



ENV-470

Development engineering 2024-2025

Dr. Marc
Laperrouza

Lausanne –
April 2025

Value proposition

Customer and user-centric design

In 1 sentence...

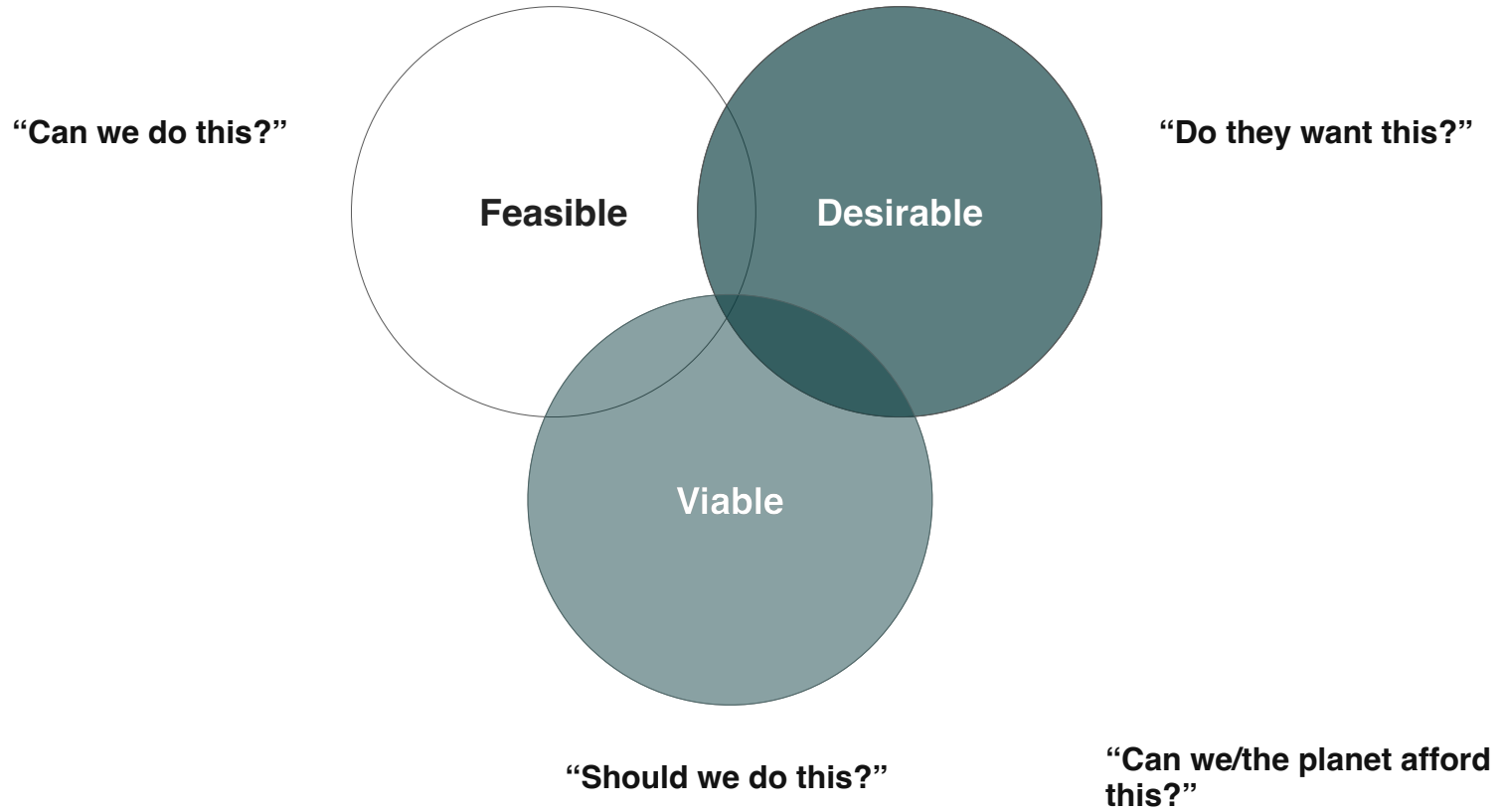
*For whom and what type of value
a product/service is going to create*

Who could this be?

What could that be?

