# Vodafone Group PLC

Vodafone Group PLC is a global telecommunications company based in Newbury, UK. It was founded in 1982 and has since become one of the largest mobile networks in the world, with over 300 million customers in 21 countries. It was the first mobile carrier to send a text message in 1992, the UK’s first to make a mobile phone call in 1985, and the first to make a 4G phone call in 2014. Aside from mobile phone services it also offers fixed line ADSL broadband, Gigabit broadband, mobile broadband, 5G broadband. and consumer internet-of-things devices (CIOT). Vodafone provides services to businesses and personal consumers, and its operations are split into dedicated teams, serving either businesses or consumers.

Sales and service are carried out over the phone, over live-chat, or in a retail store. All sales advisers use the same customer relationship management (CRM) software which enables Vodafone to provide omni-channel service. This means products purchased through any sales channel can be dealt with the same in any of the other channels.

Information systems play a crucial role in Vodafone’s operations. There exists a dedicated stock management software which is used to manage inventory in retail stores and warehouses. Stock is allocated to stores based on predicted demand and shipped on a daily basis. Stock is recalled on a monthly basis in order to redistribute it across the estate based on demand trends as well as forecasted demand.

The CRM software is linked to the stock management software, enabling products to be reserved, sold, and removed from stock as part of a sales order, and then allocated to that customers account. The CRM integrates with many different systems, such as the credit assessment system, the mobile service provisioning system, and Openreach’s broadband system which allows Vodafone to sell broadband provided using Openreach infrastructure, although in the UK Vodafone owns a large part of its broadband network thanks to its acquisition of Cable & Wireless in 2012.

Other information systems include their scheduling software where an employee’s working shifts are entered. This system then links into the payroll system which automatically sends the payment to the employee’s bank account. Vodafone also carries out data analytics using network data in order to provide customers location-based advertising, as well as to improve their network infrastructure.

The Zachman framework of Vodafone Group PLC can be seen below:

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|  | Data (What) | Function (How) | Network (Where) | People (Who) | Time (When) | Motivation (Why) |
| Scope (Contextual) | Network Status, Financial performance, Asset management, franchise management, consumer satisfaction, market competition, sales performance | Obtain and review reporting from responsible teams and coordinate actions based of report results | Globally in 22 countries | CEO, CFO, CTO, divisional managers, regional managers, store managers, sales advisers | Throughout financial year | Provide good network service to customers, provide good customer service, provide shareholder returns |
| Business Model (Conceptual) | Entity-Relationship diagram, Semantic description of business policies and procedures | Conceptual model of sales and service, BPMN | Structure of network sites, structure of stores and warehouses and their relationships (Component diagrams, deployment diagrams) | Growth factors team, business analysts | Continually as changes to company structure are made | Give clear definitions of company structure to provide reference for executive management |
| System Model (Logical) | Conceptual design, functional and non-functional requirements | UML diagrams including use case diagrams, sequence diagrams, activity diagrams, class diagrams.  Entity relationship diagrams | Architecture of systems and interconnected systems + integration with cloud providers (AWS and Azure) | Logical Designers | On implementation of additional infrastructure or changing of architecture | Gives high level overview of actual functionality of system as well as its dependencies |
| Technology Model (Physical) | Network topology, development stack, CI/CD pipeline | Using UML models et al | Nationwide and global network infrastructure | System designers, network architects | Technology refresh cycle when swapping out old for new equipment in network | Consistency in network topology, ensuring high standards of operations |
| Detailed Representation (Out of context) | Inventory configuration, network configuration, stock configuration | Component diagrams, detailed system design + architecture diagrams | Nationwide, globally | Software Engineer | During implementation of relevant artefact | Adherence to defined requirements and business processes |
| Functioning System | Ensure network performance, provide customer service, enable sale of products and services | Network load balancing, stock management and distribution, work allocation based on business needs | AWS + Azure + self-hosted | Network Engineers, Senior Management, Software Engineers | Continually throughout financial year | Ensure continuity of business, provide return on investment for shareholders, ensure customer satisfaction |