

## LSA Application Build Scenario: Front Stage Event Booking

### Scenario overview

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Front Stage is a large entertainment organization that hosts shows, musical performances, and high-profile corporate events. Front Stage assists its customers with booking events that are between 5,000 and 18,000 guests. Front Stage plans to offer full event planning services that allow event organizers to not only reserve the venue, but also to provide services such as:

- Reserving hotel(s)
- Arranging for parking
- Preparing for outdoor events

After seeing Pega's case management and mobile capabilities, Front Stage is excited to use the Pega platform to build an application to support this new venture. Front Stage is also intrigued by the idea of giving the business more control over the design and features of the software applications that they use every day.

### Actors

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- **Sales executive** – Negotiates the contract with the customer and creates the proposal.
- **Executive officer** – Approves proposals. There are three executive officers, and one of them is the CEO.
- **Event manager** – Manages the overall event. There is a team of five event managers, and one of them acts as the team lead.
- **Facility coordinator** – Coordinates preparations for the event. There are a total of 15 facility coordinators, and each one is specialized in one or more areas, such as weather preparation and parking.
- **Customer** – Person who actually avails the FSG services like booking an event.

### Technology Overview

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The Front Stage sales organization is highly mobile. The sales executives work almost exclusively with handheld and tablet devices. Facility coordinators and executive officers work in the office, but sometimes they work remotely. Event managers are on the road half of the time, and in the office the other half.

To compete with other event booking companies, Front Stage recognizes that it needs to deploy new software in a matter of hours, not days or weeks. The Front Stage IT organization knows this model is possible but understands that big changes to the way it operates are needed to support this way of working. The IT organization also sees the cost savings in moving to a cloud-based solution instead of procuring and maintaining hardware to support the event sales and booking processes.

Front Stage operations use a combination of desktop applications and older technology to book events. The operations staff uses a mainframe terminal emulator to book hotels. The event manager

can book a hotel in less than a minute. Front Stage has emphasized that the new solution cannot take any longer than the time it takes the event manager to book a hotel using the mainframe emulator. All the hotels that Front Stage works with provide a web services to book a block of rooms. Also, the application cannot take any longer than one second to move between booking screens. Otherwise, the business SLA cannot be met.

Front Stage also sees the opportunity to leverage background processes to offload some of the manual processing Event Managers must do today. For example, Event Managers must check the weather to determine if the facilities coordinator should set up tents and provide rain gear to attendees. Event managers frequently receive questions from attendees about details about the event such as:

- When can I check into the hotel?
- What is the street address of the parking facility?
- What if it rains, do I need to bring my own umbrella?

The event manager is eager to see if the new application can provide answers to these types of questions automatically. However, any new background processing must not affect the overall performance of the booking application.

Front Stage also understands that the Center-out™ business architecture is a fine-tuned software architecture to deliver customer and business outcomes. It gives meaningful results fast and sustains the architecture into the future by avoiding the Top-down and Bottom-up approaches' mistakes.

To compete with other event booking companies, FSG recognizes the need to provide its customers event quotation self-service capability.

## Process overview

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Through this new application, Front Stage can provide a base package and some additional optional services. Event organizers can book these optional services on top of the base package. They cannot be booked separately.

The event booking application includes the following processes:

- **Event quote** – This process includes the event proposal capture and the calculations of the event quote.
- **Weather preparation** – The process includes the actions taken prior to the event based on the weather forecast (service included in the base package).
- **Hotel rooms booking** – This process includes arranging with nearby hotels to set aside blocks of rooms for event attendees (optional service).
- **Parking request** – This process includes the parking and shuttle service request for the event attendees (optional service).

The three latter processes must be able to execute independently and each event quote must be associated with the services involved in the event.

## Detailed Requirements

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### Proposal

A sales executive should be able to initiate a proposal, whether conversing with the customer over the phone or in person, or by formulating the proposal prior to contacting the customer. In turn, Front Stage customers should be able to initiate a proposal themselves which sales executives can observe within their Sales portal. A Sales Executive would review the proposal, possibly modify it such as offering a discount or reject it. Regardless how the proposal originated, the customer should be able to review a proposal online, confirming or rejecting it.