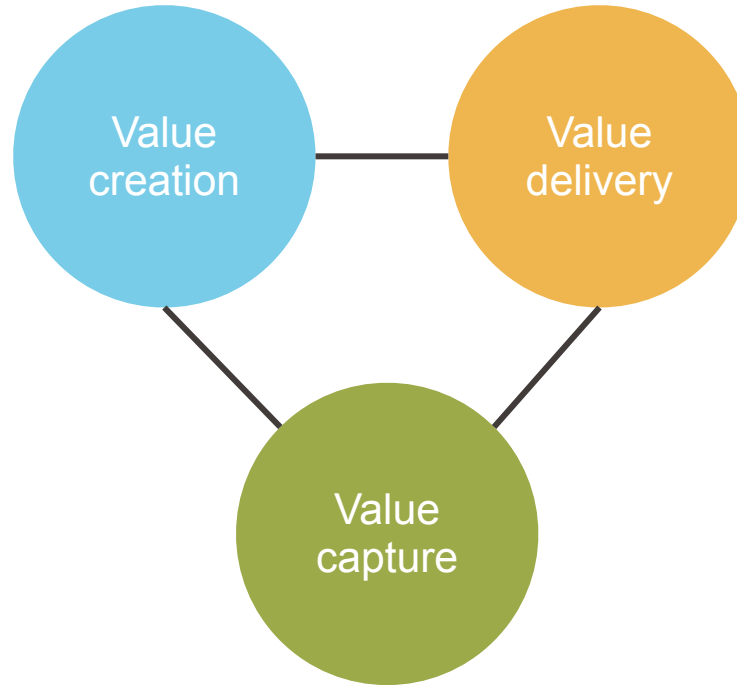


***For **whom** and **what type of value**
a product/service is going to create***



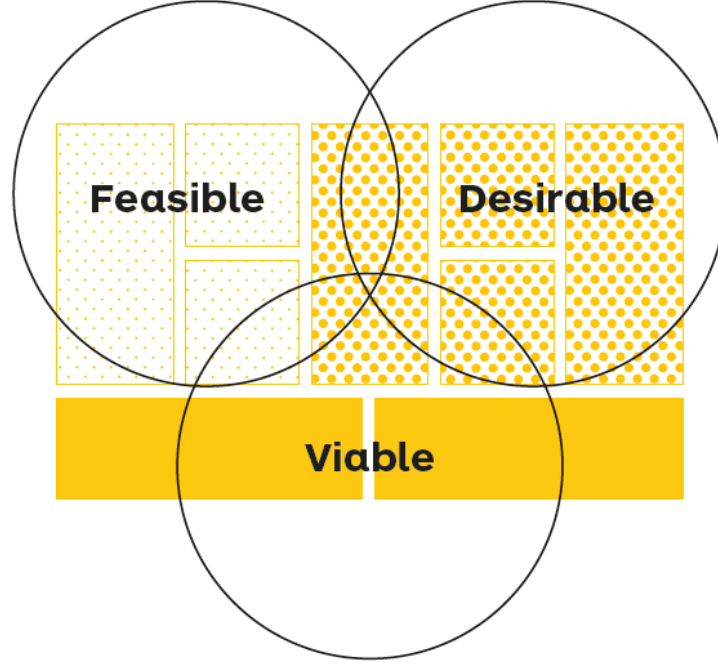
Business model

What **resources, activities or partnerships** do you need to **create products, services or platforms** that **solve problems or create benefits** for customers and/or beneficiaries

