

# **Application Framework Fundamentals**

*Student Exercises Workbook*

## Notice

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## Student Exercises

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This part of the workbook presents exercises to be completed by you during the course of the training.

If you are taking this course in person your instructor will answer any questions you have about the requirements stated in the exercises. You may also want to use framework documents on the instructor's laptop.

If you are taking this course online then you will be provided with some guidance for each exercise by the instructor. You can also use any framework documents that are available to you.

The first two exercises should take 45-60 minutes each:

- Overview by instructor – 5 minutes
- Completion by students – 30-45 minutes
- Suggested solution by instructor – 10 minutes

## Exercise 1 - Scoping a Project

The challenges faced by a futuristic converged (telecom, content, media, and other digital services) service provider, F-Con, are your challenges for this exercise. F-Con plans to further develop IP access networks that will provide fiber to a customer premise and to expand its current IP access networks.

F-Con will be making available customer premise equipment (CPE) associated with the new fiber to the premise offerings. The CPE will be bundled with these offerings. Product Managers and Network Engineers are part of a project team implementing the strategy set forth by F-Con executives to identify the types of CPE needed to support these offerings. The team also wants to ensure that F-Con's infrastructure will be in place and can support the new offerings and the CPE.

Examples of the types of CPE are shown in the Figures 1, 2, and 3. They include set top boxes, wireless routers, and connection faceplates.

### Tornado M10 Digital Media Center

#### Product Overview

Tornado M10 Digital Media Center is an advanced customer premises equipment (CPE) device for delivering streaming audio, video, and data directly to consumers' TV sets and/or Home Entertainment systems. Tornado M10 supports advanced MPEG4 video and MP3 audio compression algorithms and can deliver content streams with optimal quality over networks with limited bandwidth. Besides audio and video, Tornado M10 also offers advanced Voice-over-IP capabilities, which enable consumers to make inexpensive phone calls over the Internet. Additional services supported by Tornado M10 include video conferencing, chat, email, news, local weather information, program scheduling, video recording, voicemail and many more.



**Tornado M10 DMC**

#### SOLUTIONS

- [IPTV Solution](#)
- [Secure IPTV/VOD](#)

#### NEXT STEPS

- [Download brochure](#)
- [Request information](#)
- [Chat with a sales rep](#)
- [Call us: 1-877-900-3993](#)

#### Key Features

- IPTV and Video-on-Demand Support
- Digital Music and Internet Radio Delivery
- VoIP SIP Phone with Peer Auto Discovery
- Video Conference H.263 Support
- Media Extension Center Functionality
- Enhanced Voicemail System with Unified Messaging
- Online Chat and Email Clients
- News and Weather Reports Delivery
- Optional PVR and Program Scheduling

Figure 1 - Set Top Box

## Fiber Wireless Router, Optical Wiress Router

www.ExFiber.com

The OWR300 fiber wireless router is a highly integrated optical wireless 11N router designed to deliver IP services at optical speeds for point-to-point FTTH application. It interoperates with major home enduser to meet the worldwide residential market requirements. Alternatively the built-in 802.11b/g/n WLAN brings relief to those troublesome wirings. By offering the flexibility to service provider, the OWR300 delivers the convenience of one model that fits different kind of Internet applications.



### Features:

- Complies with the IEEE 802.11b/g and IEEE802.11n
- 1 10/100M Auto-Negotiation RJ45 WAN port, 4 10/100M Auto-Negotiation RJ45 LAN ports, supporting Auto MDI/MDIX.
- High data rate up to 300Mbps network speed.
- WEP 64/128bit and WPA/WPA2
- Support local/Remote Web-based configuration
- Supports web-based configuration

### Specifications:

Item	Description
Standard	IEEE802.11n current draft IEEE 802.11g IEEE 802.11b IEEE802.3 IEEE 802.3u IEEE 802.3x
Protocol	CSMA/CA, CSMA/CD, TCP/IP, ICMP, NAT, PPPoE, DHCP, PPTP, UDP, NAT, DNS, DDNS, VPN
LAN	4x100BaseTX (Auto MDI/MDIX)
WAN	1x100Base-Fx optical (Auto MDI/MDIX)
Cable	Multi-mode Fiber: 50/125, 62.5/125um max distance up to 2km or 5km Single-mode Fiber: 8/125, 9/125, 10/125um max distance up to 20-120km
Wireless parameter RF Frequency	2.4-2.4835GHz

