DIGITIZATION FOR CUSTOMER DELIGHT IN READY MIX CONCRETE BUSINESS IN INDIA

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ABSTRACT

The concrete industry in India is subjected to challenges such as aggressive work schedules, space constraints and requirement of concrete with high strength and quality which has created an increasing awareness of Ready Mix Concrete (RMC) due to its many advantages. However, RMC Industry has been always being plagued by issues such as ensuring proper understanding of customer requirements, tracking of product delivery during transit from manufacturing plant to site, unceasing follow ups, and planning error free concrete pours. Improper handling of these issues leads to losses in man-hour, time and quality and cause customer dissatisfaction. In this age of digitization, a leading RMC company felt the need to formulate a customer service oriented mobile based application (App) for addressing customer concerns. In order to make the App relevant with real-time updates, the organisation mapped customer issues. This paper elaborates the journey for the development of RMC App and explains how it serves as a virtual assistant to enhance the customer experience by easy tracking and real-time product updates right from the concrete booking to delivery at project sites. The approach for App development based on Lean principles is brought out in the paper, covering strong orientation for customer value creation, innovative approach for operational efficiency and waste minimization by continuous improvement etc.

KEYWORDS

Lean Construction, Collaboration, Continuous Improvement, Digitization, customer value creation.

INTRODUCTION

In a developing country like India, Construction plays a significant role in the overall national development and the sector accounts for second highest inflow of (FDI) approximately 8% which generates employment more than 35 million people. The Indian construction industry is valued at over USD 126 Billion. (makeindia.com Report 2017). During the last decade, the business infrastructure has become digital with increased interconnections among products, processes, and services (Bhardwaj A 2013). Information technology matters to business success because it directly affects the mechanisms through which they create and capture value to earn a profit: IT is

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thus integral to a firm's business-level strategy. IT both enhances the firm's current (ordinary) capabilities and enables new (dynamic) capabilities, including the flexibility to focus on rapidly changing opportunities (Dr Nevich PL, Croson DC 2013).

Results suggest that firms whose digital business models remain viable in a world of "freemium" will be those that take a strategic rather than techno-centric view of social media, that integrate social media into the consumption and purchase experience rather than using it merely as a substitute for offline soft marketing (Oestreicher-Singer, Gal and Zalmanson, Lior,2012).

Grover V, Kohli R (2013) feels that digital business strategies (DBS) offer significant opportunities for firms to enhance competitiveness. Unlike the large proprietary systems of the 1980s, today's "micro-applications" allow firms to create and reconfigure digital capabilities to appropriate short-term competitive advantage. In the quest to provide value to customers through digitization such applications can be efficiently deployed.

Current construction practices are unable to eliminate "causes of waste" efficiently due to limited use of information technology (IT) in the construction industry. There is truly a need of digital technology to address and manage the "causes of waste" in an integrated manner to achieve project success in terms of cost, time and satisfaction to clients (Jyoti Singh,2015).

Based on the above research it is evident that there is an urgent need in today's world for organisations to leverage IT and use digitization for better operational efficiency, customer service and creation of lean processes for product delivery to ultimately achieve the business goals of ensuring customer value with profitability.

WHY THE ORGANISATION FELT THE NEED OF THE RMC APP

The organisation felt that in addition to focussing on the financial parameters it needs to improve the customer experience by addressing relevant issues and identifying focus areas for improvement. Internal and External Third-Party Feedback Mechanisms were deployed to analyse stakeholder pain areas and highlight possible areas of improvement. Detailed analysis of customer grievances and issues faced right from Order Booking to Delivery across its entire production lifecycle were mapped. Feedback was taken in the year 2016-2017 by a reputed third party for RMC customers from Mumbai and Pune Region a batch size of 105 companies were considered and personal interview of 139 customers were taken. Findings are as follows: -

