PRINCIPAL ACADEMIC TUTOR

Francesca Montagna, Department of Management and Production Engineering, PoliTo

ACADEMIC TUTORS

Gaetano Cascini, Department of Mechanical Engineering, PoliMi

Doriana Dal Palù, Department of Architecture and Design, PoliTo

EXTERNAL INSTITUTION

Vodafone Italia

EXTERNAL TUTOR

Andrea De Mauro, Head of Data & Analytics, Vodafone

Lorenzo Quadrio, Marketing Manager, Vodafone

TEAM MEMBERS

Camilla Cecchini Saulini
Management Engineering, PoliTo

Dario Ferrari
Management Engineering, PoliTo

Paolo Basso
Computer Science and Engineering, PoliMi

DATA-DRIVEN CUSTOMER VALUE SYSTEMS

Executive Summary

The modern-day telecommunication services industry is facing a broad landscape of significant business challenges. Over the decade spanning from 2010 to 2021, the industry lost one third of its starting value, more than 14 billion euros. This downturn can be attributed to the heightened and escalating competition within a tightly regulated market, which resulted in a widespread reduction of prices without a corresponding increase in customers. Notably, prices in Italy fell by 28.5% between 2014 and 2023.

To stay competitive, companies like Vodafone are compelled to pivot towards customer-centric strategies, transitioning from conventional single-product offerings to comprehensive bundles of products and services.

The 'Data-Driven Customer Value Systems' project was conceived as a response to these pressing industry challenges. Our role encompassed a comprehensive examination of the Industry and Market, and the development familias & personas with a specific lens on the 18-30-year-old customer segment, to gain profound insights into customer behaviors, thereby establishing the foundation for innovative service proposals.

After conducting in-depth analyses, leveraging on Innovation Management models, we established a framework to develop innovative services proposals that accounted for factors such as barriers to entry, possible sources of competitive advantage, key resources & capabilities, and expected marginalities. This comprehensive approach enabled us to craft four innovative service proposals designed to address specific customer needs while being strategically valuable for Vodafone: "Vodafone Study Club", "Vodafone Wellbeing", "Vodafone Community", and "Vodafone Energy".

The Problem

The Italian **telecommunication services industry** is facing a **substantial decline in revenue streams**, particularly **in core areas** such as voice and text messaging, along with **severe competition**.

The Challenge

Reevaluate how telecommunications companies can effectively **engage and retain young customers**.

The Goal

Formulate **innovative service proposals** to enhance **Vodafone's** ability to **attract and retain young customers**.

Key Words

Data Driven CVS, Customer Behaviors, Innovation, Telecommunication Services, Young Customer Segment.

Project description written by the Principal Academic Tutor

In recent years, the telecommunication services industry has faced a substantial decline in revenue streams, particularly in core areas such as voice and text messaging, amid heightened competition. Consequently, Vodafone recognizes the need to anticipate the evolving needs of its customers in the ever-changing technology landscape. The company finds itself uniquely positioned to shape the future of customer experiences, and this project is aimed at proactively envisioning potential scenarios and presenting a range of viable propositions to expedite value creation.

Within this framework, the expected outcomes of the "Data-Driven Customer Value Systems" project encompass:

1. The identification and study of Familias & Personas pertaining to the young customer segment through qualitative market research.

2. User/customer behavior pattern recognition and quantitative market research conducted to enrich the understanding of needs and behaviors of the young customer segment.

3. A comprehensive assessment of the Technological Landscape to pinpoint opportunities for company expansion.

4. Evaluation of Vodafone's market and industry positioning in view of the technological landscape and the emerging scenarios.

5. Proof-of-concept illustrating one or more scenarios of personalization of the next generation of products and services.

Team description by skill

The team is composed of three members:

- Paolo Basso (appointed as team controller after the departure of the original team controller): currently pursuing a master's degree in computer science and engineering at Politecnico di Milano, holding a bachelor's degree in management engineering from the University of Bologna.

- Camilla Cecchini Saulini (responsible for the communication with Vodafone and the academic tutors throughout the entire project duration): currently pursuing a master's degree in management engineering at Politecnico di Torino, holding a bachelor's degree in Product Design and Communication from Politecnico di Torino.