Figure 2 - Wireless Broadband IP Router



[Larger photo](#)

### Fiber-optic Faceplate with One Port, Supports MM or SM Fiber Connection

Model Number: SK-FW001

[INQUIRE NOW](#)

[Add To Basket](#)

[View Contact Details](#)

Chat with supplier using:

### Country of Origin:

- China (mainland)

### Brand Name:

- SUNYKING

### Key Specifications/Special Features:

- Supports MM or SM fiber connection
- With one port
- Consist of FC, LC, SC, and ST adapters

### Payment Details:

Figure 3 - Customer Premise Face Plate

### Your challenge

What first level applications are being used by the Product Managers and Network Engineers? These applications represent the scope (boundaries) of this project from a application perspective. You may find that some applications that should be part of the scope may require other members of the project team to be involved in addition to the two types of members mentioned.

Note: Defining the scope of a project is an iterative process. This is the first iteration and the scope is not expected to be the final scope. Part of this challenge is to document your reasons for including the Application Framework applications, the assumptions that have been made for including or excluding Application Framework applications, and follow-up questions associated with the applications included or not included in the scope of the project.

The table on the next page should be used to record the applications that make up the scope of the project. There is also a column for you to record your reason(s) for including them along with any questions you may have about whether an application should be included or note. You should also include assumptions you have made that caused you to include an application.

The Application Framework graphic in your student materials can help you with this exercise. And you can use the clickable Frameworx model that you saw earlier in the course. If you use the clickable model looking at applications below the first level may provide you with additional assistance in completing this exercise.

Application	Reason for Inclusion/Questions/Assumptions





## **Exercise 2 – Extending/Confirming the Framework**

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F-Con currently has its own application architecture but have decided that it would be better to adopt the Application Framework since it is used by so many other enterprises with which it does business. And F-Con's executives think that a good time for the adoption would be as F-Con begins the project described in the first exercise.

You are part of the adoption project team responsible for providing guidance for Application Framework extensions that are planned and some changes that may be made to the framework that are specific to F-Con.

You will be asked for advice about each planned extension or change.

### **Planned Extensions**

Project team members have studied the Application Framework and found that some applications that are planned to be procured and/or developed seem to be missing from the framework.

1. One of them is referred to as Product Marketing Communications & Promotions. They have developed an overview of the application below.

“Product Marketing Communications and Promotions develop and manage communications to the market, prospective and existing customers. Marketing Communications involves both the message and the media. Product Promotions on the other hand is the development of specific promotions to sell products, retain customers, and bring in new customers. Product Promotions create the promotional campaigns and advertising to reach the market, customers and channels.”

**What is your advice about this application and in which domain would this new application be placed?**

2. Another is Brand Management whose overview follows.

Brand Management creates a name, symbol or design that identifies and differentiates an enterprise's product offering and/or offerings from its others product offering(s) and similar offerings available from other enterprises, including competitors.”

**The Product Managers and Marketing Managers are arguing over the domain into which this application should be placed. They are looking to you to resolve the argument. Which domain should contain this application?**

3. The final one is Service Strategy Planning & Development, which cannot be found in the framework. Its overview follows.

“Service Strategy Planning & Development develops a strategic view and a multi-year business plan for the enterprise's services and service directions, and the parties who will supply the required services. Research & analysis is performed to determine service targets as well as strategies to reach the defined targets.”

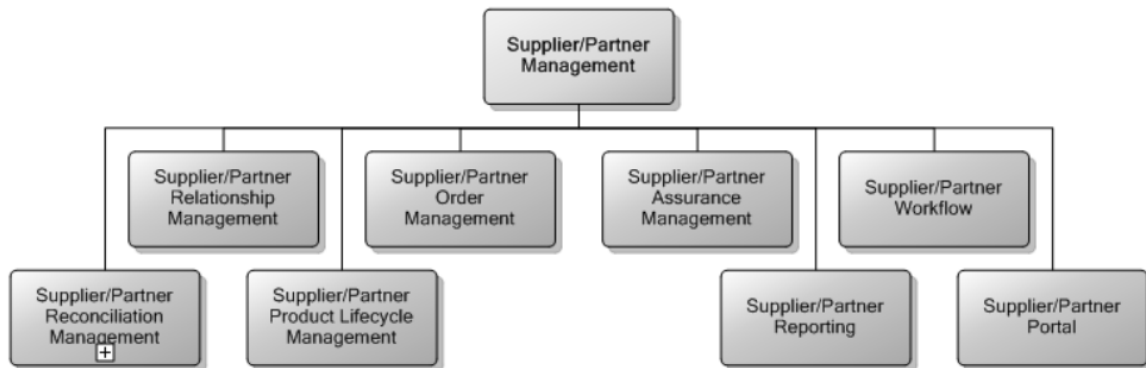
This is the responsibility of the same group of F-Con employees.