Note: Critical score is a product of importance & bottom 2 box
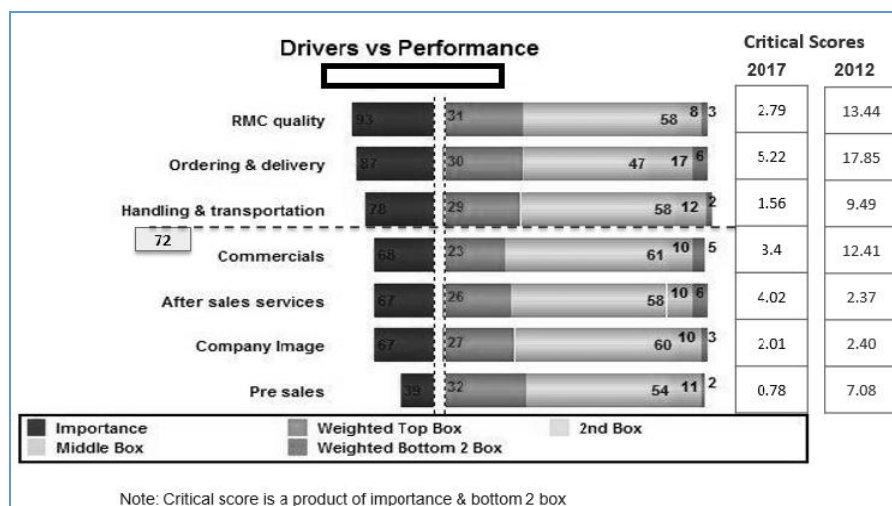
Figure 1- Feedback survey to give insights on Company's performance in a 5-year time frame (on critical parameters)

Figure 1

Third Party feedback indicating the need for the organisation to focus on Product Order & Delivery processes by attention to: -
1. Commercials
2. Post Sales Service
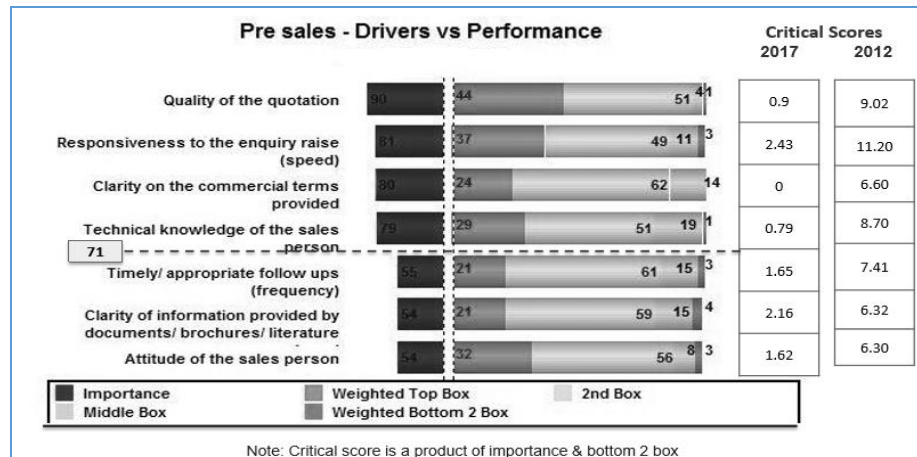3. Company Image
4. Pre- Sales Service

Figure 2-Feedback Survey indicating Focus areas for improvement initiatives in Order Handling and Communication (below score=71)

Figure 2

Feedback indicates need of the organisation to improve on the following parameters
1. Feedback on product delivery
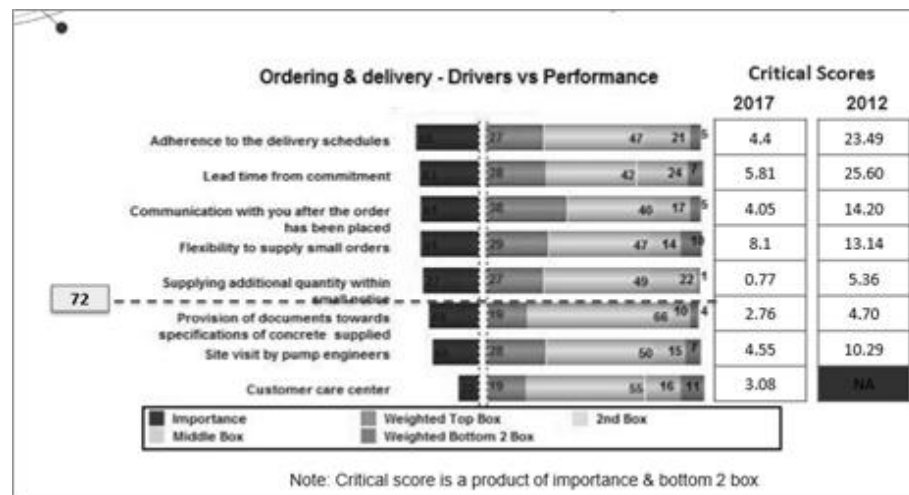2. Clarity of Information
3. Sales response/personnel

Figure 3-Feedback Survey indicating focus areas for improvement in Ordering & Delivery (below score-72)

Figure 3

Feedback indicates need of the organisation to improve on the following parameters

1. Documentation on product delivery
2. Technical Support
3. Customer Care responsiveness

Based on the above Feedback mechanisms deployed, stakeholder needs and expectations are summarized below:

CUSTOMER ISSUES:

Cumbersome booking process

Non- adherence to committed delivery timelines

Multiple telephone calls for Transit Mixer(TM) follow-up

Non- availability of detailed metrics of order i.e. dispatched and pending loads to all relevant teams

No real-time status updates available.