- Dario Ferrari: currently pursuing a master's degree in management engineering at Politecnico di Torino, holding a bachelor's degree in management engineering from the University of Modena and Reggio Emilia.

Roles and responsibilities evolved significantly throughout the project, in response to the departure of two team members during the initial stages and the exit of a third member at the start of the second year. Consequently, each team member extended its commitment beyond his designated areas of expertise.

During the initial phase of the project, Paolo was responsible for conducting the industry analysis, while Camilla and Dario focused on the market analysis and the development of the current personas for each key player.

Subsequently, the team embarked on a collective effort to develop the future personas, a pivotal step in our analysis that demanded insights from all team members. This collaborative process culminated in the identification of nine macro-categories of services rooted in various technologies, each necessitating analysis to uncover potential expansion opportunities for the company. Each team member analyzed three technologies. Dario and Camilla then dedicated their efforts to crafting the preliminary service proposals that were refined thanks to Paolo's final insights.

Goal

The project, 'Data-Driven Customer Value Systems,' delved into innovation within the telecommunication services industry, specifically addressing the challenge of reevaluating how telecommunications companies could effectively attract and retain young customers.

This endeavor was approached from the perspective of Vodafone, a major incumbent in the Italian market, holding the second-largest market share, trailing only TIM. The project's directive was to conduct a comprehensive analysis aimed at formulating innovative service proposals tailored to the young customer segment.

To achieve this, the team adhered to the following roadmap, encompassing a series of preliminary objectives crucial to the attainment of the overarching and more intricate goal:

5 — Formulate innovative service proposals to enhance Vodafone's ability to attract and retain young customers.
Deliverables 6 and 7: Preliminary and Final Service Proposals

4 — Assess the technological landscape to identify opportunities of expansion
Deliverable 5: Navigating the Future of Services

3 — Study the evolution of telco young customers personas (today, in 5 &10 years)
Deliverable 4: Personas

2 — Identify and study key players current customer personas
Deliverable 3: Key Players Customer Personas

1 — Assess the industry landscape and Vodafone's position in the market
Deliverables 1 and 2: Industry Analysis and Market Analysis

Understanding the Problem

In recent years, the Italian telecommunications services sector has witnessed a substantial contraction in revenue, losing more than a third of its total value. This ongoing crisis is expected to escalate in the near future, owing to heightened competition from industry giants and the entry of mobile virtual network operators (MVNOs) employing aggressive price-based competitive strategies.

The decline in market value has far-reaching implications, particularly for end customers. Diminished profit margins within companies are likely to deter private investment in critical infrastructure. This issue is compounded by the unique Italian scenario of already substantial state subsidization of infrastructure. Consequently, this may force a reduction in the quality of services provided, trigger job losses, and create a challenging environment for fostering innovation.

In response to this complex landscape, major telecom companies are actively pursuing diversification strategies. They are expanding their service portfolios beyond traditional communication products, aiming to shift the competitive landscape towards providing enhanced value to end customers. This strategic shift seeks to shield them from the continuous erosion of sector margins caused by aggressive price competition.

Exploring the opportunities

Acknowledging the dynamic nature of consumer needs, our journey led us to explore a multitude of life domains. Our overarching goal was to unearth the evolving needs of young customers, identify their pain points, and anticipate emerging trends that could spawn innovative services transcending the conventional boundaries of telecommunication services offers.

Approaching this endeavor from the perspective of Vodafone, a prominent incumbent within the Italian market, required us to meticulously assess the company's assets, resources, and expertise to pinpoint potential sources of competitive advantage, which could be harnessed to venture beyond the traditional telecommunications sector. This discerning perspective prompted us to analyze various industries, evaluating the feasibility of Vodafone's foray into these domains and the potential returns it could generate. In this context it's crucial to recognize that the ability to attract prospective customers has evolved beyond rigid industry classifications. Large corporations are increasingly adopting diverse initiatives and projects to broaden their customer base.

Within this framework, our focus remained steadfast on the young customer segment, characterized by a proclivity for collaborative endeavors and an enduring quest for a sense of community. The needs of this specific demographic align closely with Vodafone's inherent resources. Beyond its infrastructural assets, Vodafone's capacity to facilitate connections between individuals and harness extensive data and information organically constitutes a primary source of competitive advantage. Furthermore, Vodafone's ongoing research and development efforts in algorithm development and IoT technologies for data processing and reprocessing bolster its competitive standing.