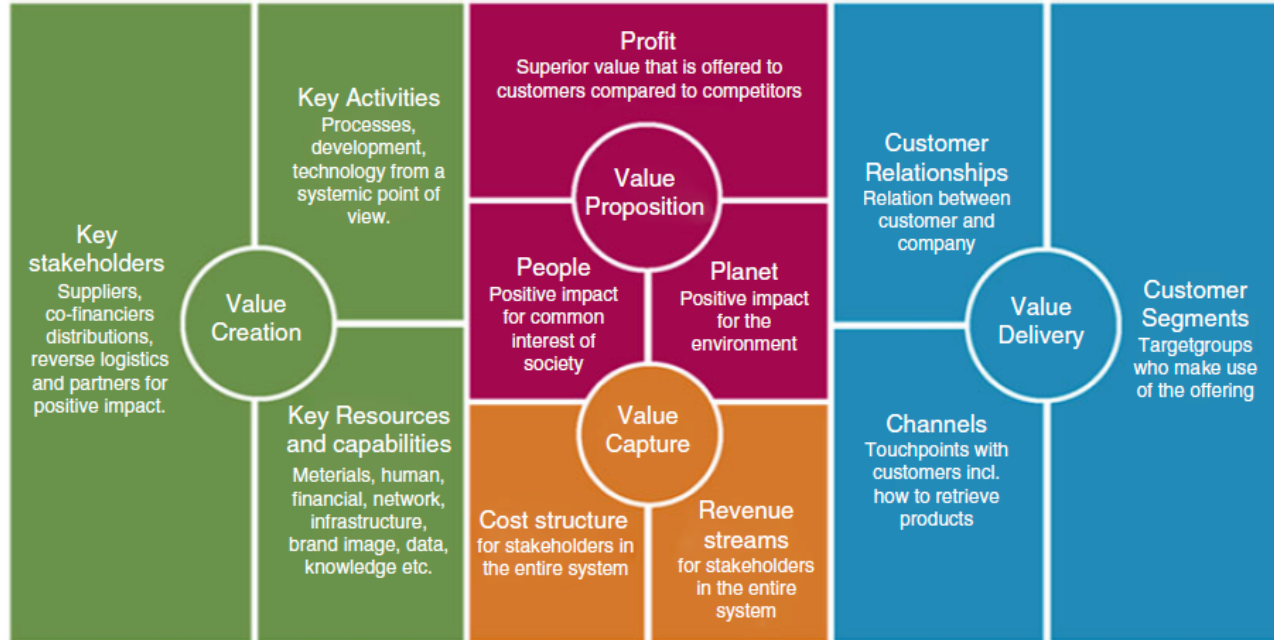


What **systems and channels** do you need to have in place to **deliver a product, service or platform** to customers and/or beneficiaries

How do you **generate revenue** from the product, service or platform offered



The pieces of the puzzle...



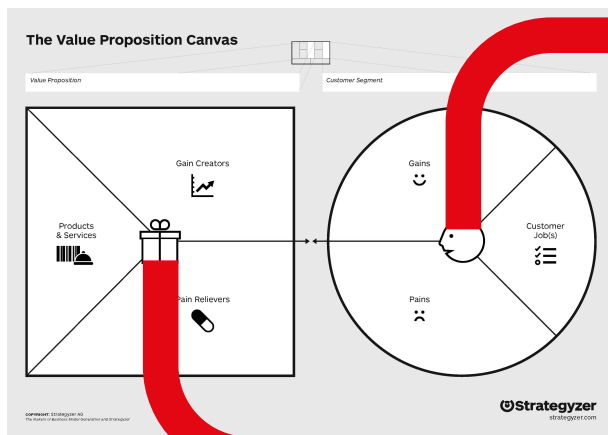
Source: Bocken, N. (2021). Sustainable Business Models. In Decent Work and Economic Growth. W. Leal Filho, A. M. Azul, L. Brandli, A. Lange Salvia and T. Wall. Cham, Springer International Publishing: 963-975.

- By the end of the session, **students** should be able to:
 - Explain the concepts of value, job-to-be-done and value proposition
 - Describe the elements and mechanics of the value proposition canvas (VPC)
 - Apply the VPC to a project
 - Integrate the VPC into a (sustainable) business model
- Exposé/discussion on **job-to-be-done** and **value proposition**
- Application of value proposition **canvas** to your project

- Introduction – 10'
- Of value – 20'
- Job-to-be-done (video + article) – 15'
- Break – 15'
- Value proposition canvas with example – 40'
- Q&A – 5'
- Break – 15'
- Project work with coaches – 90'

