Mobile Connectivity Canvas

The Crucial Dimensions of Any **Mobile Connectivity Strategy**

DIGITAL **OXYGEN**
Management Consultants

Basic Connectivity
Requirements

Type of Connectivity
- M2M IoT
- Mobile Consumer IoT
- Human Connectivity

"Mobile Consumer IoT": The end-user manages and pays for the connectivity of their consumer IoT devices themselves: The Apple Watch shows the potential of this still uncharted market.

Supported Devices
- Smartphones
- Tablets
- Industrial IoT Devices
- Consumer IoT Devices
- Vehicles

Industrial IoT ranges from heavy machinery to smoke detectors. Compagnon devices like the Apple Watch are included in „Consumer IoT".

Services
- Voice
- Data
- Text Messages

Geography
- Local
- National
- Multi-National
- Global

- Cross-Border Usage

Device Deloyment / Location
- Mobile
- Fixed Location
  - Deployment Deep Within Structures

Available Power Supply
- Fixed Power Supply
- Battery (Chargeable)
- Battery (Non-Chargeable)

Connectivity Priorities
- Speed
- Costs
- Coverage
- Latency
- Bandwidth
- Quality (Reliability/Stability)
- Security

Technology Support
- 2G/3G/4G
- LTE-M
- Narrowband IoT
- 5G
- Private Networks

And a variety of more technology options.

SIM Card Technology
- Physical SIM Card
- eSIM
- iSIM (Upcoming)

Connectivity Usage
- Bootstrap
- Scheduled/Triggered
- Active/Permanent Connectivity

How you use your connectivity will affect the commercial conditions offered by connectivity providers and can have regulatory implications.

Processing Capabilities
- Low Processing Power (e.g. Sensors)
- High Processing Power

Depending on your use case, it is important to know if e.g. pre-processing or storing of data can be done on-device.

Product And Usage
Requirements

Target Users
- B2C End-Users
- B2B End-Users
- M2M End-Users

"M2M end-users"? Every connectivity solution has at least one end-user, most have multiple. Even M2M IoT solutions.

Onboarding Experience
- Preinstalled Full Connectivity
- Preinstalled Bootstrap Connectivity
- Physical SIM Card Delivery
- eSIM Profile via QR Code
- eSIM Profile via In-App Download
- eSIM Profile via Discovery Server
- eSIM Profile Download via SM-SR

The "Onboarding Experience" describes the process of getting connectivity on a device. It affects your CRM and/or device management processes, the required technology, and even your relation to the device OEM.

On-Device Branding
- None
- Own
- Connectivity Provider
- White Label

If you want your own branding or even resell your connectivity impacts your SIM profiles, your app, OEM relations, and go-to-market timeline.

Product Horizon
- Short-Term Connectivity
- Long-Term / Future-Proof

Being ready for technology changes is essential, especially for connecting M2M IoT devices, as they are usually much longer in use than consumer devices.

Target User Pain Points
Irrespective of any derived requirements: **What are the exact problems** that you are aiming to solve for your end-users, their clients, or your own business?

Target Connectivity Experience
The more you know about the **experience you want to provide** or support with connectivity, the easier it will be to make it happen.

Personalization Requirements
Are there any **personalization requirements** for your devices and their connectivity? E.g. the need to transmit and store credentials to ensure the **identity** of a certain device?

Forecast
- User Base Development
- Service Consumption
- Revenue Projection

Business
Requirements

Connectivity Objective
- Revenue Increase / Generation
  - Add / Launch Connectivity Proposition
  - Extend Customer Base
  - Increase Connectivity Quality
  - Enable Revenues With Connectivity
- Cost Reduction
  - Connectivity Cost Reduction
  - Infrastructure And Service Cost Reduction
  - Process Cost Reduction
  - Increase Negotiation Power
  - Enable Cost Savings With Connectivity

There are plenty of reasons to care about connectivity, but mostly they boil down to enabling or realizing cost reductions or revenue increases.

Connectivity Business Model
- Use Connectivity Yourself (Enabler)
- Sell Own Connectivity Offer
- Retail Others' Offers
- Enable Others To Sell Connectivity

Connectivity Revenue Streams
- No Direct Connectivity Revenues
- Pre-Paid
- Post-Paid

- Revenue Share
- Connectivity Plus Margin
- Recurring Service Fees

You can create revenues from more than just the connectivity itself: E.g. as an MVNO or MVNE.

End-User Connectivity Pricing
- Free / Own Connectivity Usage
- Local Connectivity Prices
- Price Breaker
- Premium

Commercial Preferences
- Upfront Invest (CAPEX)
- Operational Costs (OPEX)

Flexibility Preferences
- Contract Runtime
- Connectivity Provider Independency
- Technology Provider Independency

Regulation
- KYC
- Data Privacy
- Registration And Certification
- Permanent Roaming
- Country-Specific Regulation
- Number Portability
- Emergency Calling
- Lawful Interception

Especially for global connectivity, regulation might cause some head-ache: China doesn't like the eSIM, Brazil doesn't like permanent roaming, KYC is especially strict in Germany.

Infrastructure Ownership
- Own Connectivity Infrastructure
- Own Some of It
- No Own Infrastructure

Implementation
Conditions

Budget Constraints
- Proof-of-Concept
- Setup
- Operations of Connectivity Solution
- Connectivity Costs
- Customer Acquisition Costs

Time-To-Market Requirements
- Target Timeline For Proof-of-Concept
- Target Timeline For Commercial Launch

Existing Resources And Assets
- Project And Vendor Management
- App Development
- Technical Integration
- Maintenance
- End-User Support

Existing Relations
- Integration Partners
- MNOs / MVNOs / MVNEs
- Connectivity Hardware OEMs
- RSP Vendors
- Connectivity Management Providers
- Regulators (GSMA, ITA)

For landscapes of vendors in the fields of **eSIM Connectivity** and **Mobile IoT Connectivity**, visit www.digital-oxygen.com/publications.

Project Priority
- High Strategic Importance
- Unclear / In Evaluatioin
- Low Priority

Existing Connectivity Solution
- Already Supported Services
- Existing Connectivity Infrastructure
- Current Cost Structure
- Runtime of Existing Contracts

Control of Connectivity Chain
- None
- SIM Card / eUICC
- SIM Profiles
- SIM Applets
- Connectivity Hardware (Modules)
- Devices To Connect
- RSP Solution
- MCC / MNC And IMSIs
- Core (PGW, HLR/HSS, Cell Tower)

The more you are in control of different components in the connectivity chain, the more flexibility you have: From cherry-picking between standards to connectivity optimization.

- **Connectivity Decisions** You Have To Make
- **Important Information** You Need To Gather
- **Connectivity Priorities** You Have To Define
- **Implementation Conditions** You Need To Consider

The **Digital Oxygen Mobile Connectivity Canvas** structures the complex set of questions, decisions, and information as a **starting point** for any **mobile connectivity strategy**. Each dimension will influence the **architecture**, **technical requirements**, the **partner selection**, economic **feasibility**, **time-to-market**, and required **effort** for your **connectivity solution**.

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