Following an exhaustive evaluation of service categories that could augment Vodafone's value for end customers, we have formulated four distinct proposals designed to address fundamental needs perceived by young individuals. These proposals, spanning education, health, leisure, and environmental segments, are intricately tied to Vodafone's existing resources and are amenable to repurposing in novel contexts.
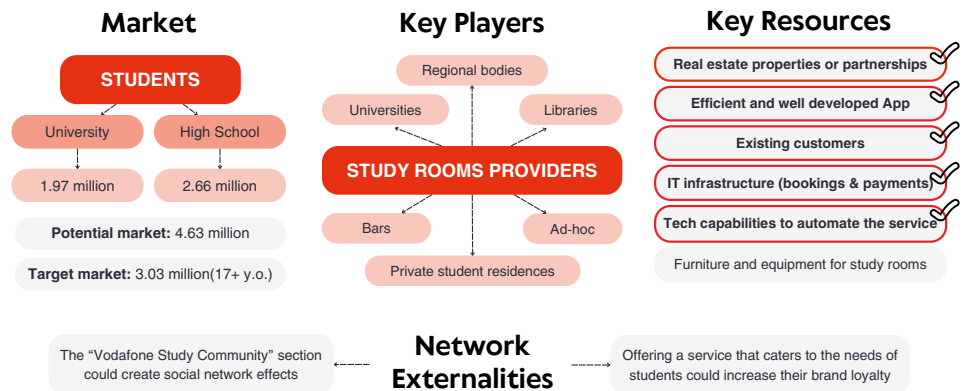
Generating a solution

Vodafone Study Club:

In recent years, housing costs in key university areas have risen dramatically forcing students to settle for cramped rented (often shared) rooms, lacking spaces to study. This, coupled with the overcrowding of universities, which leads to a massive reconversion of study rooms into lecture rooms gives rise to a big problem related to the lack of places to study. 'Vodafone Study Club' is a concept developed to address this problem, we are talking about a study room service that provides fully automated 24/7 study spaces in university districts. The service would allow students to book seats through a dedicated section of the Vodafone app, selecting the desired location and time slot. They would then pay a small per-hour fee or a fixed amount for the entire day/week/month, and receive a QR code to access the study space. The study rooms would be designed to provide a comfortable and productive environment for students, with fast Wi-Fi, ergonomic chairs, and ample desk space. The offer would also include small rooms for students to work in teams, as well as a bar that serves snacks and beverages, and printing and scanning services.

Everyone would be allowed to book, but Vodafone customers would be offered certain discounts & benefits and the possibility to access the "Vodafone Study Community", a dedicated section within Vodafone's app that allows students to connect, share study resources, and even schedule study sessions or breaks together.

This service could be launched as a pilot project in major cities with high student populations and high rental prices (like Milan, Rome, Bologna, and Turin) and then expand in other cities with a growing demand for study spaces.

Market

STUDENTS

University	High School
1.97 million	2.66 million

Potential market: 4.63 million

Target market: 3.03 million(17+ y.o.)

Key Players

Regional bodies

Universities   Libraries

STUDY ROOMS PROVIDERS

Bars   Ad-hoc

Private student residences

Key Resources

Real estate properties or partnerships

Efficient and well developed App

Existing customers

IT infrastructure (bookings & payments)

Tech capabilities to automate the service

Furniture and equipment for study rooms

Network Externalities

The "Vodafone Study Community" section could create social network effects

Offering a service that caters to the needs of students could increase their brand loyalty
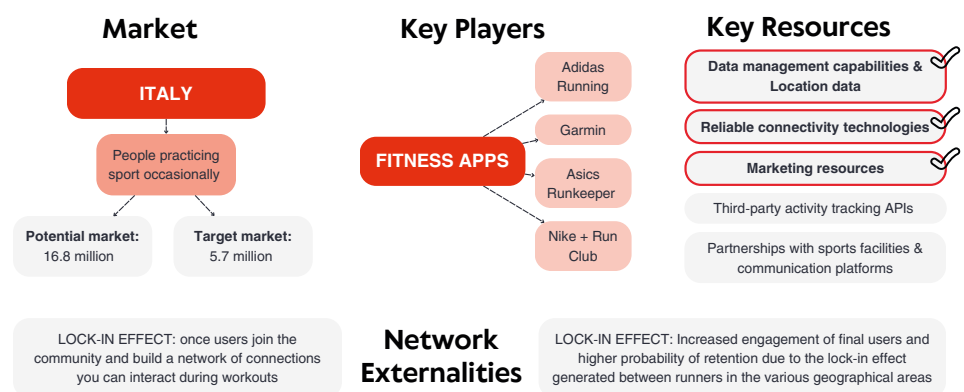
Vodafone Wellbeing:

