- Governance and Project Management
- Leadership and Influence

Additional Capabilities and Skills

Summary

Architectural Thinking

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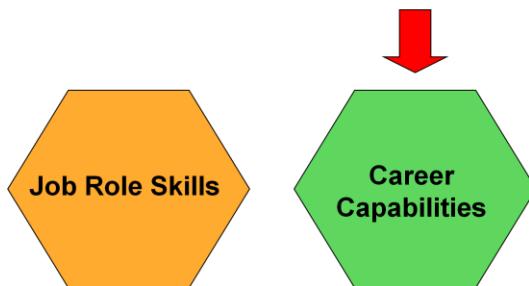
Let's talk about Architect core capabilities now.



- 250 defined job roles in IBM
- Each with defined skills and skill sets
- Used on your current job

Let's compare capabilities to skills and competencies. First, skills are unique to specific jobs. You use skills to perform your job today. You continue to increase your skills over time as you gain experiences and increase your knowledge through both on-the-job and formal training.

## What are capabilities? (2 of 4)



- 250 defined job roles in IBM
- Each with defined skills and skill sets
- Used on your current job

- Demonstrated behaviors in broad areas
- Knowledge, skills, abilities, and competencies combined

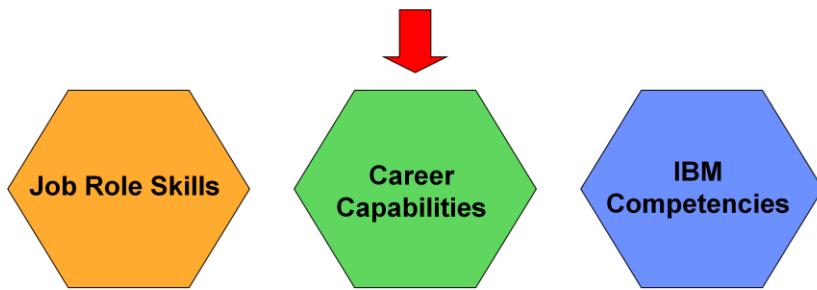
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So, what are capabilities? Capabilities are demonstrated behaviors in broad areas such as architecture, consulting, or project management. They require a combination of applied knowledge, skills, abilities, and competencies. They are developed over the course of a career.

## What are capabilities? (3 of 4)



- 250 defined job roles in IBM
- Each with defined skills and skill sets
- Used on your current job

- Demonstrated behaviors in broad areas
- Knowledge, skills, abilities, and competencies combined

- Core, common, and critical behaviors every person in IBM needs to demonstrate
- Applies to all job roles and bands

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Competencies are nine specific, core, common, critical behaviors that every person in IBM needs to demonstrate. This includes executives, managers, and non-manager employees as well. The IBM competencies apply to all job roles and all band levels.

## What are capabilities? (4 of 4)



- 250 defined job roles in IBM
- Each with defined skills and skill set
- Used on your current job

- Demonstrated behaviors in broad areas
- Knowledge, skills, abilities, and competencies combined

- Core, common, and critical behaviors every person in IBM needs to demonstrate
- Applies to all job roles and bands

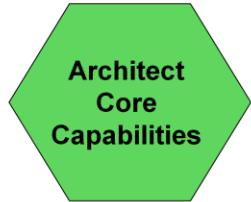
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IBM competencies and skills are components used, over time, to build and demonstrate the broader and longer-term capabilities.

## What are the Architect core capabilities? (1 of 7)

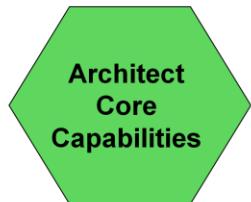


18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence

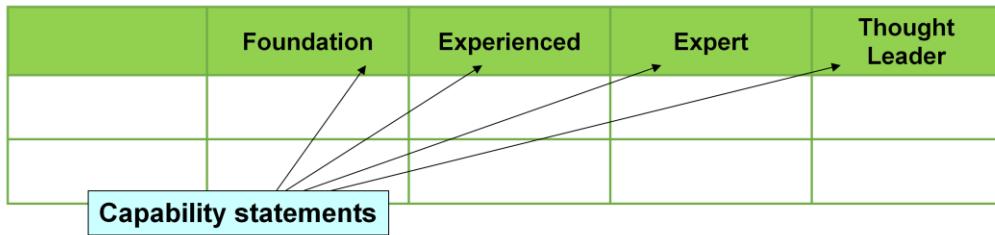
Architect core capabilities convey the key dimensions of the Architect role. They are important to our clients and provide a consistent worldwide framework to support you in your work. There are 18 core capabilities grouped into four categories: Architectural Approach, Architecture, Governance and Project Management, and Leadership and Influence.

## What are the Architect core capabilities? (2 of 7)



18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence



Architectural Thinking

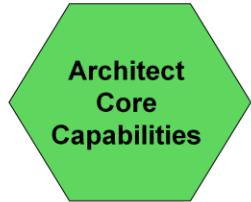
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Core capability statements are written to describe actual experiences and behaviors that employees must demonstrate in a specific level.

Capability statements for each capability level show increased requirements as you progress in the capability.

## What are the Architect core capabilities? (3 of 7)



18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence

	Foundation	Experienced	Expert	Thought Leader
	Contributed, assisted			

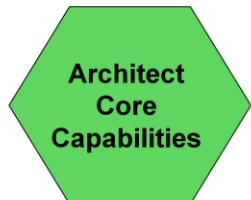
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In general, Foundation-level Architects are in assisting and contributing roles.

## What are the Architect core capabilities? (4 of 7)



18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence

	Foundation	Experienced	Expert	Thought Leader
	Contributed, assisted	Performed with minimal supervision		

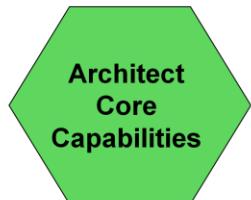
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At the Experienced level, Architects can perform with minimal supervision.

## What are the Architect core capabilities? (5 of 7)



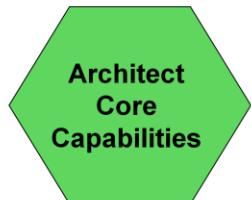
18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence

	Foundation	Experienced	Expert	Thought Leader
	Contributed, assisted	Performed with minimal supervision	Performed independently multiple times	

At the Expert level, Architects should have experience performing independently multiple times.

## What are the Architect core capabilities? (6 of 7)



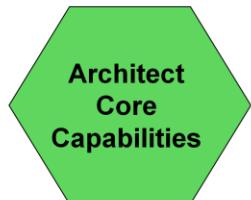
18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence

	Foundation	Experienced	Expert	Thought Leader
	Contributed, assisted	Performed with minimal supervision	Performed independently multiple times	Led the effort; strategic, complex projects

Finally, at the Thought Leader level, Architects are providing leadership in strategic, complex, cross-organization, or cross-cultural boundary projects.

## What are the Architect core capabilities? (7 of 7)



18 core capabilities divided into four categories:

1. Architectural Approach
2. Architecture
3. Governance and Project Management
4. Leadership and Influence

	Foundation	Experienced	Expert	Thought Leader
All 18 core capabilities	✓	✓	✓	
13 of the core capabilities				✓

All 18 of the core capabilities are required at the Foundation, Experienced, and Expert level validation in the Career Framework. Thirteen of those core capabilities are also required at the Thought Leader level. In a later module of this course, you will learn about tools to help you grow these capabilities.

