

Digital Transformation of the Biomedical Equipment Contract Management

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Case Reports

Mr. Manish Sharma

Mr. Ramakant

Mr. Ashish Sood

Dr. Arpita Malani

Mr. Satish Kumar

Background

Indraprastha Apollo Hospital, Delhi established under a public-private partnership, is renowned for its commitment to clinical excellence and superior patient outcomes. The hospital employs state-of-the-art technology and highly skilled professionals, supported by standardized processes to deliver exceptional healthcare services. The hospital has a systemised mechanism of identifying the gaps in its processes, where in one such gap identified was biomedical equipment contract management process, taking 200 days to

process. It was observed through a structured root cause analysis that the main reason for the long delay was due to lack of coordination among various stakeholders and use of physical document exchanges, which slowed down approvals further and heightened operational risks. The hospital developed an end to end digital contract management system to overhaul its biomedical equipment contract renewal process. The new system did away with physical handling of documents by turning the entire contract management process digital.

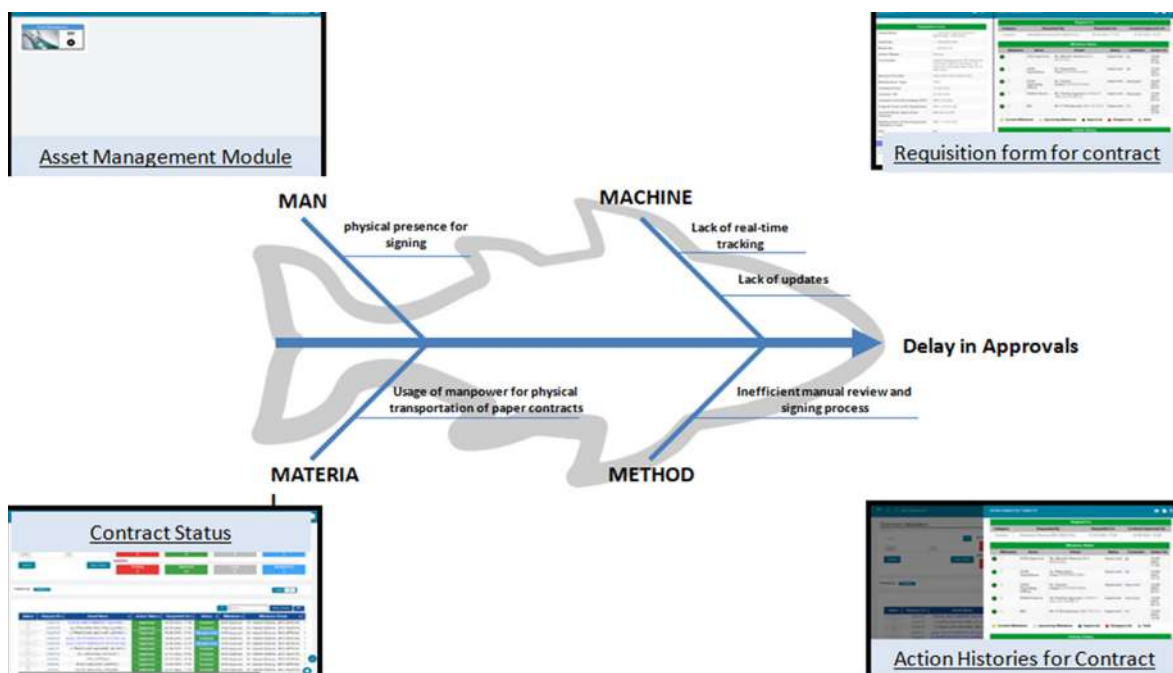


Fig. 1 Root Cause Analysis

Distinctiveness of the Practice

Unlike traditional manual systems, which relied

on cumbersome paperwork and were prone to delays, the digital approach introduced


by Indraprastha Apollo Hospital offered a streamlined, automated solution. This digital transformation was developed using lean management principles, the project was committed to the elimination of non-value-adding activities, the reduction of turnaround times, as well as enhancing service delivery of biomedical equipment. Key features of the new practice covered following aspects:

- Centralised Storage: The digital application had a centralised storage system so that

the different stakeholders involved in the process of biomedical equipment contract management could view, review, and approve contracts remotely through a wireless platform.

- Automated alerts: These alerts reminded the stakeholders of pending approvals, which ensured timely action. Regular status updates kept all stakeholders informed, significantly reducing the need for manual follow-ups.

Techelpdesk- Acknowledgment Alert For Asset Contract: CAMC/TECH/102



imcl_alerts@apollohospitals.com
To: Ramakant Sharma

If there are problems with how this message is displayed, click here to view it in a web browser.

Reply
Reply All
Forward
...