The number of athletes who practice physical activity outdoors has increased. However, in the case of new non-competitive athletes, the number of training sessions performed drops to zero within a few weeks of starting due to a lack of motivation or training loneliness. Our Vodafone Wellbeing proposal consists in a dedicated section within the Vodafone app focused on improving users' physical and mental health. The goal is to build a community aimed mainly at non-competitive athletes, to facilitate social connections, and to allow users to find sports partners, putting the athlete in contact with others who train along the same path.

Through the amount of data collected and the progressive increase in non-competitive athletes, Vodafone could create a Community where people with similar training routines can meet up and train together.

Vodafone's ability to manage large amounts of raw data and develop aggregate data would allow it to define frequent training itineraries. In addition to a user-friendly and functional mobile application already present in over 10 million devices, this would add enormous value to the project itself right from the initial stages.

Market

ITALY

People practicing sport occasionally

Potential market:	**Target market:**
16.8 million	5.7 million

Key Players

Adidas Running

Garmin

FITNESS APPS   Asics Runkeeper

Nike + Run Club

Key Resources

Data management capabilities & Location data

Reliable connectivity technologies

Marketing resources

Third-party activity tracking APIs

Partnerships with sports facilities & communication platforms

Network Externalities

LOCK-IN EFFECT: once users join the community and build a network of connections you can interact during workouts

LOCK-IN EFFECT: Increased engagement of final users and higher probability of retention due to the lock-in effect generated between runners in the various geographical areas
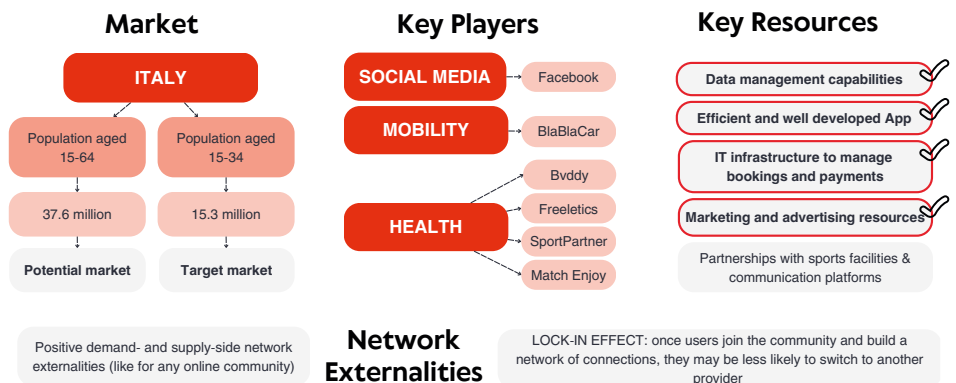
Vodafone Community:

The desire to belong to a community, whether physical or virtual, has led to the proliferation of numerous services, each accompanied by its own app with its own specific focus. This, in addition to being inconvenient and inefficient, leads to a second challenge: the one of managing many distinct applications

and platforms referring to different users and, indeed, communities. To address this problem we have developed 'Vodafone Community', an online community within Vodafone's app that encompasses 5 sections:

- Event Section: Facilitates connections among attendees of the same events, enhancing the social experience and simplifying transportation and accommodation planning.

- Travel Section: A platform for young travelers seeking travel companions, advice, and recommendations from others who have visited similar destinations.

- RideShare Section: Connects drivers and passengers for carpooling opportunities, featuring user ratings, ride matching algorithms, real-time ride updates, and potential rewards for community participation.

- Study Section: Tailored for students, enabling connections, resource sharing, and study session scheduling. It may also include affordable unlimited online meeting plans in partnership with communication platforms like Zoom or Teams to foster a network of study buddies.

