

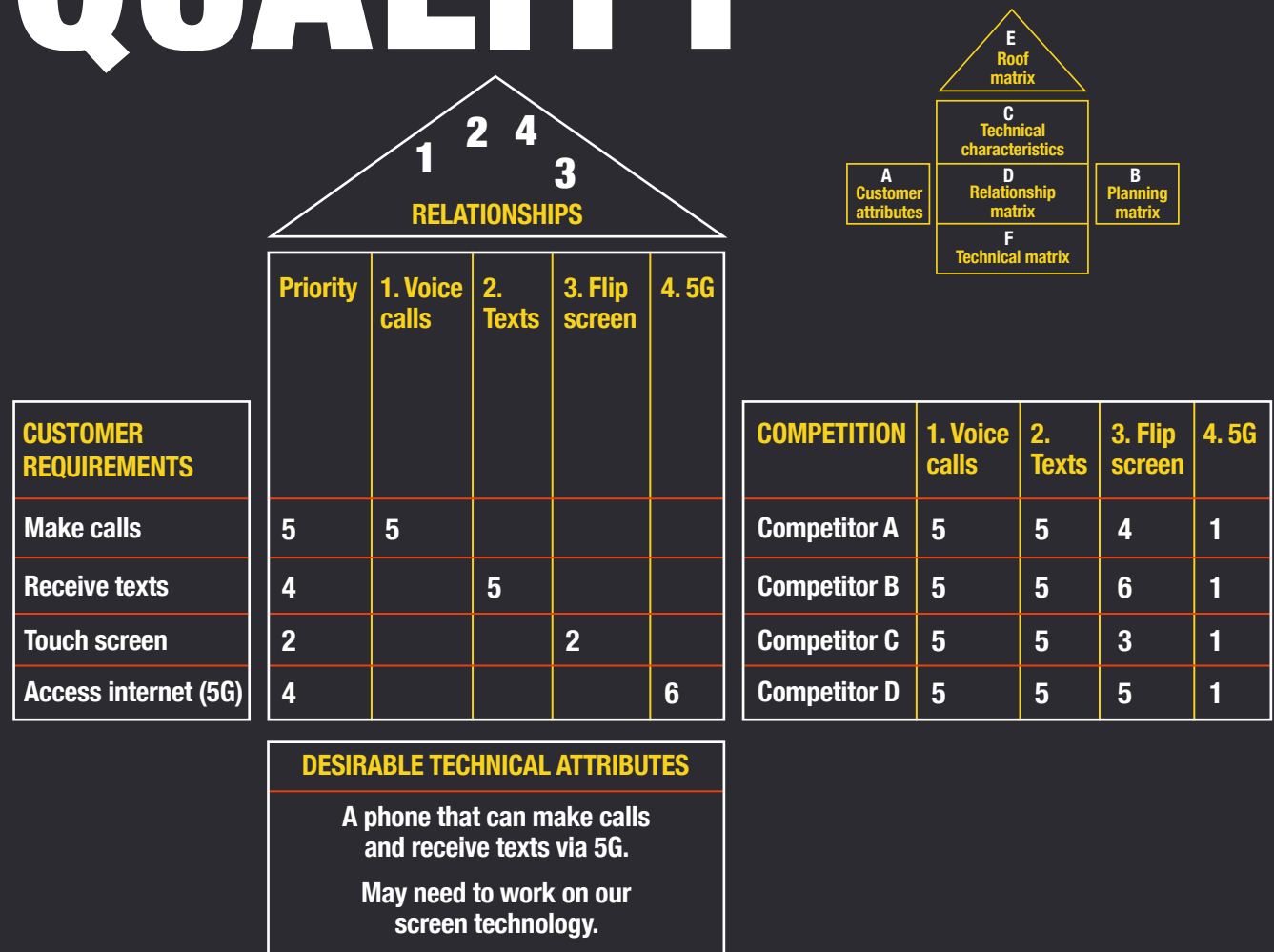
HOUSE OF QUALITY

WHAT IS IT?

House of Quality, also known as the 'Quality Matrix', is a tool used for planning product development. It is used to show how customer requirements are translated into a company's operations and the ways they can be achieved. This structured approach engages all key stakeholders to facilitate group decision-making, ensuring all requirements are built into the design.

WHEN AND HOW CAN I USE IT?

House of Quality diagrams are used during Quality Function Deployment (QFD) – a planning process used for defining customer needs/requirements for product delivery. The diagrams, drawn in the shape of a house, are used when companies want to define customer requirements and to produce detailed engineering plans. Technical and competitive benchmarking data are used to allow products to be prioritised and the optimum characteristics to be selected, thus improving customer satisfaction.



DID YOU KNOW?

The House of Quality approach was first used by Mitsubishi Heavy Industries (mhi.com) in 1972 as part of the design process for an oil tanker.

CASE STUDY

A global analytics company used House of Quality in a study of seawater pre-treatment technologies. The aim was to analyse which of the technologies was the most adequate.

The company started by collecting data on their clients' demand for water quality (odour, colour and taste) and translating it into technical water characteristics such as hardness, pH, and chlorine. This application showed which aspects of the assessed technology could be improved, based on the clients' feedback.

This presented an improvement to design – an operative seawater pre-treatment process using dissolved air flotation (DAF) technology.

STEPS

- 1 The design engineers and marketing team establish the product's critical customer attributes (A) and group them into categories.
- 2 Next, the teams must analyse the customers' perceptions of their company's existing product and compare it to the company's competitors to identify market risks/opportunities in the 'Planning matrix' (B).
- 3 The quality, marketing, design and finance teams are then tasked with establishing the main design parameters (C) for driving product performance, which should be linked to the attributes.
- 4 They must then complete the 'Relationship matrix' (D), using each cell to demonstrate how the design meets customer requirements by introducing a score system (one being the lowest).
- 5 This is followed by analysing the interactions between the design attributes (C) and adding them to the 'Roof matrix' (E). The most important parameter(s) should be listed towards the top, and the less important ones at the middle/bottom.
- 6 The teams will then work together to draw out the technical attributes (F) - those with strong relationships to customer needs or strong selling points - and summarise the actions that are needed for the new product to meet customer requirements (A).
- 7 Decision Program Charts (bit.ly/2BAYLUy) are then used to ensure everything works, followed by an Arrow Diagram (bit.ly/2XZ1jDo) to create an implementation process.