Event	
Category *	Concert
No Of Attendees *	8500
Start Date *	12/10/12
End Date *	12/12/12

Contact	
Name *	John Smith
Company *	Madonna
Phone *	617 123 1234
Email *	j.s@email.com

Services
<input checked="" type="checkbox"/> Hotel Reservation
<input checked="" type="checkbox"/> Parking & Shuttle Service

Quote	
Discount (%) *	15
Base price (USD)	77,350
Additional per Parked Car (USD)	1.7

<b>Event</b>			
Category *	Concert	Start Date *	12/10/12
No Of Attendees *	8500	End Date *	12/12/12
<b>Contact</b>			
Name *	John Smith	Phone *	617 123 1234
Company *	Mãdonna	Email *	j.s@email.com
<b>Services</b>			
<input checked="" type="checkbox"/> Hotel Reservation			
<input checked="" type="checkbox"/> Parking			
<b>Quote</b>			
Discount (%) *	15		
Base price (USD)	77,350		
Additional per Parked Car (USD)	1.7		

The event information includes the type of event (concert, sport, corporate, and other), the number of attendees, the start and end date, the customer contact information (name, company, phone, and email) and if the optional services are booked by the customer. The sales executive can also give up to 20 percent discount to the customer. The discount is applicable the base price for Parking Service but not the price per car. The system automatically recalculates the quote if any related input value changes.

With this information, the system automatically calculates a quote amount for the event based on data like what is shown below. The system ideally would provide a way to enter and update this information, plus allow new priceable items to be added, with very little effort.

Size of event (Number of attendees)	Base price
< 6,000 attendees	\$ 50,000
6,000 < attendees <= 12,000	\$ 80,000
attendees >12,000	\$ 100,000

Size of event (Number of attendees)	Hotel reservation price
<= 6,000 attendees	\$ 4,000
6,000 < attendees <= 12,000	\$ 5,000
attendees >12,000	\$ 6,000

Size of event (Number of attendees)	Parking service price
<= 6,000 attendees	\$ 4,000 + \$ 2 per car
6,000 < attendees <= 12,000	\$ 6,000 + \$ 2 per car
attendees >12,000	\$ 8,000 + \$ 2 per car

The sales executive has the option to cancel the proposal if the customer chooses not to continue.

The quote is then submitted for approval. Executive officers are available to receive the quotes and approve them. The quotes can be routed directly to an Executive officer, or they can pull a quote from a list without the possibility for cherry picking. Executive officers pull the quotes in order defined by the event start date. The events with earlier start dates are pulled first. Quotes for events with more than 10,000 attendees must be routed directly to the chief executive officer, who is one of the executive officers who can approve events.

If a quote is rejected a note stating the rejection reason must be provided by the executive officer and the quote is routed back to the sales executive who can make changes and resubmit, quote, or alternatively cancel the quote.

If the proposal is approved by an executive officer, the event is forwarded to the Event Manager work queue. The Event Managers work group reserves the right to reject hosting an event. The most common reason for an event to be rejected is not having sufficient time or resources to plan and manage the event where it is being held.

FSG would like the Event Manager approval/rejection process to be configurable such that any Event Manager in the group can vote up or down. The number of approvals needed to approve hosting the event and the number of rejections needed to reject hosting the event should be configurable. Prior to a vote threshold being met, an Event Manager should be allowed to alter the vote they had cast earlier. Once a vote threshold is reached, the process should either move forward if approved, or terminated if rejected.

Proposals can only be created by sales executives and the financial information must not be visible to the facility coordinators at any time.

Event managers should be able to classify each event quote using tags making it easy for sales executives to find examples of other similar events.

### **Weather preparation**

Prior to the event, weather forecasts should be made for each day that the event is held. The number of days before an event starts to begin forecasting the weather should be configurable. The number of days does not need to be configurable on an individual event base. Instead, the configurable value should apply to every event. Ideally an Event Manager would be able to view weather forecasts for upcoming events within a portal designed to meet their needs.

For now, the decision whether to make weather preparations for an event should be based on a simple configurable threshold. If the probability of precipitation exceeds that threshold value, defined as percentage, for any of the event days, the process to make weather preparation arrangements should be initial. The initial, configurable precipitation probability value should be 40%. In the future FSG would like the option to choose a different rain forecast strategy such as the Probability of Failure approach where the probability of precipitation over the entire duration of the event is considered, not in terms of a threshold, but as a series of failure probabilities.