## What are the components of a core capability?



Capability theme

Capability guidance

Capability statement

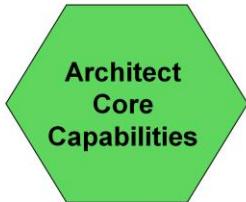
Evidence requirements

Architectural Decisions
Determined, documented, and communicated architectural decisions to support and rationalize the solution.
Examples of architectural decisions may include: <ul style="list-style-type: none"><li>• Reason for choosing an architectural pattern or style.</li><li>• Reason for choosing tools and platforms.</li><li>• Important decisions about any aspect of the architecture such as the structure of the solution; the provision and allocation of function; function, information, and technology placement; and adherence to standards.</li><li>• Technical alternatives selection.</li></ul>
Architectural decisions should be based on sound architectural principles, rationale formulated from trade-off evaluation, and business value.
Examples of qualifying evidence may include: <ul style="list-style-type: none"><li>• Documented architectural decisions in your engagements.</li></ul>
Provide THREE examples where you determined, documented, and communicated the rationale to support architectural decisions for the solution.

There are several components to each core capability. The “theme” is the name of the capability, which, in this example, is “Architectural Decisions.” Within a capability theme, capability statements are defined for each applicable level. The Expert-level statement is shown in this example. The statement describes the specific experiences and behavior required for the level. This is followed by guidance. Guidance describes the types of experiences the employees must have in order to demonstrate the capability. It also provides additional information or clarification to the capability statement. Finally, the evidence requirements describe the specific evidence needed to be validated successfully at this level.



**Time for a question**



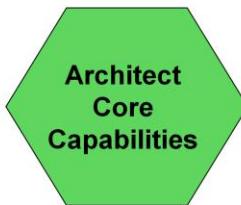
Which of the following is NOT one of the four Architect core capability categories?

- A. Architectural Approach
- B. Architectural Leadership
- C. Architecture
- D. Governance and Project Management

Now that we have had a quick overview of Architect core capabilities, can you identify which of these four items is not one of the categories we discussed previously? Is it Architectural Approach? Architectural Leadership? Architecture? Or is it Governance and Project Management? Pause the presentation at this point to decide how you will answer this question. Resume when you are ready to continue.



**Time for a question**



Which of the following is NOT one of the four Architect core capability categories?

- A. Architectural Approach
- B. Architectural Leadership
- C. Architecture
- D. Governance and Project Management

The correct answer is B, Architectural Leadership. Architectural Leadership is one of the core capabilities grouped into the Leadership and Influence category.

## Module Outline



Introduction and Objectives

Architect Core Capabilities

### ► **Architectural Approach**

- Architecture
- Governance and Project Management
- Leadership and Influence

Additional Capabilities and Skills

Summary

Architectural Thinking

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Let's look at each of the capabilities and the categories more closely, starting with Architectural Approach.

## Architectural Approach



Architectural Approach is the group of capabilities that Architects need to formulate architecture.

- ✓ Architectural methods
- ✓ Architectural modeling techniques
- ✓ Architectural thinking



Philadelphia museum, USA

Architectural Thinking

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Architectural Approach is the group of capabilities that Architects need to formulate architecture.

Architects use formal [architectural methods](#) to guide the development of solutions, the management of their work, and the production of their deliverables.

Architects use appropriate [architectural modeling techniques](#) to help describe the problem space, to size the solution, or to validate that the proposed architecture addresses the business or nonfunctional requirements.

Architects apply [architectural thinking](#) when approaching a business problem or developing architecture, viewing the broad context while incrementally creating parts of the overall solution.

Let's look at each of these capabilities a bit more closely.

## Architectural Methods (1 of 2)



Select, tailor, and guide the use of appropriate, rigorous, structured, and recognized architectural methods in the delivery of work products and the execution of processes.

✓      ✓      ✓

	Foundation	Experienced	Expert	Thought Leader
Architectural Methods	Assisted	Used one recognized method	Used one recognized method on multiple occasions	

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Here you see the capability statement for architectural methods. When we talk about architectural methods, we are talking about selecting, tailoring, and guiding the use of appropriate, rigorous, structured, and recognized architectural methods in the delivery of work products and the execution of processes.

At a minimum, Architects should exhibit this capability at the Foundation, Experienced, and Expert levels. At the Foundation level, this means assisting in the use of a recognized method. At the Experienced level, this is successfully using one recognized method. And at the Expert level, the Architect should have successfully used at least one recognized method on multiple occasions.

The intent is to ensure that employees use formal methods to guide and drive the architecture design and production of their deliverables.

## Architectural Methods (2 of 2)



Select, tailor, and guide the use of appropriate, rigorous, structured, and recognized architectural methods in the delivery of work products and the execution of processes.

✓      ✓      ✓

	Foundation	Experienced	Expert	Thought Leader
Architectural Methods	Assisted	Used one recognized method	Used one recognized method on multiple occasions	

Examples include acceptable Unified Method Framework (UMF) delivery processes such as:

- Team Solution Design (TeamSD)
- SOMA
- Custom Development
- AD 2.0

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Examples of valid methods include many acceptable delivery processes in the Unified Method Framework such as Team Solution Design, Services Oriented Modeling and Architecture (SOMA), Custom Development, or Application Development 2.0.



Select and use appropriate modeling techniques for the development of architecture models in order to guide, communicate, validate, and test proposed solutions and outcomes against requirements.

✓ ✓ ✓

	Foundation	Experienced	Expert	Thought Leader
Architectural Modeling Technique	Assisted	Selected and used with minimal supervision	Selected and used multiple times	

Now we see the capability statement for architectural modeling techniques. Architects need to be able to select and use appropriate modeling techniques for the development of architecture models in order to guide, communicate, validate, and test proposed solutions and outcomes against requirements. At the Foundation level, this means assisting in the selection and use of modeling techniques. At the Experienced level, it means selecting and using modeling techniques with minimal supervision. And at the Expert level, it means selecting and using modeling techniques without supervision.

The intent is to ensure that Architects have experience developing and interpreting models that describe the architecture from all the necessary viewpoints for the problem at hand.



Select and use appropriate modeling techniques for the development of architecture models in order to guide, communicate, validate, and test proposed solutions and outcomes against requirements.



	Foundation	Experienced	Expert	Thought Leader
Architectural Modeling Technique	Assisted	Selected and used with minimal supervision	Selected and used multiple times	

#### Examples:

- Business Activity Model
- Enterprise Information Model
- Performance Model
- Application Function Model (Application Component Model)
- Enterprise Technology Framework
- Operational Model

Examples of models include the Business Activity Model, Enterprise Information Model, Performance Model, Application Function Model (also called the Application Component Model), Enterprise Technology Framework, and Operational Model.

## Architectural Thinking



Apply sound, creative, and innovative architectural thinking to enhance and expand the implementation of architectural principles, practices, and concepts to meet the business intent or the delivery of solutions.

✓ ✓ ✓

	Foundation	Experienced	Expert	Thought Leader
Architectural Thinking	Began to apply sound, methodical approach	Applied sound, methodical approach	Applied sound, creative, innovative architectural thinking	Led and applied architectural thinking that delivered positive impact and results to the business

Architectural Thinking

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And for the Architectural Thinking capability, you can see that early in their career, Architects are expected to be able to apply sound, methodical approaches when developing solutions. As they progress, the same principles can be used to apply creative and innovative thinking to architectural practices, concepts, strategies, visions, and so forth. And finally, at the Thought Leader level, their architectural thinking should help them deliver a positive impact and results to the business.



### Familiarize yourself with core capabilities

1. Click this link to access the [Defining Architectures](#) page in Career Framework.
2. Browse around and locate the capability statements and guidance for the four capability levels.
3. For each of the three core capabilities we discussed so far, compare the statements and guidance for each capability level.
4. Answer the following question:

At which level does this phrase appear?

*Contributed to the improvement of IBM or client architectural methods*

- A. Foundation level
- B. Experienced level
- C. Expert level
- D. Thought Leader level

Now that you have started to learn about the core capabilities, you can learn more by going to the Defining Architectures page of the Career Framework website. The latest version of the content is always published on this page. It is important that you know your way around. After you have explored and read about the three core capabilities we have discussed so far, you can answer the question shown here. Please pause this presentation now, and take the time to visit the Career Framework website. Return here to answer the question when you're ready.