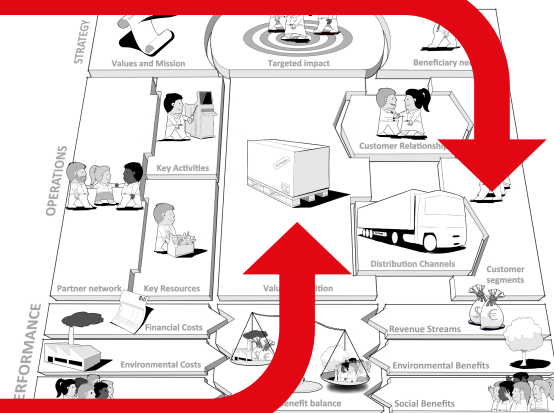
29 April

Value proposition



6 May

Business model



EPFL 2 definitions

*business model**

how you create value for your **organization**

value proposition

how you create value for your **customer(s)**

sustainable business model

how you create value for your **organization/stakeholders**

sustainable value proposition

how you create value for your **customer(s), user(s) and
beneficiaries**

Of value

“The amount and nature of value in a particular product or service always lie **in the eye of the beholder.**”

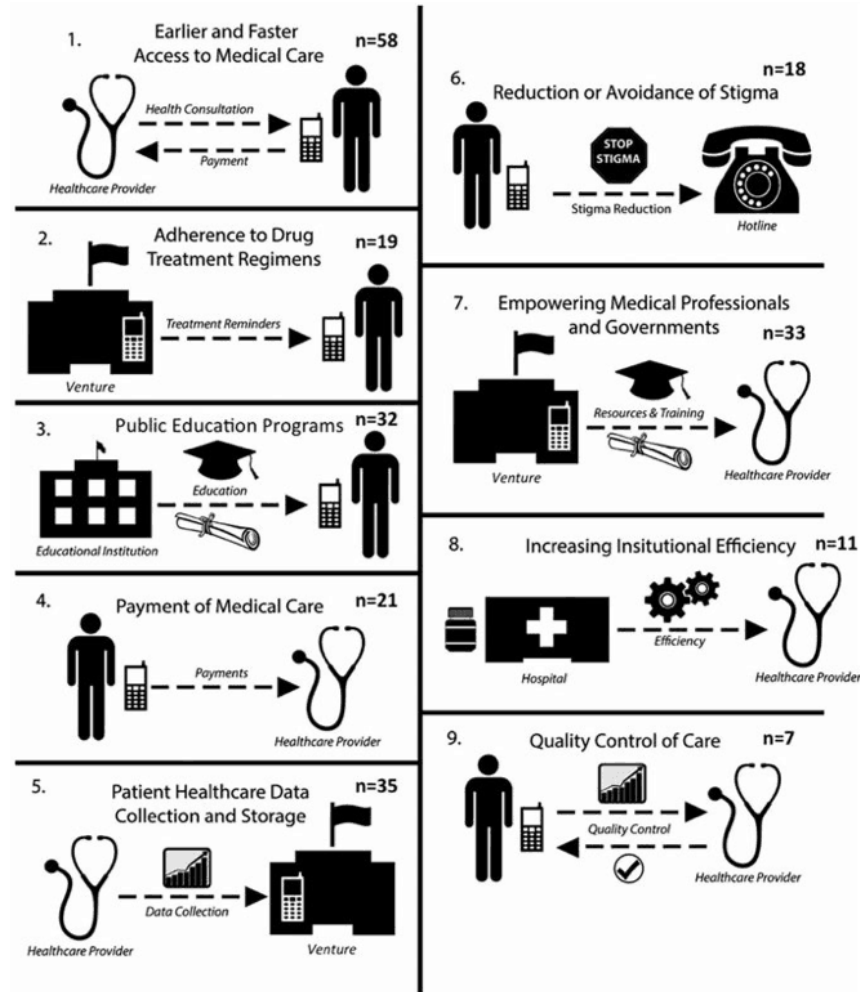
Source: Almquist, E., J. Senior and N. Bloch (2016). "The Elements of Value" Harvard Business Review 94(9): 46-92.

“...the value of a market offering is ultimately determined by the customer, and is conceptualized as a customer’s **willingness to pay** or the **benefit** the consumer experiences.”

Source: Chesbrough, H., Lettl, C., & Ritter, T. (2018). Value Creation and Value Capture in Open Innovation. Journal of Product Innovation Management, 35(6), 930-938.

definition : *use of mobile phones and other wireless technology
in medical care*

***for whom and what type of value
a mHealth project could create in the Global South***



More from: Sundin, P., J. Callan and K. Mehta (2016). "Why do entrepreneurial mHealth ventures in the developing world fail to scale?" Journal of Medical Engineering & Technology 40(7-8): 444-457.