The weather preparation task should be sent to the facility coordinator with the least amount of urgent work and who is specialized in weather preparation. Below are example weather preparation tasks.

Set up tents
Provide disposable raincoats
Cover seating area

If the facility coordinator has not completed the weather preparation work within eight hours, the event manager allocated to the event should be notified.

### Hotel reservation

Front Stage has agreements with multiple hotels within a reasonable distance of each venue. The hotel list should be maintained by a system administrator. An example list of hotels is shown below. Ideally the Event Manager would only be shown hotels within a certain distance of the venue, the Event Manager being allowed to modify the distance. The Event Manager would be able to select the hotels he/she wants to contact for each event.

Hotel	Contact person	Email
Marriott	Sandra Smith	<email>
Hilton	John Jackson	<email>
Westin	Erin Edwards	<email>
Sheraton	Fred Franklin	<email>
Radisson	Niclas Newton	<email>

The default numbers of attendees who may need a hotel should be configurable, the initial value being 20 percent. The sales executive should be able to modify this calculated value after it is initially displayed.

For security reasons, FSG does not want hotels to be able to access the same application that FSG employees access. At a system-configurable number of days prior to the event, the system should notify hotel contacts by email, requesting room reservations. Each hotel should receive a request for the same number of rooms. Hotel contacts would confirm the number of rooms reserved within a separate application dedicated to this purpose.

Please confirm the number of rooms you can block for the event within 24 hours.

Start date	<input type="text" value="12/10/12"/>
End date	<input type="text" value="12/12/12"/>
Requested number of rooms	<input type="text" value="340"/>
Confirmed number of rooms *	<input type="text" value="200"/>

The hotels should be given a configurable amount of time to confirm the number of rooms they are able to set aside for the event. Hotels can confirm fewer rooms than requested, but not more. If a hotel does not respond within the time allowed, the system should assume that the hotel is not set able to set aside any rooms.

Other Reservations

Hotel	Rooms Requested	Rooms Confirmed	Status
Marriott	340	200	Pending-Review
Westin	340	0	Pending-Confirmation
Sheraton	340	340	Resolved-Completed
Radisson	340	200	Resolved-Completed

This Reservation

Hotel	<input type="text" value="Hilton"/>	Phone	<input type="text" value="617 123 1234"/>
Contact	<input type="text" value="John Jackson"/>	Email	<input type="text" value="j.s@email.com"/>
Requested number of rooms	<input type="text" value="340"/>	Confirmed number of rooms *	<input type="text" value="150"/>

If a hotel either did not respond, or did respond but was not able to confirm the number of requested rooms, the event manager should be notified. The event manager should be able to review hotel rooms requests within an event manager-specialized portal. The event manager should be able to see who the hotel contact is and how to reach out to that contact. While chatting with or speaking to the hotel contact on a phone, the event manager should be able to update the rooms request information related to that hotel for that event.

### Parking service

Front Stage can provide parking service. If this option is selected, the facility coordinator who specializes in parking and has the least amount of work is assigned the task of manage parking for the event. Several parking lots or garages may be needed depending on the size of the event. Like the process of selecting hotels, a user should be able to select parking locations within a certain distance of the event's venue.

Name	Contact	Capacity	Type
Yawkey Parking Lot	John Smith	300	Lot
Van Ness Garage	Sara Jackson	200	Garage

For each parking location, the name, contact, capacity, and whether the location is a lot or garage should be displayed.

At the end of the event, the same facility coordinator tasked with parking management for that event should be responsible for entering the number of cars parked per location. The total parked cars price, cost, and profit should be displayed.

### Additional requirements

When the event has wrapped up, the customer should be contacted to provide feedback. Feedback data entry need not be performed by the event manager. In fact, it is preferred that the customer be contacted automatically and the response from that customer be handled automatically, as well. It

should be possible to capture this feedback, plus report on it, in a way that could be applied to other applications, not just the “Booking” application currently being considered.