## Activity (2 of 2)



### Familiarize yourself with core capabilities

1. Click this link to access the [Defining Architectures](#) page in Career Framework.
2. Browse around and locate the capability statements and guidance for the four capability levels.
3. For each of the three core capabilities we discussed so far, compare the statements and guidance for each capability level.
4. Answer the following question:

At which level does this phrase appear?

*Contributed to the improvement of IBM or client architectural methods*

- A. Foundation level
- B. Experienced level
- C. Expert level**
- D. Thought Leader level

The correct answer is C, Expert level. The phrase is part of the guidance for the Expert level statement of the Architectural Methods theme.

## Module Outline



Introduction and Objectives

Architect Core Capabilities

- Architectural Approach

► **Architecture**

- Governance and Project Management
- Leadership and Influence

Additional Capabilities and Skills

Summary

Architectural Thinking

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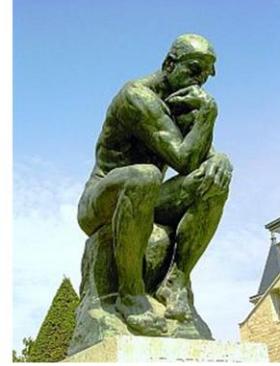


The next set of core capabilities is grouped into the Architecture category.



Architecture encompasses the main capabilities that Architects use.

- Develop architecture
- Be proficient at different aspects
  - Assessment
  - Validation
- Develop solutions
  - Harvest and reuse architectural assets
  - Apply standards
  - Document architectural decisions



The Musée Rodin in Paris

The Architecture category of the core capabilities encompasses the main capabilities that Architects use. First of all, **developing the architecture** is the Architect's primary responsibility. Architects must be proficient at different aspects that go into the formulation of architectures such as **assessment** and **validation** of architectures.

As a part of solution development, Architects must be able to **harvest and reuse architectural assets**, **apply standards**, and document **architectural decisions**.

## Architectural Asset Creation and Reuse (1 of 2)



Define or create architectural work products so that they can be identified and reused or leverage previously developed assets.



	Foundation	Experienced	Expert	Thought Leader
Architectural Asset Creation and Reuse	Contributed; assisted	Performed with minimal supervision	Performed independently multiple times	Led the effort

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Architects must have experience with asset creation or the reuse process. They should understand asset creation, asset community, and asset consumption. Specifically, these assets must be architectural artifacts or work products. At the Foundation and Experienced levels, Architects should have experience in creating assets OR experience in leveraging previously developed assets. At the Expert and Thought Leader levels, the Architects must have experience in creating AND reusing assets.

## Architectural Asset Creation and Reuse (2 of 2)



Define or create architectural work products so that they can be identified and reused or leverage previously developed assets.



	Foundation	Experienced	Expert	Thought Leader
Architectural Asset Creation and Reuse	Contributed; assisted	Performed with minimal supervision	Performed independently multiple times	Led the effort

Examples of assets:

- Published lessons learned
- Whitepapers, IBM Redbooks®
- Specific solutions
- Component Business Models

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Here are some examples of assets. As you can see, typical architectural assets include architectural patterns, frameworks, and reference architectures. In addition, you can claim other assets such as published lessons learned, whitepapers, IBM Redbooks, and specific solutions, given that they are architectural in nature.

## Architectural Decisions (1 of 2)



Determine, document, and communicate architectural decisions to support and rationalize the solution.



	Foundation	Experienced	Expert	Thought Leader
Architectural Decisions	Assisted	Performed with minimal supervision	Performed independently multiple times	Identified and drove strategic architectural decisions

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During the course of developing solutions, Architects must make many decisions regarding their architectures. They must document these architectural decisions. Many issues may arise if the key decisions are not documented. For example, decisions may be inconsistent and may contradict other decisions. Or different parties may encounter the same issues, and each party arrives at a different decision. Also, you may have difficulty getting closure on a decision due to an unclear rationale. In addition to documenting the decisions, Architects must be able to communicate the decisions to stakeholders and provide the rationale behind those decisions.



Determine, document, and communicate architectural decisions to support and rationalize the solution.



	Foundation	Experienced	Expert	Thought Leader
Architectural Decisions	Assisted	Performed with minimal supervision	Performed independently multiple times	Identified and drove strategic architectural decisions

#### Examples:

- Reason for choosing an architectural pattern, style, tools, or platforms
- Important decision about any aspect of the architecture
- Technical alternatives selection

Architectural decisions should be based on sound architectural principles, rationale formulated from tradeoff evaluations, and business value. Some of the examples of architectural decisions can be the reason for choosing things such as an architectural pattern, or an architectural style, or tools or platforms. They can also be important decisions about any aspect of the architecture such as the structure of the solution; the provision and allocation of function; function, information, and technology placement; and adherence to standards. And finally, if you have selected a technical alternative, you should document the reasons for that selection, as well.

## Architectural Development (1 of 2)



Develop architectures that can be validated to meet business intent.



	Foundation	Experienced	Expert	Thought Leader
Architectural Development	Assisted	Developed architectures with minimal supervision	Developed architectures independently multiple times	Led the development of architectures

Architectural Thinking

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Architects develop architectures and the definition of the structures of business and IT solutions to a business problem.

In order to accomplish this, you must be proficient at the techniques that go into the formulation of architectures.

At the Foundation level, Architects assist experienced Architects in developing different components of the architecture. At the Experienced level, Architects should be able to develop architectures with minimal help; in the Expert level, the Architects must be able to develop a variety of architectures. And finally, Architects at the Thought Leader level are leading the development, and they are providing leadership and guidance to other Architects and client teams.

## Architectural Development (2 of 2)



Develop architectures that can be validated to meet business intent.



	Foundation	Experienced	Expert	Thought Leader
Architectural Development	Assisted	Developed architectures with minimal supervision	Developed architectures independently multiple times	Led the development of architectures

Additional requirements for Experienced level:

- 6 months with IBM
- 2 years producing architectures

Additional requirements for Expert level:

- 12 months with IBM
- 4 years producing architectures

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To ensure that Architects have developed the architectural experience and that they have done so within the IBM environment, they are required to meet the additional tenure requirements: To meet the requirements of the Experienced level, Architects must have at least two years of experience producing architectures and have done so as an IBM employee for at least six months. An expert level architect must have at least four years of experience producing architectures and must have done so as an IBM employee for at least a year.

## Architectural Validation Strategy



Verify, validate, and show traceability of the requirements by identifying measurable criteria for demonstrating that the system or solution satisfies the business intent and is accepted by the sponsor as a solution that can be successfully implemented.



	Foundation	Experienced	Expert	Thought Leader
Architectural Validation Strategy	Contributed	Performed with minimal supervision	Performed independently multiple times	Established governance practice

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In order to show that a developed architecture meets the business intent, the Architect must be able to verify, validate, and show traceability of the requirements. To do this, the Architects identify measurable criteria to show that the system or solution satisfies the business intent and is accepted by the sponsor as a successfully implemented solution. Similar to the other core capabilities, Architects at the Foundation level will provide a contribution or assistance. Experienced-level Architects will perform with minimal supervision while the Expert-level Architects can perform independently and on multiple occasions. At the Thought Leader level, the Architects must have experience establishing the enterprise or technology governance practice over which they are responsible to ensure the quality of the architectural integrity.

## Solution Assessment (1 of 2)



Assess the integrity and risks inherent in a proposed solution against the underlying business intent so that the recommendations and findings are appropriate, were acceptable to the client, and can be implemented.



	Foundation	Experienced	Expert	Thought Leader
Solution Assessment	Assisted	Performed with minimal supervision	Performed independently multiple times	Led the effort

When Architects are not actively developing a solution, they are sometimes called upon to assess a solution developed by other Architects. This can be at pre-sale to review a proposed solution or to assess existing architectures for clients. The Architect's task is to assess the integrity and risks of a proposed solution against the business intent. Their recommendations and findings must be appropriate, acceptable to the client, and able to be implemented.