**What is your advice about this application and in which domain would this new application be placed?**

## Planned Changes

In their study of the Application Framework project team members have also determined that they would like to make some changes to the framework.

1. Project members wondered why the Supplier/Partner domain only includes two first level applications. They looked at the Supplier/Partner Management applications decomposition and found the following:

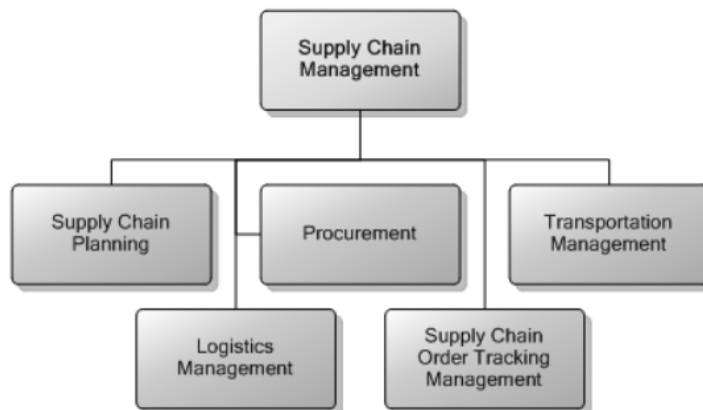


**Figure 4 – Supplier/Partner Management Decomposition**

Supplier/Partner Management is performed by a variety of F-Con employee roles. Because of this the project team would like to remove this application and “promote” its next level applications shown in the figure to first level applications.

## What advice would you give about this change?

2. Project members have another change they would like to make that is also related to the Supplier/Partner domain. While studying the Enterprise domain’s Supply Chain Management they found the following:



**Figure 5 – Supply Chain Management**

The project team would like to move this application to the Supplier/Partner domain. They also believe that there is some overlap with Supply Chain Management's second level applications, such as Procurement and Supplier/Partner Order Management shown in Figure 4 – Supplier/Partner Management Decomposition. They would like to remove the overlap and possibly remove the Procurement application.

**What advice you give about these two planned changes?**

3. This is a change and an addition to the Application Framework that the project team would like to make.

F-Con currently has a Sales Forecasting application that is used for all sales channels. When studying the lower level Channel Sales Management applications, they found that sales forecasting is only mentioned in the Direct Sales Force application. An excerpt from its description follows.

“Sales Analyst. As a Sales Analyst, you manage sales territories and quotas and generate sales forecasts and pipeline analyses.”

The project team would like to remove the reference to sales forecasts from this applications description and to add a first level Sales Forecasting application to the Market/Sales domain.

**What advice you give about this change and this addition?**

## **Student Exercise Suggested Solutions**

The solutions provided in this section of the student exercise workbook are suggested solutions. As was noted in some of the exercises, developing a solution to a challenge is an iterative process; the solutions presented here represent the result of the first iteration and may vary from the solutions developed by you.

### **Exercise 1 - Scoping a Project**

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The figure, Figure 6 - Applications Representing Scope provide the first iteration solution to this challenge. Included first level applications are outlined with dashed borders. The justification for this solution is provided following the figure. As further iterations are undertaken, analysis of the decomposition for each included application will help refine and further develop the scope to include lower level applications.