Social impact



Life changing



Emotional



Functional



- Extension of Maslow's hierarchy of needs
- 4 kinds of need—functional, emotional, life changing, and social impact
- Some elements matters more than others
- Differences across sectors

Elements of value B2B

From more to less objective

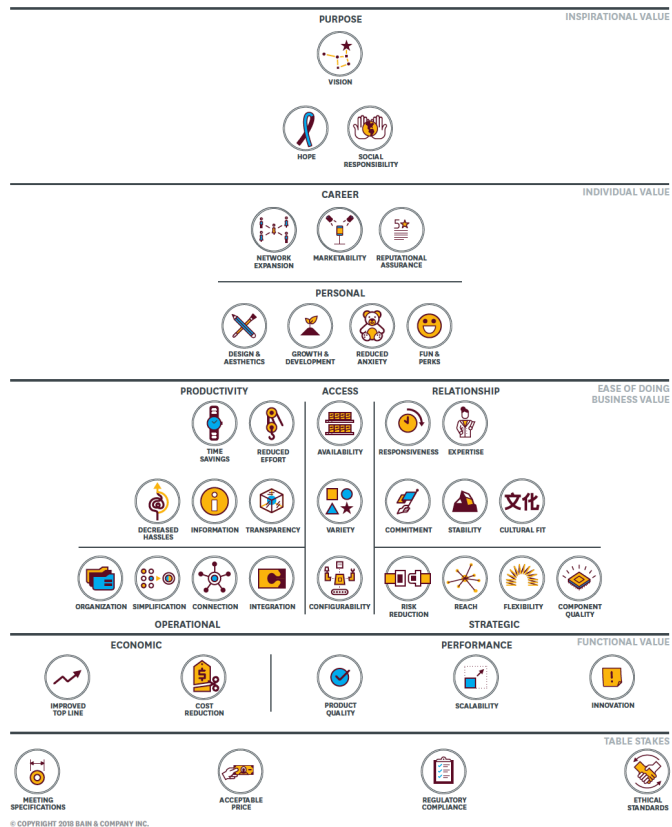


ILLUSTRATION BY NIK SCHULZ

- Table stakes are pre-requisites for being in business
- Anything above is an area for differentiation
- Some elements matters more than others (but it depends on industry)

Source: Almquist, E., J. Cleghorn and L. Sherer (2018). "The B2B Elements of Value." Harvard Business Review 96(2): 72-81.

Jobs-to-be-done

Clarifications



What did you **take away** from the article?

Some take-aways

- The **circumstances** are more important than customer characteristics, product attributes, new technologies, or trends
- Good innovations solve problems that formerly had only inadequate solutions – or no solution
- Jobs are never simply about function – they have powerful **social** and **emotional** dimensions