The feedback that is captured would be a Satisfaction Score with an integer range from 0 to 10. The score would later be used later to compute a Net Promoter Score. The customer should also be allowed to enter a comment if they choose.

Also, after an event as wrapped up, the final invoice, which includes the total price for parked cars, should be sent to the customer by email. The email template is shown in the appendix.

Portals should vary based on the actor type, i.e., persona, accessing the application. As frequent travelers, sales executives should have mobile and offline access to the event bookings they are working on.

Within the next year, Front Stage expects sales prospects to be able to start a new event booking request through social channels, such as Facebook Messenger.

The dashboard enables access to the worklists of the user’s peers. For example, sales executives can view and access work from other sales executives (but only other sales executives). The same is true for executive officers and event managers. However, it must not be possible to access work on peers’ worklists that are related to events with more than 10,000 attendees and, therefore, go directly to the CEO for approval. In addition, the dashboard contains the usual standard features.

The facility coordinators may only view their own worklist and the work specifically assigned to them.

Front Stage is planning to buy additional arenas in the future. As such, it wants to be able to reuse the current application with appropriate customization for each additional arena.

## Integration requirements

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The weather is checked using a web service. The web service returns the likelihood of precipitation for a date range. The web service has not yet been implemented and needs to be simulated during development.

## Reporting requirements

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Executive officers have two reports. The first one lists the events with revenue, cost, and profit. The second report shows profit by event type. The internal costs are shown in the following tables.

Size of event (Number of attendees)	Internal cost
<= 6,000 attendees	\$ 30,000
6,000 < attendees <= 12,000	\$ 40,000
attendees >12,000	\$ 50,000

Size of event (Number of attendees)	Hotel reservation internal cost
<= 6,000 attendees	\$ 2,000
6,000 < attendees <= 12,000	\$ 3,000
attendees >12,000	\$ 4,000



Size of event (Number of attendees)	Parking internal cost
<= 6,000 attendees	\$ 2,000 + \$ 1 per car
6,000 < attendees <= 12,000	\$ 4,000 + \$ 1 per car
attendees >12,000	\$ 6,000 + \$ 1 per car

## Appendix

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### Invoice email

Below is the template for the invoice email sent to the customer after an event has been completed.

#### Invoice from Front Stage

<Date>

Dear <Contact Person Name>,

Below is an invoice for the event organized by Front Stage.

Yours Sincerely,

<Event Manager Name>

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Invoice Details:

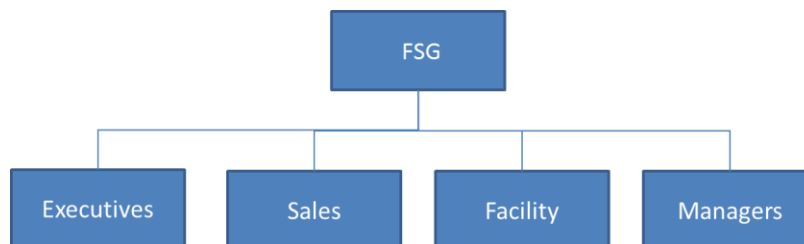
Invoice #: <Event ID>

Due Date: <One month from today's date>

Total Amount Due: \$ <Total invoice amount>

### Organizational Structure

Front Stage's (FSG) organizational structure for event planning and execution looks as follows.



Create the following users for testing purposes.

<b>Department</b>	<b>Role</b>	<b>Operator ID</b>
Executives	Executive Officer and CEO	CEO@FSG.com
Executives	Executive Officer	ExecutiveOfficer1@FSG.com
Executives	Executive Officer	ExecutiveOfficer2@FSG.com
Sales	Sales Executive	SalesExecutive1@FSG.com
Sales	Sales Executive	SalesExecutive2@FSG.com
Facility	Facility Coordinator specialized in Parking	FacilityCoordinator1@FSG.com
Facility	Facility Coordinator specialized in Weather Preparation	FacilityCoordinator2@FSG.com
Facility	Facility Coordinator specialized in Weather Preparation and Parking	FacilityCoordinator3@FSG.com
Managers	Event Manager and Team Lead	EventManager1@FSG.com
Managers	Event Manager	EventManager2@FSG.com
Managers	Event Manager	EventManager3@FSG.com