## Solution Assessment (2 of 2)



Assess the integrity and risks inherent in a proposed solution against the underlying business intent so that the recommendations and findings are appropriate, were acceptable to the client, and can be implemented.



	Foundation	Experienced	Expert	Thought Leader
Solution Assessment	Assisted	Performed with minimal supervision	Performed independently multiple times	Led the effort

Types of assessments:

- Capability enabler coverage
- Change readiness
- Risk
- Technical Delivery Assessment
- Integrated Technical Review
- Project health review
- Architecture review

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There are many types of assessments. A few are listed here. Some assessments, such as change readiness and risk assessments, are generic assessments of a project, solution, or architecture. Others, like Technical Delivery Assessment and Integrated Technical Review (commonly abbreviated as TDA and ITR, respectively) are assessments specific to a particular IBM business unit.

## Standards for Solution Creation



Recommend and, if applicable, establish, implement, and enforce appropriate standards in the creation and implementation of the solution to meet those requirements that call for or benefit from the use of standards.

✓      ✓      ✓      ✓

	Foundation	Experienced	Expert	Thought Leader
Solution Assessment	Assisted	Performed with minimal supervision	Performed independently multiple times	

Architectural Thinking

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Standards provide the general “policy-level” statements. These sets of “rules” may have been determined by a previous study or may be de facto or de jure standards based on installed technology or management practices. When producing an architecture, Architects often have to apply industry, client, or IBM standards. They need to be able to recommend, establish, implement, and enforce appropriate standards for the architecture they are creating.



**Time for a question**



In general, the capability statements show progression from assisting at the Foundation level to leading in the Thought Leader level. Which one of the following core capabilities is substantially different at the Thought Leader level?

- A. Architectural Asset Creation and Reuse
- B. Architectural Development
- C. Architectural Validation Strategy
- D. Solution Assessment

Please pause the presentation at this point, read the question, and think about the four choices. Which one do you think is correct? When you have your answer, resume the presentation.



**Time for a question**



In general, the capability statements show progression from assisting at the Foundation level to leading in the Thought Leader level. Which one of the following core capabilities is substantially different at the Thought Leader level?

- A. Architectural Asset Creation and Reuse
- B. Architectural Development
- C. Architectural Validation Strategy**
- D. Solution Assessment

The correct answer is C. The capability statement of architectural validation strategy at the Thought Leader level states that Architects must have experience establishing the enterprise or technology governance practice over which they are responsible to ensure the quality of the architectural integrity.



### How to handle changing client needs and requirements

- Complex Service Delivery projects should be based on Systems Engineering (SE) best practices.
  - System Engineering (SE) reviews
  - Technical baselines
  - Traceability of requirements
  - Technical management



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In the following slides, Hiromitsu Miyazaki provides some tips on handling changing client needs and requirements. He is an IBM Executive Staff member in S&D and is also the Architect profession leader in the Japan integrated operating team (IOT).

Here's what he has to say.

We need to conduct large, complex Service Delivery projects based on Systems Engineering (SE) reviews and technical baselines, traceability of requirements, and technical management in order to prevent the projects from failing because we cannot handle a lot of changing requirements and creep of requirements in projects.



### How to handle changing client needs and requirements

- System Engineering (SE) reviews in UMF
- Keyed to project baselines
- Basis of change control and management



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SE introduced a set of technical reviews for custom development methods in UMF. The technical reviews are keyed to project baselines. For example, the customer baseline is fixed at the Business Requirements Review (BRR). The technical baseline provides a reference for the expected maturity of a project at different development milestones. It is also the basis of change control and management. So, we manage changing client needs and requirements with technical baseline control.



## How to handle changing client needs and requirements

- Three categories of requirements
  - Requirement traceability and verification matrices added to UMF.
  - Able to handle changing client needs and requirement through SE best practices



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SE model defines three categories of requirements: stakeholder requirements (also called business requirements, business process requirements, or customer requirements), system requirements, and component requirements. We need consistent requirements traceability. The requirements traceability and verification matrix (RTVM) enforces the consistency. RTVM was added as work products to the UMF to ensure traceability from business requirements to system requirements, to component requirements, and finally to test a method to ensure consistency through the different phases of development, test, and integration. Therefore we can handle changing client needs and requirements with systems engineering (SE) reviews and technical baselines, and also traceability of requirements.



### How to handle changing client needs and requirements

- Three essential SE&A tasks and output



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Task	Input	Output
1. Analysis and definition of stakeholders and their requirements	<ul style="list-style-type: none"> <li>Business plans</li> <li>Consultant's outputs</li> <li>RFP, proposal, meeting minutes, call memo</li> </ul>	Stakeholder Requirements Definition

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There are three essential SE&A tasks and outputs. For the task to Analyze and define stakeholders and their requirements, the inputs are the business plans, consultant's outputs, RFP, proposal, meeting minutes, and call memo. The output of this task is Stakeholder Requirements Definition. It is optional if the client's business environment and the project objective are well understood, if the relationships among stakeholders are not complex, and if stakeholder requirements are well documented.



### How to handle changing client needs and requirements

- Three essential SE&A tasks and output



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Task	Input	Output
2. Analysis and definition of system requirements	<ul style="list-style-type: none"> <li>Stakeholder Requirements Definition</li> <li>Business process flow</li> <li>Architect's output</li> <li>List of functions</li> <li>RFP, proposal, meeting minutes, call memo</li> </ul>	Stakeholder Requirements Definition

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The second task is to analyze and define system requirements. One input to this task is the stakeholder requirements definition that was the output of the previous task. Other inputs include business process flow, Architect's output, list of functions, and as before, RFP, proposal, meeting minutes, and call memo. The output of this task is the Stakeholder Requirements Definition.



### How to handle changing client needs and requirements

- Three essential SE&A tasks and output



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Task	Input	Output
3. Mapping between stakeholder and system requirements	<ul style="list-style-type: none"> <li>Stakeholder Requirements Definition</li> <li>System Requirements Definition</li> <li>List of functions</li> </ul>	Requirements Traceability Verification Matrix (RTVM)

The third task is to map between stakeholder and system requirements. The inputs to this task include the output from the previous two tasks – Stakeholder Requirements Definition and the System Requirements Definition, along with a list of functions. The output of this task is the Requirements Traceability Verification Matrix (RTVM) that was mentioned previously and is one of the ways to help us handle changing client needs and requirements. In the Summary section of this course, you can download this article in its entirety, including the description of each of these three essential tasks.

## Module Outline



Introduction and Objectives

Architect Core Capabilities

- Architectural Approach
- Architecture
- ▶ **Governance and Project Management**
- Leadership and Influence

Additional Capabilities and Skills

Summary

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The next topic is the Governance and Project Management category of the core capabilities.



Architects must do the following:

- Manage architectural risk elements in a project plan.
- Use project planning principles.
- Employ solid client relationship skills.
- Manage stakeholder requirements.



Plaza del Congreso, Buenos Aires, Argentina

The Governance and Project Management category includes the capabilities Architects use to manage the project and client aspects of their role. Architects are responsible for managing **architectural risk** elements in a project plan. They must understand **project planning** principles to provide estimates for resources, time, and deliverable definition. Architects must have a high level of **client relationship** skills. They must have the proficiency to manage the **stakeholder requirements** that their solutions must satisfy.

## Architectural Risk Management



Identify the elements of a project that put the integrity of the architecture at risk and manage those elements to the successful completion of the project.



	Foundation	Experienced	Expert	Thought Leader
Architectural Risk Management	Contributed	Performed with minimal supervision	Performed independently multiple times	Led and managed architectural strategy to mitigate risk

Project Managers typically manage risks in a project, but Architects must be able to identify and manage risks that affect the integrity of the architecture. They must also be able to identify architectural elements of a project that affect the budget or timeline. Sometimes risk identification and mitigation tools such as GS Risk are used.