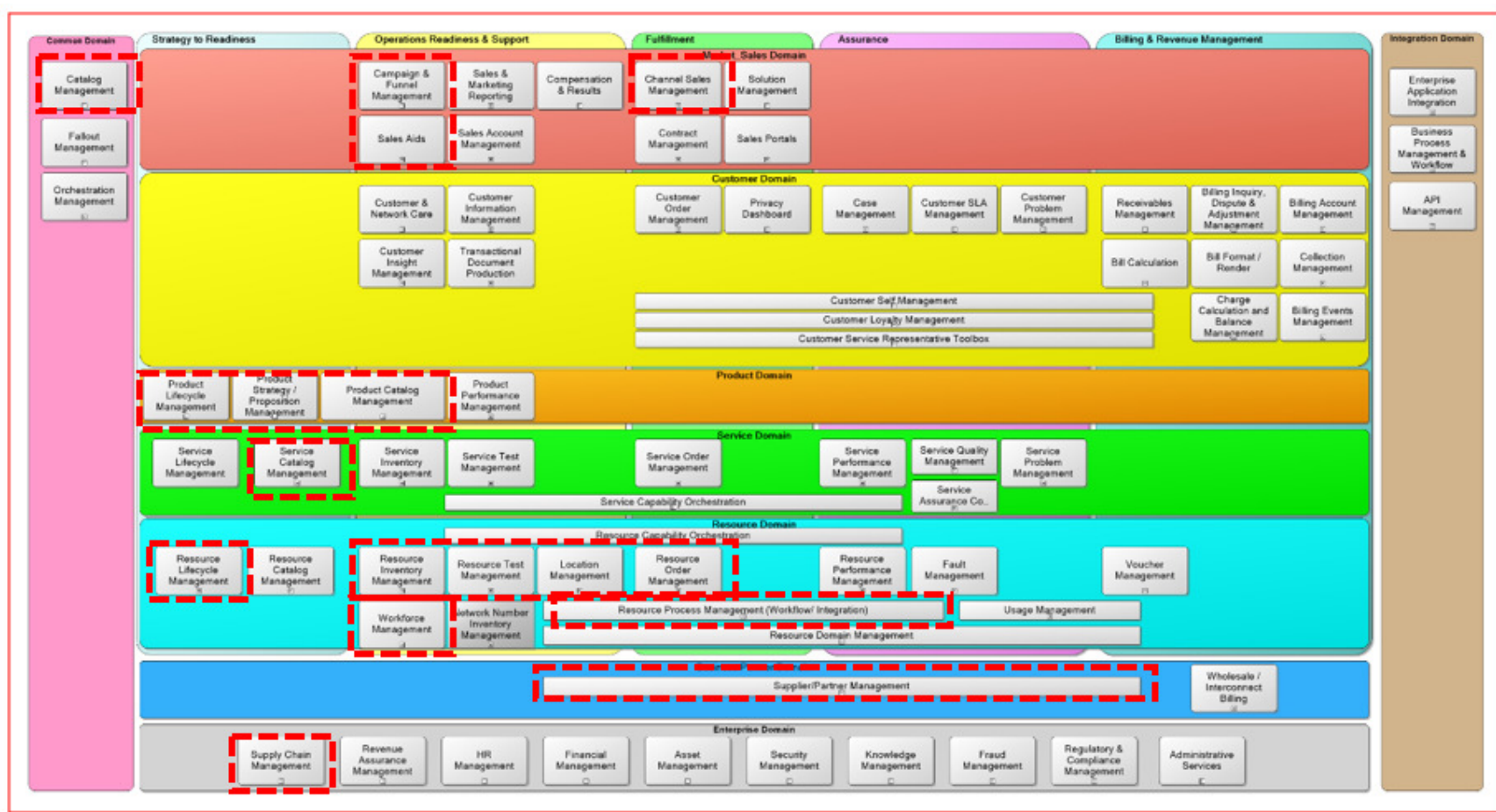


Figure 6 - Applications Representing Scope

The suggested solution will proceed from domain to domain starting with the Market/Sales domain.

The inclusion Market/Sales domain applications can be viewed as extra credit for you if you included some of them. Launching new offerings typically involves development of marketing campaigns used to promote the new offerings. Sales channels that will be used to offer these to the market may be added or updated. And, new sales aids may be needed. This implies that Marketing Managers and Sales Managers may be or should be part of the project team.

Based on this the project scope includes:

1. Campaign & Funnel Management to develop marketing campaigns. You may wonder what Funnel Management, a second level application, is and looked at its documentation. Its focus is on leads generated by a marketing campaign. This application could be outside the scope of the project since the campaigns are primarily being developed and have not been launched yet.
2. Sales Channel Management manages sales channels.
3. And, Sales Aids manages aids used in selling the new offerings.

