

Mega Print

Technical Architect Program

Official Practice Scenario



TRAILHEAD
ACADEMY

Project Overview

The Mega Print Corporation supplies large-format banners for venues such as stadiums, convention centers, schools, and theaters. Mega Print works with venue operators to become a "preferred print vendor." Mega Print is the preferred print vendor at the Moscone Center in San Francisco and has printed all Dreamforce banners for the past 10 years. Mega Print creates virtual renderings of venues with banner placeholders and works directly with the event customers to edit images and print banners that fit the venue perfectly.

Mega Print has been in business for 50 years, acquiring multiple companies along the way to improve their printing capabilities and expand their client base. Mega Print sells in the US, Canada, Spain, and Ireland. They are continuing to expand in existing markets and are looking to onboard new countries at a rapid rate. Mega Print has realized its current diverse sales processes and technologies are inhibiting growth, and they're looking for this project to address scaling issues.

Mega Print currently is a preferred print vendor at 20,000 venues, and supplies 10M banners for over 500,000 events annually. This volume is expected to double in the next 3 years.

Three Salesforce and two MS Dynamics instances track deals and issues. Each system is the result of an acquisition by Mega Print and was originally intended to serve a separate geography; however, there is now significant overlap in customers across systems.

General Pain Points

1. Active Directory manages and authenticates all Mega Print employees. There is frustration today because of the lengthy and error-prone manual process required for employees to get access to systems.
2. Mega Print has had issues with terminated users continuing to have access to systems and would like the new system to address this going forward.
3. Mega Print has some developers familiar with ANT-based deployment tools, but generally launch nights involve following an error-prone deployment document/script. They are looking for leading practices to automate deployments to all environments and integration points.

Venue Onboarding

1. Partner Sales Representatives call on venue prospects and negotiate preferred print partner relationships between Mega Print and the venue (500 total users, including management).
2. Venue operators (60k total users, with an average of 3 per venue) work with Technicians to build the virtual venue rendering with banner placeholders, refer clients to Mega Print for event printing needs, and assist during banner installation.
3. When onboarding a new venue, the Partner Sales Representative should be able to create a venue administrative user that can then add/manage additional users at their venue.
4. By default, a venue can have a total of 20 active users that are added by the administrator. This limit can be increased by the Partner Sales Representative.
5. The Partner Sales Representative will assign a new venue to a primary print location based on distance between the venue and print location. The Partner Sales Representative should have a visual that aids in the selection of the default print location when onboarding a new venue.



6. Print Technicians create venue renderings during the onboarding process. There are 7000 total technicians (including management) who work from and are assigned to one or more of 500 print locations worldwide.
7. The onboarding process should facilitate the assignment of an available technician who is associated with the venue's default print location. The technician will work with venue operators to create renderings of the venue with banner placeholders.
8. Venue renderings are created in custom Computer-aided Design (CAD) software that enables Technicians to render blueprints of venues with imagery placeholders to facilitate event sales. It is also configured to manage print jobs at each print location.
9. The technician and Partner Sales Representative will finalize sizing options and pricing for banners and make them available for sale. Venues average 50 banner placeholders that customers may customize for events.
10. Partner Sales Representatives can view all other partner accounts, but only edit their own account.

Event Sales

1. A website shows examples of renderings for all venues, along with options to download more information about Mega Print and a specific venue. Downloads require submission of name, title, venue name, city, state, country, email address, and phone. Inquiries (1000+ daily) are forwarded today to an email distribution list. Mega Print knows there is business that is being lost due to lack of follow-up on these emails.
2. Event Sales Representatives are members of a global field sales team that responds to information requests from the website. 4500 Event Sales Representatives (including management) are divided into 4 country teams, expanding down ultimately to 50 local teams.