## Client Relationship Management



Develop, maintain, and manage client relationships (internal and external) at functional and executive levels throughout the organization.



	Foundation	Experienced	Expert	Thought Leader
Client Relationship Management	Assisted	Performed with minimal supervision	Performed independently multiple times	Established strong partnership; viewed as trusted advisor

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Architects work with clients. It is important to have a good relationship with clients. This may include managing client expectations, as well as developing and fostering strong trust-based relationships. The clients can be internal or external to IBM.

## Project Planning



Develop the approach and plans for architectural engagements and ensure that the approach and plans for delivery of the architecture are driven from and supported by the defined architecture.



	Foundation	Experienced	Expert	Thought Leader
Project Planning	Contributed; assisted	Performed with minimal supervision	Performed independently multiple times	Led the effort

Although Architects are not Project Managers, they must understand the fundamentals of project management and planning to communicate with the Project Managers. In addition, Architects typically collaborate with project managers to provide technical input, estimate resources, analyze the scope of a project, and identify additional projects and phases.

## Stakeholder Requirements Management



Identify, document, clarify, refine, detail, prioritize, and manage business goals, objectives, functional and nonfunctional requirements, and constraints.



	Foundation	Experienced	Expert	Thought Leader
Stakeholder Requirements Management	Contributed; assisted	Performed with minimal supervision	Performed independently multiple times	Advocated business requirements

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Requirements form the basis of communication and agreement among various stakeholders including the client, the architecture team, and development team. Architects must be able to identify, document, and clarify these requirements. As the project progresses, they then need to refine, detail, prioritize, and in general manage these requirements. These requirements include business goals, objectives, and functional and nonfunctional requirements.



**Time for a question**



Which of the following project management tasks are done by Architects?

- A. Identify risks in architectural elements of the project plan
- B. Estimate technical resources
- C. Analyze the scope
- D. All of the above

Please pause the presentation at this point, read the question, and think about the four choices. Which one do you think is correct? When you have your answer, resume the presentation.



**Time for a question**



Which of the following project management tasks are done by Architects?

- A. Identify risks in architectural elements of the project plan
- B. Estimate technical resources
- C. Analyze the scope
- D. All of the above

The correct answer is D. The Architects collaborate with Project Managers to do all of the tasks listed here.



### How to build an effective client relationship

Five factors for building a good client relationship

1. Demonstrate experience.

- Builds credibility with the client
- Shows willingness to partner with the client
- Shows an understanding of the problem
- Brings in problem solving-techniques



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Kerrie Holley is an IBM Fellow and the World Wide Application Integration Services CTO and CTO BPO & SOA Center of Excellence. Let's hear what he has to say about building a client relationship. My name is Kerrie Holley, and I wanted to give some advice on how to build an effective client relationship. I believe there are five factors for building a good client relationship. First it's about experience. It's about our demonstration of experience. If a client knows that you have a wealth of experience in the area that you're consulting, the area that you are doing development, the area that you're giving advice, obviously this builds credibility with that client - with that customer. And of course problem solving skills and a willingness to partner with the client are key. That means that we've got to be good listeners. We've got to be able to understand the problem. And we've got to be able to bring many different problem-solving techniques to the problem at hand. That's of course what a good architect does.



### How to build an effective client relationship

Five factors for building a good client relationship

2. Demonstrate success addressing multiple experiences and complex problems.

- We are the subject matter experts.
- We are someone who know lessons learned and best practices.
- We can spot patterns, adept at proposing solutions to these patterns.



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Secondly, we must demonstrate that we've had success addressing multiple experiences and complex problems. That is, we are a subject matter expert. We are someone who's done this before. We are someone who has knowledge of lessons learned versus best practices. We know both.

And obviously by being exposed to multiple experiences, the good and the bad, as an architect we begin to easily spot patterns, see problems as they emerge and as a result as an architect we become adept at proposing solutions to these patterns.



### How to build an effective client relationship

Five factors for building a good client relationship

3. Soft skills are just as important.

- Critical thinking
  - Not to be subjected to our biases
  - Findings that support hypothesis
  - Indicators of a good design
- Communication skills include
  - Writing
  - How we present our ideas
  - Persuasive skills



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Third, our soft skills are just as important as the other two skills I just mentioned. Those skills of course include critical thinking. Nothing is more important than clarity of thought. Not to be subject to our biases to really do that hypothesis thinking and to find findings that support that hypothesis and to draw good conclusion. So another understanding of this is of course of, you know, reflects a good design.

So communication skills include writing, they include how we present our ideas and of course they include our persuasive skills, our influential skills that we bring to the table.



### How to build an effective client relationship

Five factors for building a good client relationship

#### 4. Apply leadership skills.

- Key to our success
- Ability to lead a team
- Communication to management and to the team



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Fourth, leadership. Leadership could be a category in and of itself. But it's key to our success. Leadership involves our ability to lead a team, to be a benevolent dictator, to get the team to understand its goals, to understand the objectives and of course the balance because we must be able to, you know, satisfy complex scenarios and we must motivate the team to engage, to collaborate and to have high performance. So our ability to treat each member of the team as an individual is a part of our leadership skills. And of course that involves communication both to our management from both the on the ground and at the executive level and the communication to the team on the ground.



### How to build an effective client relationship

Five factors for building a good client relationship

5. Demonstrate the ability to juggle the requirements.

- Approach problem and solution in a disciplined manner.
- Solution implementation will see constraints, differing opinions.  
We must treat the client as a partner.
- It's most important is to seek an outcome that matters.



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And last but not least, that fifth factor is our ability to balance, to juggle what often are a series of requirements, some of which may not be able to be satisfied. Any successful client engagement approach approaches the problem and the solution in a disciplined manner.

And as the solution is being implemented, we will see constraints, we will see stakeholders who have differing opinions, different interpretations. We must treat our client as a partner and we must engage in a collaborative manner to bring about the right outcome. So our ability to not seek perfection but to seek an outcome that matters is what's most important.

And thank you.

## Module Outline



- Introduction and Objectives
- Architect Core Capabilities
  - Architectural Approach
  - Architecture
  - Governance and Project Management
  - ▶ **Leadership and Influence**
- Additional Capabilities and Skills
- Summary

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The final category of core capabilities is Leadership and Influence.



The “soft” capabilities that increase the effectiveness of Architects are as follows:

- Provide **team leadership** skills and **architectural** directions to clients and team.
- Use **solid communications** and **consulting** skills.
- Use **negotiation** to resolve conflicts and obtain the cooperation of others.



Kyoto National Museum, Kyoto, Japan

The Leadership and Influence category contains the “soft” capabilities that increase the effectiveness of Architects.

Architects are leaders, providing **technical and team leadership** skills and architectural direction in their work, to their clients, and to their team.

They must have a high level of **communication** and **consulting** skills to clearly communicate complex technical and business concepts to clients and team members. Architects use **negotiation** as a method of communication that enables them to resolve conflicts and obtain the cooperation of others in a project environment.

## Architectural Leadership (1 of 2)



Perform as a leader, providing architectural knowledge, direction, and leadership to guide the team to perform the work to completion.

✓ ✓ ✓ ✓

	Foundation	Experienced	Expert	Thought Leader
Architectural Leadership	Assisted team leader	Led team in at least one project	Led teams multiple times	Led teams on complex, strategic projects

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Effective Architects are leaders, providing knowledge, business, technical, and team leadership skills in their work, to their clients, and for their teams. Architects must demonstrate and exercise business and technical leadership skills, such as serving as a Lead Architect and being responsible for making significant architectural decisions, leading a business or technical team, making key solution decisions, owning the solution and directing the team, and providing sustained guidance to team members.

## Architectural Leadership (2 of 2)



Perform as a leader, providing architectural knowledge, direction, and leadership to guide the team to perform the work to completion.