SUPPLIER ISSUES:

High wastages in concrete supplied due to improper communication received pertaining to the Concrete Grade, Quantity, Time etc.

Multiple requirements and multiple calls from single project involved in Order Booking often resulting in confusion and wastage.

Lack of a platform to update production teams for all orders taken across all plants.

Handling irritated customers / order loss due to delay in deliveries.

Lack of real time tracking of TMs causing trust and transparency issues.

Lower productivity of TMs due to low cycle time.

Delayed payments because lack of information and communication to end users from Accounts team.

DEVELOPMENT OF THE RMC APP

In this age of digitization, India has seen an increase in the use of smartphones for ease of business and related transactions to improve operational efficiency, better communication management across multiple stakeholders to minimize time and maximize value to all in the supply chain. App usage is the preferred option to simplify routine work in today's tech savvy world. But the main advantage of mobile App usage is that there is no need for formal training required for effective usage and this saves a lot of the organizations and stakeholder's time and effort. Hence, the company decided to leverage technology to enhance customer experience by providing a hand held virtual assistant for the Concrete Supply business. The company collaborated with their internal IT team to develop a customer friendly Mobile App which would address customer concerns and

reduce wastages in time and material by creating a platform for effective communication management across all stakeholders.
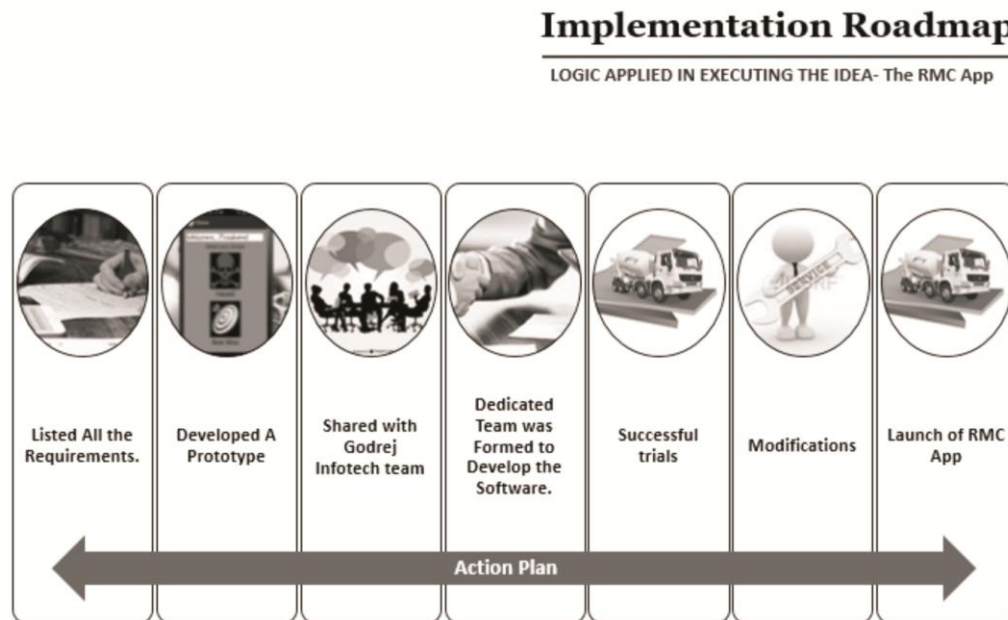

Figure 4-Stages of RMC App Development

STAGES IN RMC APP DEVELOPMENT
(From concept up to its implementation, commercial development, and deployment)

1) MANAGEMENT OF CUSTOMER NEEDS AND EXPECTATIONS:

The key features based on customer and supplier needs and expectations which the App would address were listed:
Real time updates to customer since RMC is a live product and having shelf life of only 3 hours
Tracking of delivery trucks.
Ease of order booking and confirmation to customer
Outstanding details and alerts
Product information

2) **IDEA GENERATION**

A Lean App team was formed comprising of various internal stakeholders such as Production, Planning, Finance, Safety, IT to create a platform to collaborate for faster turnaround and to optimisation of resource expertise and knowledge.