3. Customers (600k total users, distributed over 250k accounts) who average 2 events annually at venues and order large-format banners from Mega Print.
4. Customer inquiries from the website and referrals from vendors should be assigned to the Event Sales Representative who has previously worked on events with the customer if one exists. Otherwise, the referral should be available to be worked by an Event Sales Representative that is assigned to the venue geography (country).
5. If a referral has not been picked up within 24 hours, Event Sales Representative Management is responsible for allocating the referral appropriately.
6. The event sales process starts with the Event Sales Representative sending an email to the customer with links to detailed PDFs of venue banner options and an introductory brochure of the Mega Print Process. Event Sales Representatives would like to see when the customer opens these files so they can follow up with a phone call.
7. Given high turnover in the Event Sales Representative team, Mega Print would like to help drive consistency into the Event Sales process, giving guidance to the Event Sales Representative at every step.
8. When working with the customer to select appropriate banners for their event, the Event Sales Representative should be able to quickly limit their view to only show banner options for the specific venue where the customer event is being held.
9. Repeat customers expect to have images on file from previous events that they can use as a starting point for discussion. The CAD system can export a list of image locations on the network drive, with Event and Placeholder identifiers for reference on the order.

Orders

1. Two on-premise SAP systems have been in place at Mega Print for 25 years, and today are the source of truth for accounts and ERP data globally. The second SAP system was a result of an acquisition of a group of print locations; these print locations continue to leverage this system for all order transactions.
2. The SAP systems have caused duplicate and data consistency issues. Mega Print would like to address data quality at migration and in the future.
3. Mega Print expects all systems to have options for local currency and USD. Exchange rates stored in SAP are updated monthly and should apply to all transactions that close in that calendar month.
4. Customers are required to put a deposit down via credit card for 20% of the total order to proceed with banner image creation. This should be collected via credit card.
5. Customers can choose to save credit card data for future purchases, but sensitive credit card data should not be accessible to any end user.
6. Premier customers should have the 20% deposit waived automatically if there are no outstanding unpaid invoices greater than 30 days when the order is created.
7. Only Event Sales Representative Management can change a customer's "Premier" status.
8. Each CRM instance connects to SAP to submit orders. Event Sales Representatives do not login to SAP directly. Custom services on each CRM instance translates data into the required SAP Business Application Programming Interface (BAPI) format and has logic to connect to one (or both) SAP systems.
9. The appropriate SAP system should be notified of each closed deal, including quantities of each banner type sold, order totals, and amount of deposit collected.

10. SAP has monthly scheduled downtime that lasts between 24 and 72 hours. Additionally, there have been unplanned outages that have raised questions as to whether an order was placed successfully. The system should expect and handle SAP outages without causing disruption to the order process.
11. The system should route closed deals to the print location associated with the venue for banner image creation.
12. Event Sales Representatives should not have access to other teams' data (accounts, sales, issues, print jobs), but should have access within their local team to help back one another up in the sales process.
13. A customer should be able to optionally log in to the system using their existing Salesforce, LinkedIn, or Google credentials from a desktop or mobile device. From a mobile device, they should not be constantly prompted for authentication credentials.

Banner Image Creation

1. Print Technicians overlay client imagery onto venue banner placeholders in the CAD system, but many details that are not tracked in SAP are submitted via email and entered manually into the CAD by the technician.
2. The CAD system leverages network storage arrays in a hosted datacenter with a capacity of 2 Petabytes to accommodate expected 3-year growth. It creates unique private folders exposed by a web-based UI for each event customer to upload image files for their events.
3. While each customer has access to a private network folder where they upload images, they still need to email the technician instructions with image links to placeholder mappings and cropping instructions. Mega Print has experienced issues with details being lost or misread in emails and wants to improve this process by ensuring the customer edits instructions directly on the order.

4. When the technician has the right combination of banner offerings and image details, the order is sent to the customer to sign electronically. This should include blueprints of the venue, image placeholder details, and cropping notes.
5. When the deal is signed and the deposit obligation paid (if any), the system should lock any changes to the deal and release it for print job fulfillment.