	Foundation	Experienced	Expert	Thought Leader
Architectural Leadership	Assisted team leader	Led team in at least one project	Led teams multiple times	Led teams on complex, strategic projects

Additional requirement for Experienced level:

- 12 months of technical direction and architectural leadership experience

Additional requirements for Expert level:

- 24 months of technical direction and architectural leadership experience

To ensure that Architects have the appropriate leadership experience in the capability levels, they are required to demonstrate 12 months of leadership experience at the Experienced level and 24 months of leadership experience at the Expert level.

## Architectural Strategic Direction



Identify approaches, tools, and techniques to meet the given requirements and explain the present and future rationale so that stakeholders accept the choices and agree with the rationale.

✓      ✓      ✓      ✓

	Foundation	Experienced	Expert	Thought Leader
Architectural Strategic Direction	Contributed; assisted	Performed with minimal supervision	Performed independently multiple times	Led multi-disciplinary initiatives across geo and organizations

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Effective Architects are able to set architectural strategic direction. They do so by identifying different approaches, tools, and techniques to meet the business intent. They must also be able to describe the rationale for these choices to obtain consensus from the stakeholders who will then accept the architectural decisions. At the Thought Leader level, architectural leaders influence decisions within and across organizations and cultural boundaries.

## Communication



Apply effective written and verbal communication skills in articulating architectural deliverables in a client environment.



	Foundation	Experienced	Expert	Thought Leader
Communication	Applied while assisting	Performed with minimal supervision	Performed independently multiple times	Advocated architectures and strategies

Architects are expected to be involved in direct communication with the client. They must be able to communicate and present critical architectural decisions, architectural concepts, and other deliverables to stakeholders and clients. Architects must be effective in both verbal and written communication.

## Consulting Techniques



Apply consulting techniques in a client environment and present the rationale so that stakeholders accept the choices and agree with the rationale.

✓      ✓      ✓      ✓

	Foundation	Experienced	Expert	Thought Leader
Consulting Techniques	Applied technique; contributed to presentation of rationale	Applied technique; presented rationale with minimal supervision	Mastered technique; presented rationale independently multiple times	

Architects use consulting techniques such as data collection, data analysis, hypotheses, force field analysis, functional decomposition, joint application design, and solution formulation. In addition, to have the skill to apply these techniques, Architects must be able to present their findings so that stakeholders accept their choices and agree with the rationale.

## Negotiation



Mediate opposing viewpoints and negotiate equitable outcomes to ensure successful and stable progress toward delivering the business intent.



	Foundation	Experienced	Expert	Thought Leader
Consulting Techniques	Assisted	Performed with minimal supervision	Performed independently multiple times	

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Architects often have to resolve technical or architectural issues within a project and among team members. They also have to resolve issues arising from multiple stakeholders who provide conflicting requirements. Architects need to know how to negotiate equitable agreements between parties and how to apply escalation processes that require higher authority for resolution.



**Time for a question**



Architects are expected to be in direct communication with clients; therefore, they need to be effective in verbal communication only.

- A. True
- B. False

Please pause the presentation at this point, read the statement, and decide whether you think the statement is true or false. When you have your answer, resume the presentation.



**Time for a question**



Architects are expected to be in direct communication with clients; therefore, they need to be effective in verbal communication only.

- A. True
- B. False**

The statement is False. Architects must be effective in both verbal and written communication to convey their architectural solution, architectural decisions and other deliverables to both clients and other stakeholders such as the development team.



### Illustrate leadership with a “war story”

- This was a large outsourcing deal, a troubled account.
- First, build a relationship with customer.
- Customer felt overcharged, but IBM was losing money.
- Services and service levels by offshore team were not performed at acceptable level.



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And now, Marnix Gillis, a senior certified architect and IBM Distinguished Engineer in GTS Belgium, shares a personal experience with us that exemplifies leadership.

This is about a troubled situation, a large outsourcing deal where the whole program was what we would call a troubled account. The way I came in, the first thing I tried to do is to build up a relationship with the organization of this outsourcing customer because of the troubled situation we were in. The transformation program was stuck. Financially, this was a situation where the customer was unhappy because he believed he had to pay too much. But, on the other hand, IBM was still losing money on the deal as well. Services and service levels in "business as usual" environment were performed by an offshore team, but it was not performed at an acceptable level. Everybody was blaming that offshore team, but that was too easy. They were not the only ones to blame.



### Illustrate leadership with a “war story”

- Business was not performing because transformation didn't complete.
- After building relationship with customer, set up a real design authority and governance.
- Design authority identified standards, technology policies – reference architectures.
- These were defined for the whole team.



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Primarily, already, because of the first point I indicated, the transformation didn't complete yet, so they were stuck with a situation that the business as usual was not performing because it wasn't transformed correctly. So the first thing I did, as I said in the beginning, was to try to form a relationship with the customer's organization and set up a real design authority and a governance around that design authority. The work of the design authority basically was to identify the standards, the technology policies as they are called, the reference architectures -- define these with the whole team, the IBM team and customer team, and communicate these to all stakeholders worldwide.



**Illustrate leadership with a “war story”**

- The role of the Design Authority is also to enforce the standards and policies.
- Define exceptions and run exception process with strict rules.



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The second thing is, once you have defined these and communicated them, you also need to enforce them. And that was also the role of that specific design authority. That is, putting a governance in place so that you can potentially define exceptions and run the exception process with strict rules that allow for business-justified deviations.



### Illustrate leadership with a “war story”

- Set up and define a long term strategy and vision.
- As an outsourcing provider, be prepared capacity-wise and process-wise.
- Be prepared for customer new business initiatives.



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The third thing was that I needed to set up and define a longer-term strategy and a longer-term vision, not only for the day-to-day operations but also to get some insight into the customer's business plan - that strategy in the long term, so that we, as an outsourcing provider, could be prepared capacity-wise, but also process-wise, in the way we have to perform the services, so that we could be prepared for what was coming up, for what the customer was planning as new business initiatives.



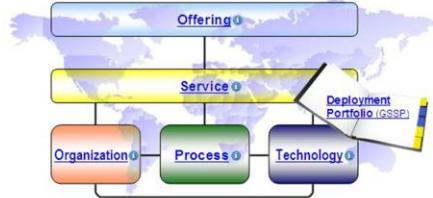
### Illustrate leadership with a “war story”

- Provide guidance to the team.
  - Use architectural work products.
  - Reuse elements from Global Services Architecture Repository (GSAR).



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### Global Solutions Architecture Repository



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In the end, I gave lots of guidance to the whole team, to use the architectural work products as they were defined and described, and as we all know them, but also reuse elements of what is described for SO customers what is known as GSAR, the Global Services Architecture Repository.



### Illustrate leadership with a “war story”

- Fire in the data center
- Took advantage of disaster to make new business opportunity
- Win-back in terms of solutions, hardware, and software components
- Valuable story about converting a troubled situation to a great opportunity.



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What happened then was, when everything was more or less okay, there was a fire in the data center. Because of the fact that we succeeded in building up, on one hand, the relationship with the customer, and on the other hand having a good design authority and a good governance model in place, we actually took from this disaster, because it was declared as a disaster, we took advantage of this disaster to make a new business opportunity. And it has resulted in quite some win-back in terms of solutions, hardware, and software components. So that is basically what this war story is all about. It's trying to convert a troubled situation into a great opportunity to make the customer happy and to have new business resulting out of that -- making use of architectural work products, common sense, and building up a design authority.