3) **CONCEPT DEFINITION**

Various possible mobile app models were evolved from the efforts of the Lean App team and after feedback from Top Management and consensus from the entire team the best model for development was chosen.

4) **PLANNING AND DESIGN**

Planning and Design of the App involved creating a Lean charter with all stakeholders with target milestones. These milestones were monitored and controlled to ensure timely delivery and launch of the App.

5) MOBILE APP DEVELOPMENT

Development of the mobile App was done as per the organisations requirement by the IT team and several trials runs of initial versions were taken. To mitigate this and improve the effectiveness of vehicular tracking system by GPS, it was decided to install the GPS system within the Transit Mixers(TM). A contractual commitment with Map My India which is a service application and technology provider for offering satellite imagery, street and other maps via GPS helped tracking the real-time location of the TMs during the pour.

6) TEST AND EVALUATION OF APP

Beta version was released and shared with selected customers to take their inputs. Testing and evaluation of mobile App was handled by the Customer Care team.

7) MOBILE APP LAUNCH POST TESTING

A Web Portal which serves a backend of the Mobile App provided able support to the RMC App. Initial testing was done within the internal team comprising of Production team, Finance team, and drivers. As the GPS of the TM was tracked with reference to the mobile position of the driver it led to certain issues such as faulty location and no errors in real time data.

Indicated below are Figures which help understand the features of the App and how it addresses customer issues and enables ease of communication among stakeholders.
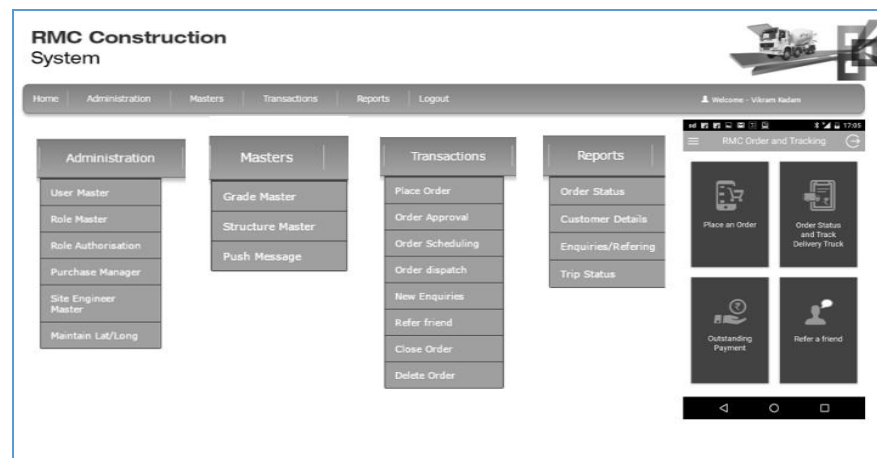

Figure 5 – Mobile Application and Backend System (Screenshot shots indicating easy App interface to meet customer needs

Figure 5: This figure portrays the Web Portal backend for the RMC Mobile App (all the orders, reports of all customer etc are shown on the Web Portal)
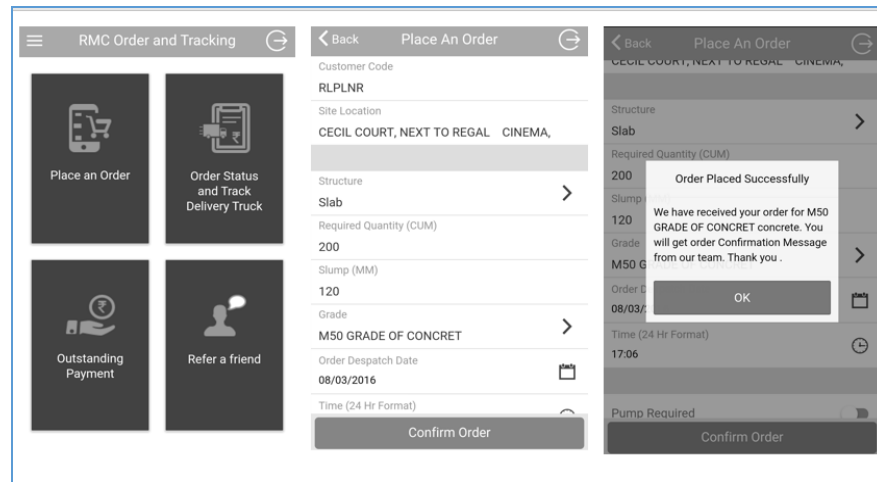
Figure 6- Some features –Payment Status and Refer a Friend