Banner Printing

1. A released print job should automatically instruct the CAD system to fulfill the print job. This system exposes a REST API that accepts print job instructions. It is also configured to publish status messages for each print job to a webhook-type interface.
2. Each print location has a set daily printing capacity (on average, they can print 200 banners daily). Given the backlog of all print jobs at the print location, the system should indicate if any print job(s) will not meet the agreed ship-by date. Banners are printed in the order they were set to "Ready for Printing."
3. Mega Print operates in a time-sensitive business and cannot afford to have system errors jeopardize delivery of accurate banners by the promised delivery date. This project should establish development processes that ensure the system will function as expected.
4. A technician should be able to request help from another print location to complete print job(s) on time.
5. Technicians should have access to view all orders, print jobs, and issues, but only edit those records assigned to one of their active print locations.
6. Customers should only have access to their own orders, print jobs, and issues.
7. Venue operators should have access to all orders, print jobs, and issues for their venue(s). Operators often manage multiple venues and should have access to all those venues.
8. Technician managers review all print request jobs in danger of missing their ship-date on a daily standup call. This daily summary should be sent via email to all technician managers.

Banner Installation

1. Venue operators and customers coordinate banner setup using mobile devices (normally iPads, but large-format phones are becoming more common. Given the large size of the files involved, Mega Print wants to be able to cache placeholder images and venue blueprints on the device.
2. Venue operators manage their event setup workload using reports of banners that will be delivered for upcoming events.
3. Event setup usually begins a week before the event. If an issue arises with one of the banners, Venue Operations and customers expect to be able to reach their technician via email, phone, text, or chat to resolve their issue.
4. Issues are managed primarily through email, which integrates with Outlook and MS Dynamics. While Mega Print wants to centralize and standardize its support process, communication via email is considered critical to operations today and will likely remain a common support channel in the future.
5. Issues during event setup are time sensitive. Mega Print is committed to providing 1-hour initial response time from Print Support for all event-related issues 24 hours per day, 7 days per week. If this is exceeded, the Event Sales Representative should be notified via Push Notification on their mobile device.
6. Resolving issues usually requires collaboration between venue operators, the customer, and the technician.
7. Technician Managers review issue trends by print location and issue type.
8. Partner Sales Representatives should be able to view all customer issues to improve partner onboarding efforts.
9. All issue history (3 million records) is considered relevant to look for trends where Technicians can alter banner size, material, and fasteners to prevent issues going forward at active venues. Each MS Dynamics instance categorizes issues and root causes differently today.
10. It is important that issue data reference the original Partner Sales Representative, Event Sales Representative, and technician, although due to turnover, it is likely they are no longer active Mega Print employees.

Expansion

1. Partner Sales Representative managers need to prioritize venue growth potential based on monthly referral trends and closed event deal trends from referrals for the past 5 years. This report should also be available to partner venue operators for partnership planning.
2. Partner Sales Representative managers need to determine the next 5 strategic countries to launch for Mega Print global expansion by comparing venue penetration by country along with event trend data (purchased csv files) and other demographic data sets.
3. Expansion will be fueled by acquisitions into new countries; acquisitions come with new processes and systems that must be integrated. Today, the SAP team works methodically to define, prioritize, and sign off requirements prior to any development effort. Their timeline to implement new features is backed up 18 months, but they consistently put out high-quality, low-defect work. How can this project help the SAP system improve their velocity to be able to keep up with the increasing demand for change?
4. Existing SAP systems require frequent maintenance downtime. Additional requirements brought on by future acquisitions will increase SAP downtime. Downtime cannot negatively impact Mega Print's acquisition strategy; this project should address these concerns.
5. Mega Print often makes bug fixes in production. Recently production fixes have been overwritten on a subsequent deployment. This has caused user frustration and lack of trust. It is imperative that the business believe the systems can keep pace with the demand that will be put on them during planned expansion.