## Module Outline



### Introduction and Objectives

### Architect Core Capabilities

- Architectural Approach
- Architecture
- Governance and Project Management
- Leadership and Influence

### ► Additional Capabilities and Skills

### Summary

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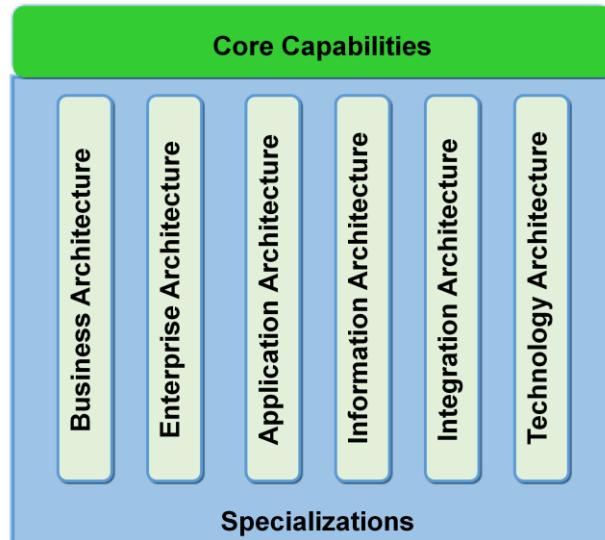


Next, we will learn about what additional capabilities and skills are required to be an effective Architect.

## Architect Capabilities Profile



The Architect capabilities profile can be compared to the shape of the letter *T*.



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The capabilities profile of an Architect might be compared to the shape of the letter “T.” Conceptually, it is composed of two building blocks: The horizontal block represents the core capabilities that all Architects must have, and the vertical block consists of more narrowly focused capabilities in one of the Architect specializations. To become certified, Architects must master all core capabilities and at least one set of the specialization capabilities. The Architect specializations are discussed later in the course.

## Additional Skills (1 of 5)



Architects must acquire additional skills.

At IBM, Architects perform many roles that involve a complex set of behaviors, attitudes, knowledge, and methods of thinking – all of which must be acquired through training and experience. Many of these skills and capabilities are defined in the Architect core capabilities. However, they are often not enough. As an Architect, you must acquire additional skills that a solution or project requires.

## Additional Skills (2 of 5)



Architects must acquire additional skills.

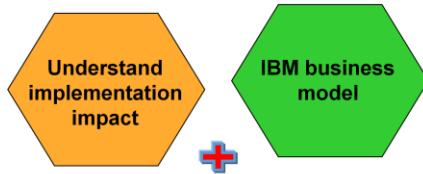


For example, Architects must understand the impact of their architecture on the implementation of the solution. They should have experience in different phases of a solution's life cycle to be able to appreciate how their architecture may affect the other phases of development.

## Additional Skills (3 of 5)



Architects must acquire additional skills.

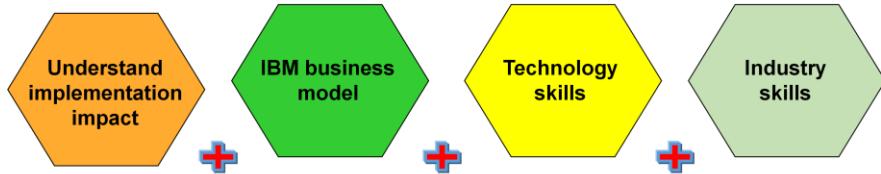


The Architect must understand how the IBM business model works to maintain and develop IBM business relationships with clients.

## Additional Skills (4 of 5)



Architects must acquire additional skills.



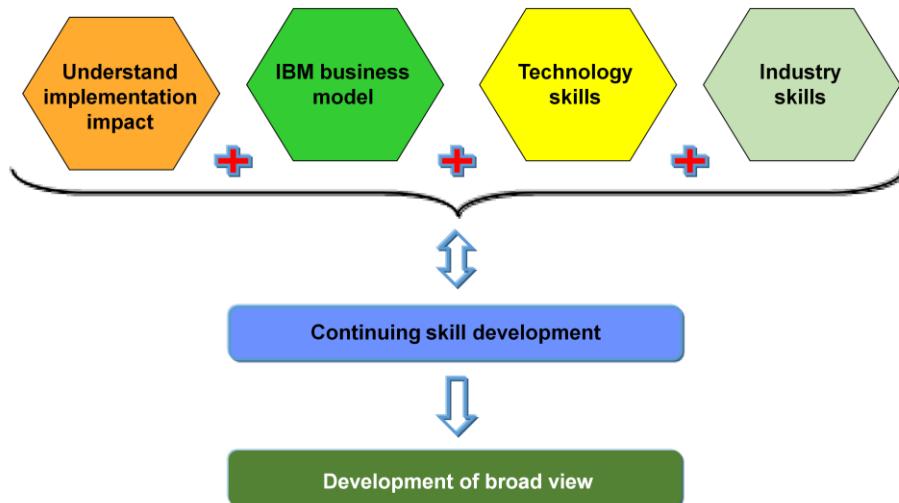
The Architect must acquire the industry and technology skills necessary for creating efficient architectures.

The Architect must stay informed of technical and business developments. Being a quick learner is a distinct asset, as is the ability to meet client needs while learning.

## Additional Skills (5 of 5)



Architects must acquire additional skills.



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Architects must continue to learn new skills to keep current in the latest and emerging technologies and industry trends. Architects should have a broad view, rather than seeing things from the perspective of a single specialization or solution. All of these additional skills help the Architects to develop the broader view that they need.



Technology skills are linked to specialization capabilities. They enable the Architect to solve problems.

Technology skills serve as a direct link to specialization capabilities. They enable Architects to solve technical or business problems by integrating the products, tools, and technologies appropriate to each domain of the solution they are building.



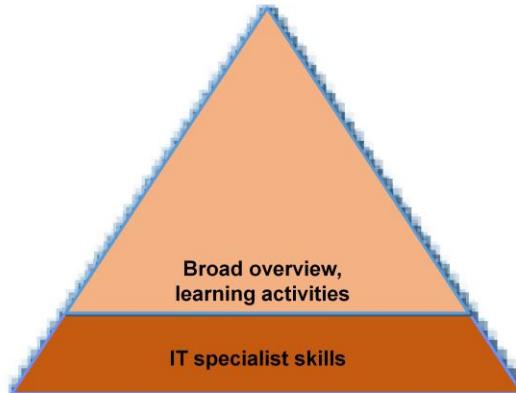
Technology skills are linked to specialization capabilities. They enable the Architect to solve problems.



To grow your technology skill, begin by developing Information Technology (IT) Specialist skills. Become a recognized expert. This builds your credibility and creates a sound base for skills expansion.



Technology skills are linked to specialization capabilities. They enable the Architect to solve problems.

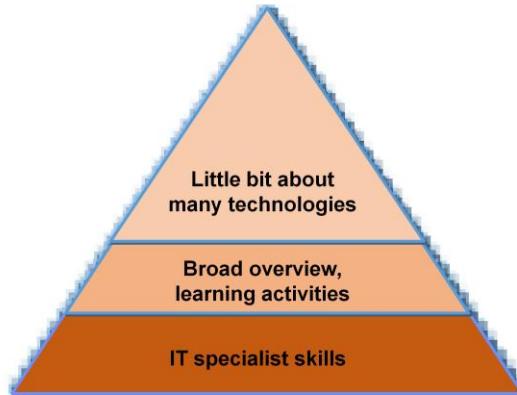


After you have achieved success in one area, begin to branch out beyond this success. Attempt to learn new things.

Take broad, overview-type courses rather than focusing on the details.



Technology skills are linked to specialization capabilities. They enable the Architect to solve problems.



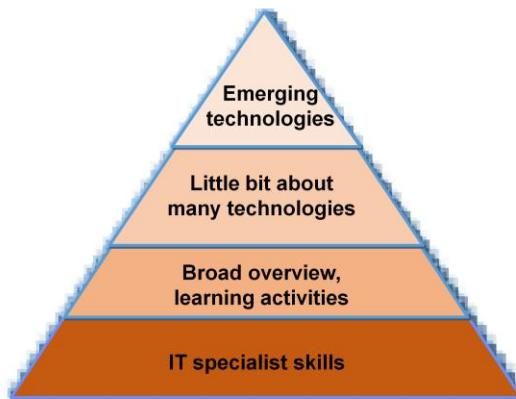
This will enable you to know a little bit about many different technologies and will allow you to speak with knowledge to both the client and the implementation team.

