# SERVICE PROVISIONING



## Business Area

Service Provisioning is a key activity within the Deployment Management process within the telecommunication industry. The nature of these activities should be very predictable and standard, but there are often many components and systems involved. Besides that, depending on the type of customers you're serving, there might be a lot of non-standards involved, tailored per customer.

## Main Challenge

Using a specific example within the Telecom industry. The client was monthly manually provisioning over 3000 IP devices including backend, shipping them to side, activating the service and doing the handover to the customer. Not to forget that all backend systems like CRM, CMDB and another 4 applications had to be updated perfectly to avoid any issues later down the line once the services were fully operational.

One of the reasons why this telecom company couldn't go for any existing solution on the market, was that they required a high amount of customization on the configurations and they wanted it to be as close to the existing process as possible. Especially the need for backend system integration meant that the solution provided had to be a workflow running on top of the existing solution already in place. **The other challenge** that they wanted to be resolved was the ability to ship a device to the location, without the need for an engineer to go on site as well, unless this was required by the customer as a professional service. The customer onsite should be able to simply plug in the device and once basic connection was setup, the orchestration in place would take care of the rest of the provisioning. This would save both costs and the need for engineers centrally to be scheduled to activate the service.

## Solution Needed

**The required solution needed to cover at least the following key stages of the provisioning:**

**Base Configuration:** The ability to prepare a base configuration for different type of devices based on different access methodologies and providers. The ability to assign automatically an IP address to the new devices from the CMDB.

**PE Configuration:** The ability to prepare the core network for the new customer device to be connected. This involves changes to the core configuration on a line item basis, a very sensitive operations that in case it would fail, it could case a major network incident.

**Service Monitoring:** The solution needed had to automatically detect any valid device to be connected to the network, triggering automatically the next step in the process without any human intervention.

**Final Configuration**: The ability to first of all create a final customer configuration based on the customer specific requirements, store the configuration in multiple places and when the base service would become available, automatically push the final configuration to the device

**CRM integration:** The entire process was managed through a CRM solution. The CRM solution was using tasks assigned to different team to perform actions, for example to order hardware, to prepare configurations or to activate the service. All the KPI reporting was based on this CRM system and well established. The customer didn't want to make any changes to this part of the process, meaning that the solution had to both retrieve and update the CRM system based on the step as part of the workflow.

**CMDB integration:** The role of the CMDB was very important, because most of the technical allocation of specific configuration items as part of the service where managed from there, e.g. the VRF and IP address allocation. Also the structure of the service and monitoring was trigger for this single CMDB solution.

**Security integration:** In case of any encryption requirements but also the simple need to protect the devices automatically using a password tool was managed via a central security solution. The provisioning solution had to seaming less integrate with this. Without the risk of break the device.

**Customer Communication:** One of the key benefits the customer wanted to achieve with providing an automated and orchestrated provisioning solution was also the customer communication. The ability to guide the customer close to real time along the way based on every step taken. This through a combination of sms, email and portal driven updates.

**User Interface:** Due to the fact that the CRM system used was not very user friendly, it was required to develop a internal user interface on top of the existing. Because the client didn't want to do end to end full automation from day want, but wanted to leave a part of the control with the internal users, they asked to create a workflow solution that only required the user to verify information and approve it as part of a step within the workflow

## Solution Provided

Robot ICT provides a reliable, innovative and scalable solution using their own DNA framework.
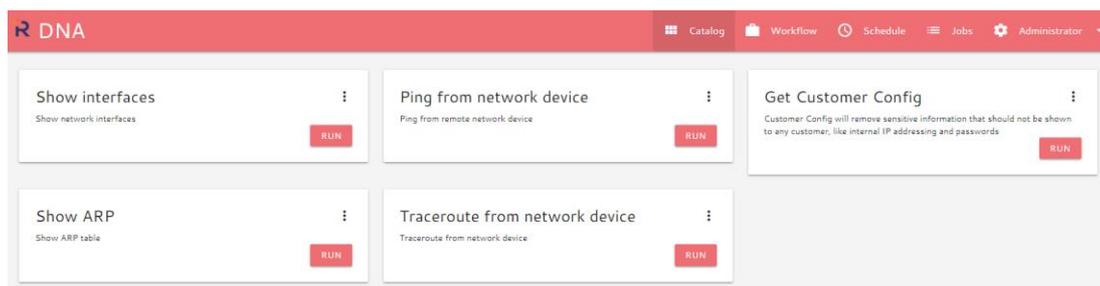


**The generic solution can be deployed in a short period of time and is using industry standard backend systems.**



With the solution we or the client can build workflows based on existing modules, but also can create new modules that can be included in a workflow. The workflows can for example represent a part of the provisioning process. For example the generation of a configuration, both basic and final, can be done through a workflow. Pushing the configuration to the device can be a module, but could also be included in a bigger workflow. This means that both workflows and individual modules can be trigger at any point in time.

Triggering a workflow can be done using an API, making it easy to integrate any workflow as part of any existing (CRM) system or process. Robot ICT also provides a portal as part of the solution where workflows can be triggered with a granular ability on user rights. For the provisioning project it was requested to develop a customer specific workflow portal, representing all the stages of the process.

**Robot ICT developed a solution that:**

**Backend**

- Very high performing backend using open source technology, making it easy to build complex and high demanding algorithms and processes, without the potential that a high amount of transactions would slow down the application for the user.


innovation for tomorrow

- An easy scalable solution is used to ensure that any specific network can easily be included as part of the application, while it would still have its own syndic to execute network commands.
- Integration with other platforms such as CRM, CMDB, CMS, etc. The ability to easily extend this using API's and where not possible RPA.

**Frontend**

- Open Source technology based on Node.js front end
- Web-Sockets, a next-generation bidirectional communication technology providing a real-time web application
- Cross platform capabilities, meaning the ability to place the solution as a native app into the App stores, using Cordova technology
- Ease of use making it easy to build and deploy new features

These are just some of the key features that we cover developing the solution.

Besides this, there are some additional things that were provided as part of the project

**Agile development**

- ✓ Using an agile development strategy, the customer requesting the application can easily list the features and prioritize them as part of the build plan.
- ✓ All part of how the solution is built supports this strategy of development and deployment.