Wed 15-01-2025 12

Dear Ramakant Sharma,

You have successfully requested Contract and request has been sent to **Mr. Manish Sharma (BIO-MEDICAL)** for HOD Approval.

Request Details		
Request For:	CAPILLARY (MINICAP) (BIEP02)	
Requested On:	15-01-2025, 12:25	
Status as on: 15-01-2025, 12:25		
Milestone	Owner	Status
HOD Approval	Mr. Manish Sharma (BIO-MEDICAL)	Pending
AGM-Operations	Dr. Rajprabha Patra (OPERATIONS)	NA
Chief Operating Officer	Dr. Gaurav Katyal (OPERATIONS)	NA
GM-Finance	Mr. Pankaj Agarwal (FINANCE AND ACCOUNTS)	NA
MD	Mr. P Shivakumar (MD OFFICE)	NA

Requisition Form	
Action Status	Renew
Asset Name	CAPILLARY (MINICAP)
Comments	CMC to be renewed for 2025-26. 5% Escalation from the last year contract value. (CMC Including 1 PM kit & 2 Capillaries)
Service Provider	SEBIA Diagnostics Pvt. Ltd.
Maintenance Type	CMC
Contract From	03-02-2025
Contract Till	02-02-2026
Contract Cost (Excluding GST)	INR 3,85,875
Original Cost of the Equipment	INR 14,16,000
Current Book value (from Finance)	INR 7,08,128
Replacement of the Equipment (Tentative Cost)	INR 18,00,000
EOL	No
User Comments	Ok

Fig.2 Alert system of the Software for Contract Request

- Real-time messaging: This feature functionality allowed seamless communication, with decision-making becoming faster and less susceptible to bottlenecks.
- Remote Access: The application was also made accessible on mobile to ensure timely actions by different stakeholders.
- This end-to-end digital workflow reimagined the contract management process by reducing approval timelines, ushering in transparency, and enabling accountability. The practice not only improved operational efficiency but also elevated stakeholder satisfaction to new heights, setting a benchmark of excellence in hospital contract management.

Request For						
Category	Requested By		Requested On	Contract Approved On		
Contract	Ramakant Sharma (BIO-MEDICAL)		15-01-2025, 12:25	20-01-2025, 14:14		
Milestone Status						
	Milestone	Name	Owner	Status	Comment	Action On
<input type="radio"/>	1	HOD Approval	Mr. Manish Sharma (BIO-MEDICAL)	Approved	Approved	15-01-2025, 12:39
<input type="radio"/>	2	AGM-Operations	Dr. Rajprabha Patra (OPERATIONS)	Approved	NA	15-01-2025, 12:42
<input type="radio"/>	3	Chief Operating Officer	Dr. Gaurav Katyal (OPERATIONS)	Approved	Approved	15-01-2025, 14:29
<input type="radio"/>	4	GM-Finance	Mr. Pankaj Agarwal (FINANCE AND ACCOUNTS)	Approved	Approved	20-01-2025, 13:07
<input type="radio"/>	5	MD	Mr. P Shivakumar (MD OFFICE)	Approved	Approved	20-01-2025, 14:14
<input type="radio"/> Current Milestone <input type="radio"/> Upcoming Milestone <input type="radio"/> Approved <input type="radio"/> Disapproved <input type="radio"/> Hold						
Activity History						
Sr. No.	Activity For	Action	Action By/ Owner	Time	Comments	Activity Data
1	Contract Request	Contract	Ramakant Sharma (BIO-MEDICAL)	15-01-2025, 12:25	CMC to be renewed for 2025-26, 5% Escalation from the last year contract value. (CMC Including 1 PM kit & 2 Capillaries)
2	HOD Approval	Approved	Mr. Manish Sharma (BIO-MEDICAL)	15-01-2025, 12:39	Approved
3	AGM-Operations	Approved	Dr. Rajprabha Patra (OPERATIONS)	15-01-2025, 12:42	NA
4	Chief Operating Officer	Approved	Dr. Gaurav Katyal (OPERATIONS)	15-01-2025, 14:29	Approved
5	GM-Finance	Approved	Mr. Pankaj Agarwal (FINANCE AND ACCOUNTS)	20-01-2025, 13:07	Approved
6	MD	Approved	Mr. P Shivakumar (MD OFFICE)	20-01-2025, 14:14	Approved

Fig.3 Dashboard of Application

Measuring Effects

The significant positive effect of the digital transformation was visible through a reduction in turnaround time from 260 days in 2022 to less than 4.75 days in 2023.



Fig.3 Turnaround Time of the Contract Management Process

The faster turnaround times led to maintaining the criticality of the functioning of the biomedical equipment, directly impacting the quality of care. By reducing turnaround times and eliminating inefficiencies, the initiative ensures that equipment remains operational and ready for use, thereby minimizing disruptions in healthcare services.