Figure 6
These Screenshots portray the screen wherein we can: -
1. Place an order
2. Check the outstanding balance
3. Order Status
4. Referral page in the App.
5. Booked order details

Figure 7-App provides Consolidated Product Order details

Figure 7
This figure potrays the screenshot of
1. Customer Order Number
2. Unique Customer Code
3. Total Ordered Quantity
4. Scheduled Quantity
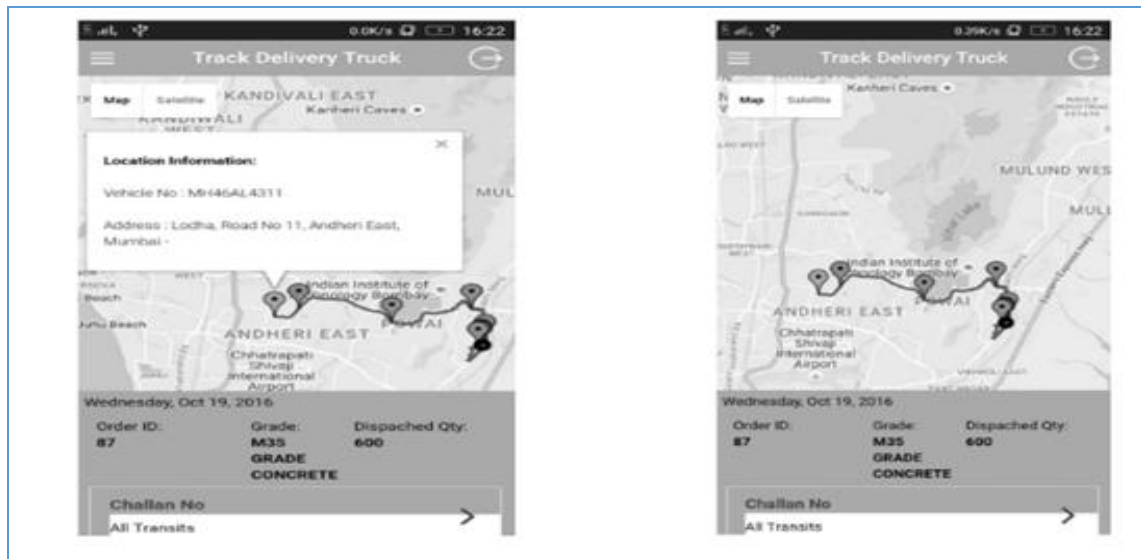5. Order Delivery Date & time

Figure 8- Live Tracking feature of the Transit Mixer

RESULTS:

(a) CUSTOMER RELATED RESULTS:

1. Online Order Booking and Live Updates eliminate the need for calling the RMC Sales Team, the Customer Care and rigorous follow up hence saving time and better communication.
2. Real Time Order Tracking for effective site planning by customer.
3. Quick Confirmation after booking of order with flash message and Unique Order ID.
4. Increased transparency and improved customer experience.
5. Consolidated information available on Payments/Orders for a project site.

(b) SUPPLIER RELATED RESULTS:

1. Waste Reduction: Morale boost in Concrete Production teams due to reduced wastages in time, cost and increased productivity due to reduction in non-value adding work
2. Increased Safety: Due to availability of TMs-data on speeding, overheating of engine, mileage and productivity available.
3. Improved Distribution and Logistics: App acts as a seamless mobile app to address most Logistic issues like the turnaround time of a transit mixer, how much time the empty vehicle will take to come to plant to increase the operational efficiency
4. Ready-Mix Concrete Supply Chain process due to its ability to notify RMC truckers of delivery instructions, location based tracking of trucks.
5. Systemic view of Information for better decision making.: The solution integrates organisation's BAAN ERP in premise for exchange of master configuration data and transactions from mobile app orders, delivery and invoices thereby providing operational data that will help improve processes and aid decision making.
6. Improved Truck Turnaround Time(TTT).

