Internet of Things: Prototype Challenge

Challenge: Quality Control Lab 4.0
The Challenge

In the pharmaceutical industry, it's essential to meet all quality and regulatory requirements in every corner of your business structure. The Quality Control Labs testing the finished products before they're used to help patients are often the core of avoiding any kind of failure.

In many companies the QC labs are mostly operated manually by users. The received data out of test/sample results is manually transferred in between the testing devices and systems. This situation isn't very user-friendly nor does it avoid human errors.

The challenge created for this 'Internet of Things: Prototype Challenge' is to improve the situation in QC labs and to create a vision of the 'Quality Control Lab 4.0'.
The Personas

Uhura --- Quality Control Scientist

"Currently I have to enter redundant information, why?"

*Responsibilities:* Record sample based test results

*Main Goals:* Streamline process; Remove redundant actions

*Needs:* Possibility to enter test results with output from testing machines

*Pain Points:* Multiple systems in lab; same data to be entered multiple times for each test

Spock --- Quality Assurance Analyst

"I need details about the test results. If possible, consolidated"

*Responsibilities:* Decide if product can be released based on results.

*Main Goals:* Receive information to be able to release product fast

*Needs:* Overview about testing results; In case of deviations, possible actions

*Pain Points:* No consolidated report; all results provided in a different format by test type

James T. Kirk --- Quality Supervisor

"Our current process is cumbersome! I don't have any transparency."

*Responsibilities:* Avoid delays with product releases at low costs and high quality

*Main Goals:* Keep employees and management happy by balancing cost, quality, time

*Needs:* Monitoring about business operations in his QC labs

*Pain Points:* Doesn't know what happens in his business and work flow.
Point of View

Uhura's Point of View

As a
   Quality Control Scientist
I need a way to
   record my sample based test results
so that
   Quality Assurance has all information they need to release the product.

Spock's Point of View

As a
   Quality Assurance Analyst
I need a way to
   release the finished product batch based on the test results
so that
   we can sell our high quality product as quickly as possible.

Kirk's Point of View

As a
   Quality Supervisor
I need a way to
   ensure that our business operations
so that
   my department operations are in time, at low costs and at high quality.
# User Experience Journey

This User Experience Journey represents the current process:

<table>
<thead>
<tr>
<th>Action</th>
<th>Mindset</th>
<th>Feeling</th>
<th>Touch Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter the QC Lab</td>
<td>&quot;Let's get this done quickly, so that I go on with my more exciting project!&quot;</td>
<td>:-)</td>
<td>Product to be tested</td>
</tr>
<tr>
<td></td>
<td>&quot;Will this product pass my tests?&quot;</td>
<td>:(</td>
<td>Testing instruments</td>
</tr>
<tr>
<td>Start testing instruments</td>
<td>&quot;Why is this one instrument always so slow?&quot;</td>
<td></td>
<td>Fancy lab clothes</td>
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<tr>
<td></td>
<td>&quot;Wow - this product needs a lot of different testing procedures.&quot;</td>
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<td></td>
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<tr>
<td></td>
<td>&quot;I love doing the scientific tests!&quot;</td>
<td></td>
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<tr>
<td></td>
<td>&quot;Yes, this is the result I expected from the product.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wait for instr.</td>
<td>&quot;Why do I have to manually enter the instrument data into the system?&quot;</td>
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<td></td>
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<tr>
<td>Make sample ready</td>
<td>&quot;This is boring...&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review testing procedures</td>
<td>&quot;The provided data is in many different formats and I always have to interpret them.&quot;</td>
<td></td>
<td></td>
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<tr>
<td>Start testing</td>
<td>&quot;This product can be released.&quot;</td>
<td></td>
<td></td>
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<tr>
<td>Perform tests</td>
<td>&quot;This product can be released.&quot;</td>
<td></td>
<td></td>
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<tr>
<td>Track results on paper</td>
<td>&quot;The provided data is in many different formats and I always have to interpret them.&quot;</td>
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<td></td>
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<tr>
<td></td>
<td>&quot;This product can be released.&quot;</td>
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<tr>
<td>Record test results to Quality Assurance</td>
<td>&quot;The provided data is in many different formats and I always have to interpret them.&quot;</td>
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<tr>
<td>Perform decision if product can be released</td>
<td>&quot;This product can be released.&quot;</td>
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</tr>
<tr>
<td>Release product</td>
<td>&quot;The provided data is in many different formats and I always have to interpret them.&quot;</td>
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</tbody>
</table>
Mock-up

Mock-up created in BUILD. Please follow [this link](https://standard.build.me/prototype-editors/api/public/v1/snapshots/b317a48470b8e3500e202ad6/artifacts/latest/index.html#/launch_page) to check it out or copy and paste this link manually:


Some screenshots in case the link doesn't work or you don't have an account:

Launch page

![Launch page screenshot](image)

Reagent cooler

![Reagent cooler screenshot](image)
Clinical Biochemistry Analyzer

Notifications