You may want to add a question to your scoping table that confirms that there is not another project team working on the marketing/sales part of F-Con's endeavor. If this is the case then this domain would not be included in your project's scope.

Some Product domain applications were included based on the part of the description for this exercise that stated "F-Con will be making available customer premise equipment (CPE) associated with the new fiber to the premise offerings. The CPE will be bundled with these offerings." And on part of the description, that stated "Product Managers and Network Engineers are part of a project team implementing the strategy set forth by F-Con executives to identify the types of CPE needed to support these offerings."

Based on this the project scope includes:

1. Product Lifecycle Management includes those activities and tools used to define new products and updates to existing products. The term products here and below refer to product offerings.
2. Product Strategy/Proposition Management is the ability to capture and manage the detail of a company's strategy and resulting propositions, that then drive what products they will develop, deliver and sell. While those involved in this F-Con project do not set the strategy they would use this application to access and view the strategy set forth by F-Con executives.
3. And, Product Catalog Management are repositories of product listing and include the ability to design, create, augment and map new entities and supporting data.

No Customer domain applications were included, because the project's focus is on developing new product offerings and the infrastructure to support them. There is no mention of acquiring new customers or selling to them.

One Service domain application was included in the project's scope. This domain is concerned with the definition, development, and operational aspects of services used to realize offerings to the market. Service Catalog Management are repositories of service listings and include the ability to design, create, augment and map new entities and supporting data.



Some Resource domain applications were included based on part of the description for this exercise that stated, “The team also wants to ensure that F-Con’s infrastructure will be in place and can support the new offerings and the CPE,” And, the introduction to the student exercises description that “F-Con plans to develop an IP access network that will provide fiber to a customer premise.” Lastly, the description for this exercise that stated “F-Con will be making available customer premise equipment (CPE) associated with the new fiber to the premise offerings. The CPE will be bundled with these offerings.”

Based on this the project scope includes:

1. Resource Lifecycle Management, which is quite expansive if you looked at its description in the clickable model. For those that did not here is a list of the functionality provided by it that supports most of the parts of the exercise descriptions mentioned above.
  - Strategic Planning
  - Capability Specification
  - Tactical Planning
  - Resource Catalog
  - Implementation Planning
  - Planning Design Automation
  - Spares & Warehouse Inventory
  - Resource Commissioning & Configuration
2. Resource Inventory Management manage information of all resources used to implement services and products.
3. Resource Test Management is focused on ensuring that the various resources are working properly, which must be done when deploying new resource infrastructure.
4. Location Management provides the required functionality to manage the physical and logical attributes of location data. It can include addresses (street, city, state/province, & country), geospatial information, such as latitude and longitude, as well as common code information.
5. Resource Order Management manages the end to end lifecycle of a resource order request. This includes validating resource availability as well as the resource order request. Other functionality includes resource order issuance, resource and or service order decomposition, and resource order tracking along with orchestrating the activation and the test and turn up processes.
6. Workforce Management manages field forces to make optimum use of manpower and other resources such as vehicles. They are used to schedule resources, provide a map of field skill sets and provide forecasting and load balancing capabilities.
7. Resource Process Management (Workflow Integration) includes Resource Change Management, Resource Logistics, and Jeopardy Management. They are necessary for the development of new resource infrastructure, logistics associated with new resource inventory, such as stocking CPE, and managing the jeopardy of any resources related activities involved in the project.

One rather large Supplier/Partner domain application is included in project's scope. Supplier/Partner Management. Dealing with suppliers/partners was not mentioned in the exercise description. However, you may have made and documented an assumption that F-Con does not manufacture the equipment examples provided or the resources needed for the IP access network. If your assumption is verified and there is not another project team working on procurement, then this domain should remain within your project's scope. And Procurement Managers would be added to the project team.

You may have also looked at this domain's level two applications and found that only some of them are needed for your project. For example, Supplier/Partner Relationship Management and Supplier/Partner Order Management would be needed to manage the relationships with existing and/or new supplier/partners and to order the necessary CPE and IP access network resources. Extra credit for this, too!

The Enterprise domain includes another application related to suppliers/partners that may be part of your project's scope. The Supply Chain Management application complements the Supplier/Partner domain's applications by providing the necessary functionality to support the planning of needed materials and services, procurement of these materials and services, stocking and shipping preparation, and transportation to their final destination.