RESULTS POST IMPLEMENTATION OF THE LEANBASED MOBILE APP: -

OTHER BENEFITS:

1. Improved Customer Satisfaction since all their needs were addressed
2. Error Reduction
3. Targeted Advertising
4. Improved Order Handling
5. New Customers
6. Company Database Building
7. Customer Retention
8. Additional Sales Opportunities
9. More responsive customer service centre

FEEDBACK FROM STAKEHOLDERS & RESULTS:

Post the App launch and successful usage, the following feedback was received from top 15 ustomers on a scale of 1-5.
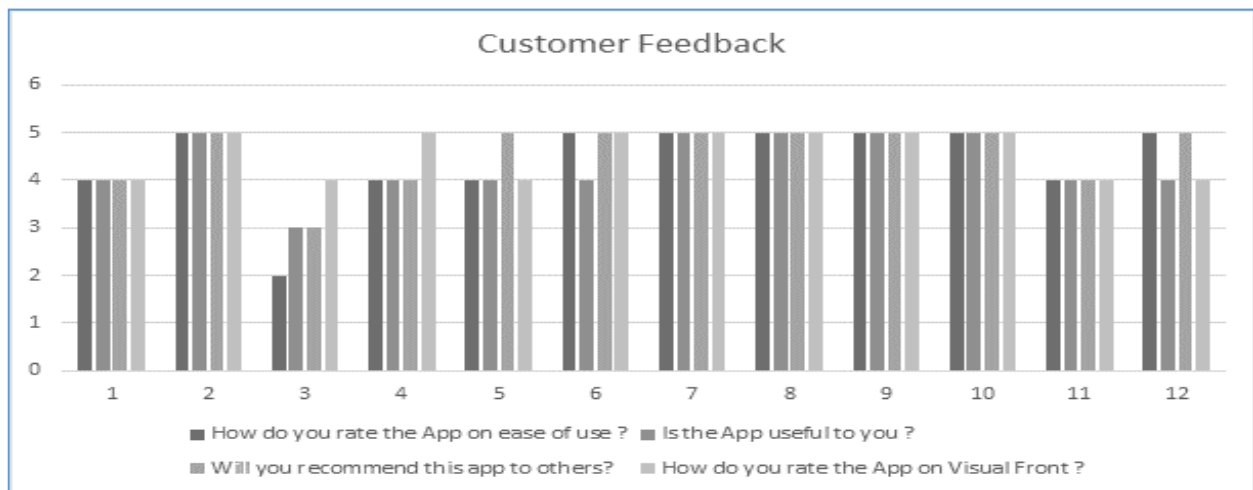

Figure 9 -Graph Indicating Customer Feedback for the Mobile Application

Customer Feedback post launch and usage indicates:
- Most customers have found the App to be user friendly.
- Most customers felt that it is very useful and has met their needs and expectations.
- Customers strongly feel that this App will help RMC players in the market to ensure better communication, product delivery and customer satisfaction thus creating a competitive advantage.
- The visual interface has been appreciated but there can be further scope of adding better features for speed of data retrieval etc.

FEEDBACK OF THE CUSTOMERS: - CUSTOMER SPEAK:

Customer A

· Transit Mixer are updated with real time status so better site planning is possible.

Customer B

·   It minimises the gap of communication between dispatch and consumer, easy to operate.

Customer C

·   Overall good, my team can manage order through a virtual hand-held assistant during concrete pours

Customer D

·   Excellent app, can see all my outstanding dues and clear them on time.

LEAN WAY FORWARD AND PROPOSED INITIATIVES FOR RMC APP CONTINUOUS IMPROVEMENT:

1. Editing of the Live Order.
2. Introduction of Quality Features.
3. Inbuilt Feedback Mechanism.
4. Additional Text (SMS) alerts.
5. SMS will be sent to customer on completion of Order through Web portal to collect feedback.
6. Improvements in Web portal like "Scheduled time of Dispatch" and "Pour Duration"
7. Customer access for editing Order.

CONCLUSION

Digitization helps to a large extent to address customer and supplier issues in a service industry such as "Ready Mix Concrete "where multiple stakeholders need to be given product related real type updates and communication management poses challenges.

In today's technology driven era, adopting digitization to improve customer satisfaction and to make the organisation "Lean "in terms of process optimisation, waste minimization is the need of the hour.

Continuous improvement based on periodic Stakeholder feedback for digital Apps is a must so that new needs are converted into digital features and to prevent the App from becoming obsolete.

For the service providing organisation, digitization helps creating a real-time database for getting insights on production, delivery, product quality, customer issues and helps analyse and use trends to get a competitive advantage and enhance brand image.

Smooth process flow can be enabled by Digital Apps across the supply chain which translates into   efficient production systems, improved morale in teams, profitability and customer satisfaction .

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