The paperless approach also led to reduction in the administrative burdens associated with the long contract management process.

Additionally, the use of centralized digital

storage enhances data security and compliance, ensuring the reliability and integrity of critical information. The streamlined process enhances transparency, accelerates decision-making, and optimizes resource allocation, contributing to better oversight and operational efficiency. Timely renewals and enhanced communication strengthen vendor relationships, ensuring uninterrupted service delivery.

Challenges

The hospital faced numerous challenges with respect to the adoption of the new digitised process. The different challenges faced by the hospital are listed below:

- **Lack of Coordination and resistance to change among different stakeholders:** Different stakeholders lacked coordination in the earlier process. Stakeholders were accustomed to traditional processes and hesitant to adopt digital solutions, which was minimised through targeted closed-door training programs on the new software.
- **Integration with Existing Systems:** Scrutinizing the challenges in the existing challenges was a difficult task as the development of the software had to ensure these challenges to be considered upon.
- **Infrastructural upgrades:** Customising the software according to the process of the hospital was important. The issues of data storage and privacy needed to be addressed, which was done through backups at two different locations.
- **Ongoing Maintenance and Updates:** Regular updates and refinements were necessary to keep up with evolving hospital needs and feedback.

Lessons Learned

The successful deployment of the digital contract management system offered several critical insights that can guide future initiatives:

- **Stakeholder Involvement:** Actively involving stakeholders from the beginning was essential to the project's success. Engaging

staff, management, and vendors ensured that their needs were addressed during system development, leading to widespread acceptance and seamless adoption.

- **Training as a Cornerstone:** Comprehensive and targeted training programs proved vital in overcoming resistance to change. These programs equipped stakeholders with the knowledge and confidence to use the system effectively, enabling smooth integration into daily operations.
- **Real-Time Data:** Providing stakeholders with access to live updates through the system improved accountability and transparency. Real-time insights facilitated quicker decision-making and more effective management of contracts.
- **Continuous Feedback Loops:** Establishing mechanisms for regular feedback was instrumental in the system's evolution. By addressing emerging needs and refining features based on user input, the platform maintained its relevance and sustained its efficiency over time.

Sustainability of the Practice

The hospital implemented several strategies to ensure the long-term sustainability of the digital contract management system. Routine evaluations were conducted to identify areas for improvement and maintain the system's relevance to evolving hospital needs. The

platform was seamlessly integrated with existing hospital inventory and billing systems, enhancing data consistency and streamlining workflows. Ongoing training sessions were regularly held to keep staff updated on system functionalities and ensure continued proficiency. Additionally, performance monitoring was an ongoing process, with key metrics such as approval rates, stakeholder satisfaction, and equipment uptime being continuously tracked to measure the system's impact and drive further enhancements.

Conclusion

The hospital's digital transformation of contract management significantly improved efficiency, reducing turnaround time from over 200 days to under five days. By engaging stakeholders early, implementing targeted training, leveraging real-time data, and ensuring continuous feedback, the hospital successfully streamlined workflows and minimized manual errors. Strong change management practices, leadership support, and a commitment to data security further facilitated seamless adoption. The system's long-term sustainability was ensured through regular evaluations, integration with other hospital systems, ongoing training, and performance monitoring. This transformation not only enhanced operational efficiency but also set a precedent for leveraging digital solutions in hospital management.

Digital Transformation of the Biomedical Equipment Contract Management

1

Target Population

Hospital administrative staff, biomedical engineers, and vendors involved in biomedical equipment contract management.

2

Phenomenon of Interest

Implementation of a digital contract management system to streamline approvals, reduce turnaround time, enhance transparency, and improve operational efficiency in biomedical equipment maintenance.

3

Context

Indraprastha Apollo Hospital, a leading quaternary care hospital in Delhi, transitioned from a manual contract renewal process to a fully digital system, for better coordination and compliance.

Conclusion



The digital transformation of biomedical equipment contract management significantly improved efficiency, reduced delays, and set a benchmark for leveraging technology in hospital operations.

Key Findings

1

Enhanced Transparency and Coordination

Real-time data access, automated alerts, and centralized digital storage improved accountability, minimized delays, and streamlined communication among stakeholders.

2

Drastic Reduction in Turnaround Time

The digital contract management system cut approval time from 200+ days to under 5 days, ensuring timely renewals and uninterrupted biomedical equipment functionality.

3

Operational Efficiency and Cost Savings

The paperless approach reduced administrative burdens, optimized resource allocation, strengthened vendor relationships, and enhanced compliance with data security protocols.