This knowledge is important because Architects must select and deploy the best technologies and tools to solve the client's business problem. And, in order to do this, the Architects must have some knowledge of the available alternatives, as well as how to exploit them.



Technology skills are linked to specialization capabilities. They enable the Architect to solve problems.

How to develop technology skills



Finally, Architects need to keep current on new and emerging technologies. One place to learn about IBM's emerging technologies is IBM's alphaWorks® website. A vast amount of information can be found online. Take advantage of online sources to be informed about up-and-coming tools and technologies. Technical journals are also useful.



Industry skills relate to awareness and understanding of the client's industry segment.

Now, let's look at industry skills. Industry skills relate to the Architect's awareness and understanding of the industry segment in which clients compete. This understanding is used to create solutions that make the client enterprise more competitive and productive.

Architects can employ several methods to gain these skills and keep their skills current.



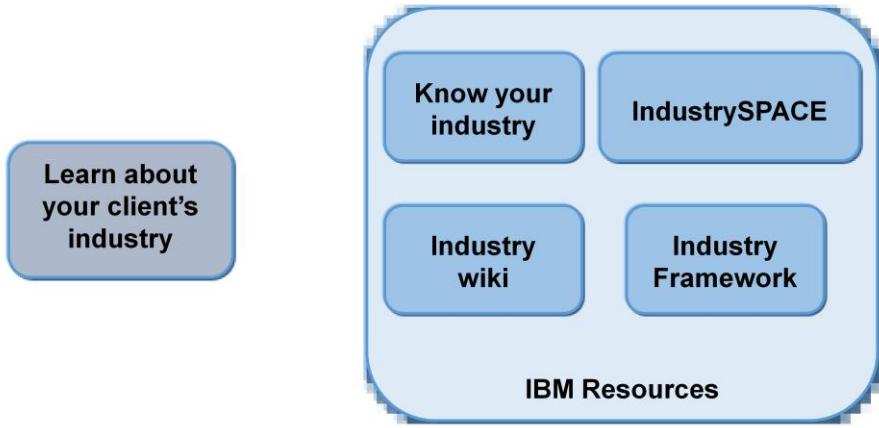
Industry skills relate to awareness and understanding of the client's industry segment.

**Learn about  
your client's  
industry**

If you are a client-facing Architect, you should take the opportunity to learn more about your current client's industry. Learn the industry trends, hot topics, and the jargon. Immersing yourself in the client's industry is the best way to learn.



Industry skills relate to awareness and understanding of the client's industry segment.



There are many resources within IBM to help you learn about the various industries. You can find learning activities from the Know Your Industry website and industry-specific information from the Industry wiki and IndustrySPACE communities. You can also learn about IBM's Industry Framework on the Global Industry Framework Sales Community wiki. Links to all of these resources are provided in the last module of this course.



**Time for a question**



What is the shape of the Architect's capability profile?

- A. A triangle
- B. A rectangle
- C. The letter "O"
- D. The letter "T"

Please pause the presentation at this point, read the question, and think about the four choices. Which one do you think is correct? When you have your answer, resume the presentation.

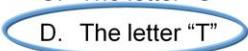


**Time for a question**



What is the shape of the Architect's capability profile?

- A. A triangle
- B. A rectangle
- C. The letter "O"
- D. The letter "T"



The correct answer is D. The Architect's capability profile is in the shape of the letter T. A successful Architect must master all the core capabilities as well as one set of specialization capabilities.



### How to build technical and soft skills

- Understand IBM skill strategy
  - Architect profession
  - Sales Eminence



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Next, Alfredo Careaga Cervera provides some tips for building technical and soft skills. He is a Client Technical Advisor from S&D in Mexico. Here's what he has to say. As a first step, you should understand the IBM skills framework. The Architect Resource Center wiki and website provide portals to explore skills and capability development. You will learn more about this in the Architect Toolbox module of this course. If you are an Architect in a sales organization, you should review the IBM Sales Eminence program. The main focus of Sales Eminence is on a professional sales force with skills valued in the marketplace by our clients. Involved in this strategy is the T-shaped model, which helps you develop broad and deep capabilities.



### How to build technical and soft skills

- Assess, identify, and plan skills and capabilities
  - Learn about Career Framework
  - Development advice for the Defining Architectures capability
  - WW Architect Education Guidelines
  - IBM Competencies



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Mexico



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Before you start, you should be aware of the different options for obtaining different types of skills. There are learning activities on using the Career Framework; also, there is development advice for the Defining Architectures capability. The most important resource is the Worldwide Architect Education Guidelines, where you will find the required and recommended courses for the Associate Certification and Certification levels. If you want to build your IBM competence skills, the IBM Competencies website provides assessments, simulation, best practices, and so on.



### How to build technical and soft skills

- Navigate through the learning catalog
  - IBM CareerSmart
  - Learning@IBM



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To look for learning, you can use the Find learning option in IBM *CareerSmart*, and while you are in Learning@IBM, you can look for scheduled offerings, as well. You can also search for the specific courses listed in the Worldwide Architect Education Guidelines document.



### How to build technical and soft skills

- Use a roadmap
  - Architect Express



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To help you control, organize, and manage the many learning activities available to you, the Architect Express should provide great assistance. You will learn more about the Architect Express in the Architect Toolbox module.



### How to build technical and soft skills

- Mentor and communities
  - Mentor required for certification
  - Participate in communities – People are important sources of knowledge and skills



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#### Mentoring

Connect with others  
Accelerate your career



It is necessary, and a prerequisite to certify, to have a mentor. This is not only because it is a formal requirement, but also because it is really very helpful to you. You will gain time and improve your skills under your mentor's advice. One of the most important sources for gaining knowledge and building skills is people. Participate in the different communities. IBM Lotus Connections will provide this opportunity. Communities, blogs, bookmarks, wikis, and so on... All of these are related with people, with groups sharing knowledge and information, and where you can also participate to submit questions or present your own point of view.



### How to build technical and soft skills

- Methods and tools
  - Team Solution Design
  - Unified Method Framework



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Careaga strongly recommends you adopt, practice, and promote methods and tools. It is important for a practicing Architect in IBM to know Team Solution Design and Unified Method Framework.



### How to build technical and soft skills

1. Understand IBM skill strategy
2. Assess, identify, and plan skills and capabilities
3. Navigate through learning catalog (Learning@IBM, IBM CareerSmart)
4. Use a roadmap (Architect Express)
5. Mentor and communities
6. Methods and tools
7. **GO, GO, GO**



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And finally, building skills is just that - **GO**... go with a roadmap, in a framework with a goal, just **go**. Every day, follow a “next step” in your career. As IBM, we have an incredible number of sources where you can go. Alfredo Careaga hopes this article will help you to structure your own way and time to achieve your skill program.

In the last module of this course, the Summary, you can download his full article with links to many of the websites and resources he mentions.

## Module Outline



### Introduction and Objectives

### Architect Core Capabilities

- Architectural Approach
- Architecture
- Governance and Project Management
- Leadership and Influence

### Additional Capabilities and Skills

#### ► Summary

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Now let's summarize briefly.

## Summary



- Capabilities require a combination of applied knowledge, skills, abilities, and competencies.
- There are 18 Architect core capabilities grouped into four categories.
- Architects employ all core capabilities to produce architectures successfully and be effective in the Architect role.
- In addition to core capabilities, Architects need industry skills, technology skills, and more.

In summary, we have defined capabilities as a combination of applied knowledge, skills or expertise, abilities, and competencies. We went through the 18 Architect core capabilities individually to show why they are important. We also showed that Architects need other skills such as specialization, industry, and technology skills to complement the core capabilities.

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This concludes Module 5, Architect Skills and Capabilities.