- Sports Section: Allows users to connect with local individuals interested in the same sports, potentially offering options to book sports facilities or reserve fields for games.

The use of an existing platform ensures the critical mass necessary to leverage network effects upon the service's launch. Furthermore, various sections of the online community can yield cross-benefits through intersecting network effects.
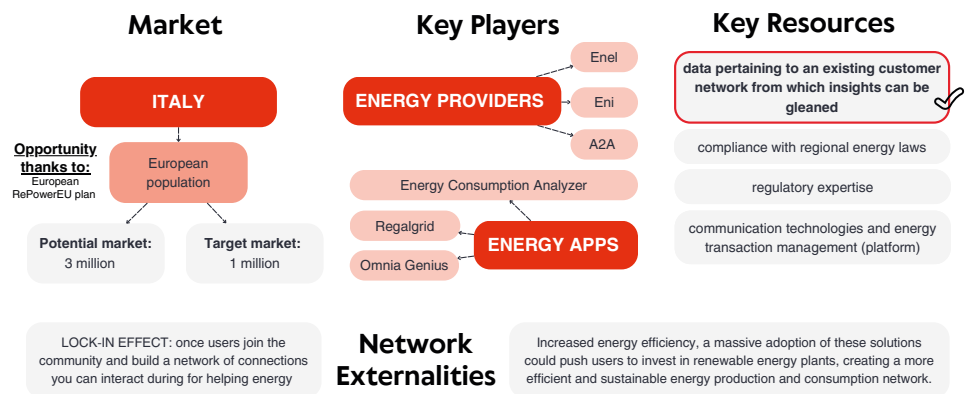

Market

ITALY

Population aged 15-64 → 37.6 million → Potential market

Population aged 15-34 → 15.3 million → Target market

Positive demand- and supply-side network externalities (like for any online community)

Key Players

SOCIAL MEDIA → Facebook

MOBILITY → BlaBlaCar

HEALTH → Bvddy, Freeletics, SportPartner, Match Enjoy

Network Externalities

Key Resources

Data management capabilities ✓
Efficient and well developed App ✓
IT infrastructure to manage bookings and payments ✓
Marketing and advertising resources ✓
Partnerships with sports facilities & communication platforms

LOCK-IN EFFECT: once users join the community and build a network of connections, they may be less likely to switch to another provider

Vodafone Energy:

As energy costs continue to rise, the demand for affordable supply sources has gained prominence. This, coupled with the growing inclination among the young generation to favor a green vision based on decarbonization led us to the design of 'Vodafone Energy'. A section of Vodafone's app designed to help people monitor their home consumptions and access an energy-sharing platform when required. The app could have several features that allow users to:

• View their consumption history over time, with graphs and charts that make it easy to visualize trends and identify areas where they can improve.

• Set a budget (or consumption threshold) for each resource.

• Share energy resources among nearby users.

It's worth underlining that Vodafone does not possess the knowledge necessary for the development of the project, we thus foresee a joint development with one of the main Italian energy providers. Leveraging on Vodafone's extensive customer base, this energy-sharing platform has the potential to rapidly achieve the critical mass necessary to exploit the initial benefits associated with network

externalities. Additionally, Vodafone can count on its efficient and effective data management system that could significantly contribute to the overall success of the project.

Market

ITALY

Opportunity thanks to:
European RePowerEU plan

European population

Potential market: 3 million

Target market: 1 million

LOCK-IN EFFECT: once users join the community and build a network of connections you can interact during for helping energy

Key Players

ENERGY PROVIDERS

Enel

Eni

A2A

Energy Consumption Analyzer

Regalgrid

ENERGY APPS

Omnia Genius

Network Externalities

Key Resources

data pertaining to an existing customer network from which insights can be gleaned

compliance with regional energy laws

regulatory expertise

communication technologies and energy transaction management (platform)

Increased energy efficiency, a massive adoption of these solutions could push users to invest in renewable energy plants, creating a more efficient and sustainable energy production and consumption network.

Main bibliographic references

ASSTEL et al. Rapporto sulla filiera delle Telecomunicazioni in Italia. 2022.

Statista. Global Consumer Survey. Aug. 2022.

Audrey Antee. "Student perceptions and mobile technology adoption: Implica- tions for lower-income students shifting to digital". In: Educational Technology Research and Development 69.1 (2020), pp. 191–194.