There is one more application that is within scope. The Cross Domain's Catalog Management application is a cross domain, multilayer application that operates as a master repository for componentized entities of products, services and / or resources within one or more domains of an enterprise's environment. It provides common application functionality used by Product, Service, and Resource Catalog applications.

You may wonder why there are only a small number of Fulfillment and Assurance category applications, and no Billing & Revenue Management applications within your project's scope. You may even have included some of them. However, there is no mention of fulfilling customer orders, assuring their products, or billing them in the project's description. The reason for this is that there is another project team who is working with and using these customer related applications for this F-Con endeavor.

## Exercise 2 - Extending/Confirming the Framework

Suggested advice you may have given the F-Con project team is provided below. Each piece of advice references the addition/change number from the exercise.

### Planned Extensions

#### 1. Product Marketing Communications & Promotions

The description of this application should have assisted you with preparing your advice, specifically this part: “Marketing Communications involves both the message and the media. Product Promotions on the other hand is the development of specific promotions to sell products.”

##### Advice

The guideline about looking for symbols or words in the name of an application imply that it represents multiple applications. This appears to be the case here, and the description of the application further confirms this. The two applications are Marketing Communications, whose name implies it is a Market/Sales domain application, and Product Promotions, whose name implies it is a Product domain application. They should be added as first level applications to the respective domains.

#### 2. Brand Management

The description of the application should have assisted you with preparing your advice, particularly the multiple references to product offering. References are highlighted in the description below.

“Brand Management creates a name, symbol or design that identifies and differentiates an enterprise’s **product offering** and/or **offerings** from its others **product offering(s)** and similar **offerings** available from other enterprises, including competitors.”

##### Advice

Since this application focuses on product offerings it should be placed in the Product domain. That is not to say that a Marketing Manager and a Product Manager may be jointly responsible for managing F-Con’s brands and using this application to do so.

It can be added as a first level application in the domain.

#### 3. Service Strategy Planning & Development

This is like the Product Marketing Communications & Promotions application, because of the use of the “&” symbol, with one exception. It was noted that “This is the responsibility of the same group of F-Con employees.”

##### Advice

This application represents two applications: Service Strategy Planning and Service Strategy Development. One application grouping guideline stated that “Grouping/Partitioning based by taking into consideration the end user of applications. An end user would typically wish to see applications required for their day to day job to be grouped together.”

Based on the guideline Service Strategy Planning & Development could remain as a first level application and the two other applications would represent its decomposition.

## Planned Changes

### 1. Supplier/Partner domain

It was noted that “Supplier/Partner Management is performed by a variety of F-Con employee roles.”

#### Advice

Since different roles use the second level applications in carrying out their jobs it is acceptable to promote these applications to make them first level applications. There is further justification for the promotion. There are first level applications in other domains that are like the current second level Supplier/Partner domain applications, such as Customer Order Management and Resource Process Management (Workflow Integration).

### 2. Supply Chain Management

It appears that this application and its lower level applications focus on dealing with, or the results of dealing with, suppliers and partners.

#### Advice

It would be acceptable to move this application and its lower level applications to the Supplier/Partner domain. And since it also appears that there are some overlaps it is acceptable to remove them. This is in line with one of the Application Frameworks goal which states “Guide efficient system architecture development and deployment.” The result of achieving this goal is reducing the amount of duplicate functions and to make applications more streamlined.

### 3. Sales Forecasting

The key point in providing advice for this application was the reference about sales forecasting in the current Direct Sales Force application’s description. It stated “As a Sales Analyst, you manage sales territories and quotas and generate **sales forecasts** and pipeline analyses.”

#### Advice

It is acceptable to add this as a level one application. And to remove reference to sales forecasts in the Direct Sales Force application’s description, since forecasts are created for all F-Con’s sales channels.

## An Additional Extension/Change Note

Before making any changes to the Application Framework you should make certain that functionality to be added is not already present in the framework.

If any duplication is found you have a few choices:

- Do not add the duplicate functionality
- Use the existing functionality as a starting point if you plan to expand upon it
- Or, remove it from the existing framework once you have made the extension or change to another place in the framework.

The last choice is the one that was made for Sales Forecasting.