AUGMENTED REALITY
FOR EQUIPMENT
MAINTENANCE | TRAINING | SALES
Personas and Needs

Bio-Med Technician
Mike
Age – 25 years

Mike works as a bio med technician in a renowned hospital and follows protocols to ensure the medical equipment is well maintained, properly configured and safely functional.

Anesthetist
Dean
Age – 35 years

Dean is the physician trained to administer and manage anaesthesia given during a surgical procedure. He works as a consultant anaesthesiologist and also teaches as post-graduate doctor in a medical college.

Nurse / Clinician
Dorothy
Age – 28 years

Dorothy is a trained caregiver whose task is to administer and monitor the patient in pre and post operation scenario. She does pre-counselling for the patients to get them on-board with the anaesthesia machine and guides them across the process.

Service Representative
Philip
Age – 40 years

Philip is a trained vendor technician whose task is to troubleshoot and support the bio-meds in custom hospitals, in case of equipment difficulties. He tries to solve their problems with devices and ensures that the product works perfectly.
The bio-med technician is responsible for installing and maintaining of the anesthesia machine and other equipment in the hospital.
The bio-med technician also provides the information about the machine and gives demo to other users.
A bio-med technician’s work includes troubleshooting the equipment in case of malfunction (with assistance from manufacturer representatives), regular check-ups and replacements of vital parts of the equipment. There is a lot of paperwork, as everything needs to be recorded.
Whenever the bio-med technician encounters a new medical equipment model, it is time-consuming to learn the specifics about this model, and cumbersome to carry manuals for multiple equipment models and versions.
When dealing with exceptional problems or new machines, it could be advantageous to get remote assistance from an expert.
It would be most efficient, if the biomed technician could get access to an expert via audio / video call and sharing of a video feed of the current equipment configuration and behavior.
Creating an augmented experience along with 3D animation of device components would speed up the understanding of new device model as well as carrying out regular maintenance with step-by-step procedures will enhance the operational efficiency of the workflow.
Workflow of the AR app for Clinician / Biomedical technician

Clinician / Biomedical technician

Visits the machine

Opens the AR app on the smartphone / tablet / smart glass

Scans the machine using AR app

Sees the checklist of tests to be performed

Checks wearable and consumable parts of machine

Is guided step-by-step through the procedure

Selects a test

Reports and statistics automatically recorded and uploaded

Replacement Needed?

Orders it through integrated e-commerce function

Yes

Finish (Test Completed)

No
Enterprise “Killer Use Case” 1: Step-by-Step Instructions

• With AR:
  • Interactive AR app makes it easy to access information about the machine and its functions
  • The correct manual for the particular machine, and just the context-relevant information, is presented
  • Interactive Step-by-Step guidance for setup, operations and maintenance procedures can be given

  ↓ 30% Reduction in installation time
  ↓ 20% Reduction in errors / rework

• Without AR:
  • Service Technician has to bring a very large printed setup manual to configure the machine
  • Clinician needs to consult printed manual and standard operations guides for machine setup and maintenance

  ↓ 30% Reduction in installation time
  ↓ 20% Reduction in maintenance time
  ↓ 20% Reduction in procedure setup time
Enterprise “Killer Use Case” 2: Remote Assistance

• With AR:
  • Remote Assistance allows the field service technician to call upon an expert at a back office
  • Expert and Field Service Technician will both see the same video stream on-site
  • Both can make AR drawings and annotations on top of the scene, and communicate via audio call at the same time

• Without AR:
  • Service Technician in the field running into a problem has to phone home office for help, or go out for another visit to bring an expert to help resolve an unexpected situation

Reduction in rework - “get it done correctly the first time”
Reduction in travel for experts 70%
25%
# Auxiliary Enterprise Use Cases

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Reporting and compliance</td>
<td>• Track status and compliance to management, e.g. for maintenance, checkup and current status</td>
</tr>
<tr>
<td>Order replacement parts</td>
<td>• Allow customer staff to order replacement parts for machines</td>
</tr>
<tr>
<td>Order consumables</td>
<td>• Allow customer staff to order consumable supplies for machines</td>
</tr>
<tr>
<td>Inventory management</td>
<td>• Manage location and inventory of equipment</td>
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<tr>
<td>Training</td>
<td>• Training mode for complex machine operations</td>
</tr>
<tr>
<td></td>
<td>• Explore the parts of the machine and their functions</td>
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MOBILIYA
AUGMENTED
REALITY SERVICES
### End-to-End expertise for Augmented Reality solution development

#### AR Strategy and Planning
- Define strategy, define use cases
- Capture “best practice” workflows

#### AR Proof-of-Concept Projects
- User Experience Design
- Implementation of POC

#### AR System Integration and Development
- AR App development across mobile, tablet and smart glasses
- Content Management Portal & Enterprise ERP integration

#### AR Pilot Rollout Support
- Support adoption process with usage monitoring, feedback gathering, analytics review and incremental product changes

#### AR Content Creation
- Conversion of documentation, standard operating procedures, user manuals, training materials into AR-consumable content
- 3D model creation & sound production

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