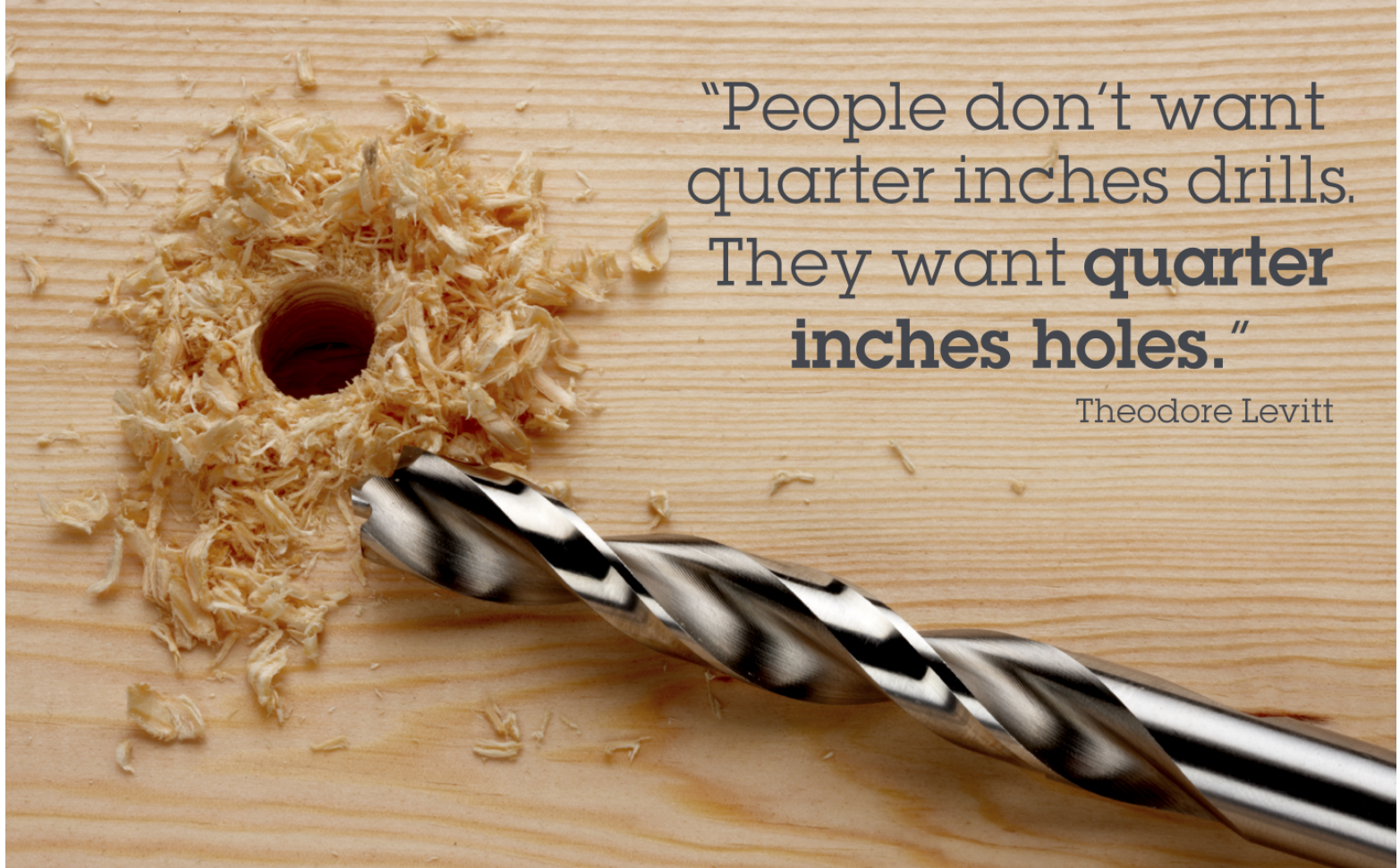


10-15 minutes

Watch the video & identify 3-4 key concepts related to jobs-to-be-done

“The focus should be on what jobs customers are trying to get done”

Tony Ulwick



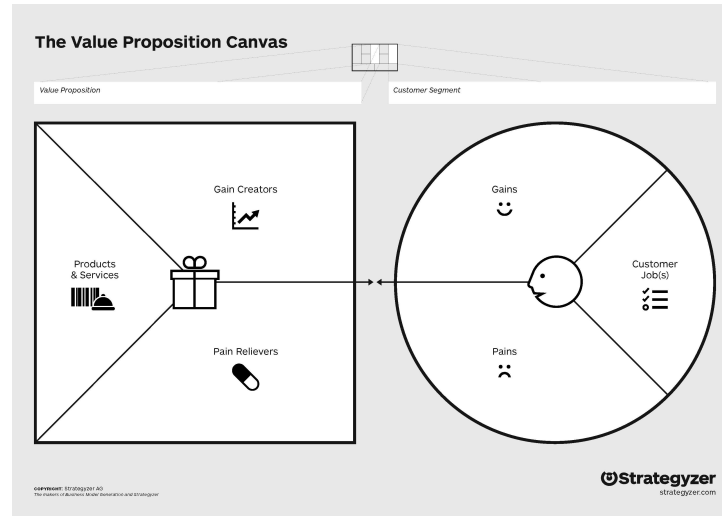
“People don’t want
quarter inches drills.
They want **quarter
inches holes.**”

Theodore Levitt

Q & A

Value proposition canvas

Clarifications



Any questions regarding the **elements** or **mechanics** of the canvas?

Value proposition canvas (VPC)

The Value Proposition Canvas

COPYRIGHT: Strategyzer AG
The makers of Business Model Generation and Strategyzer

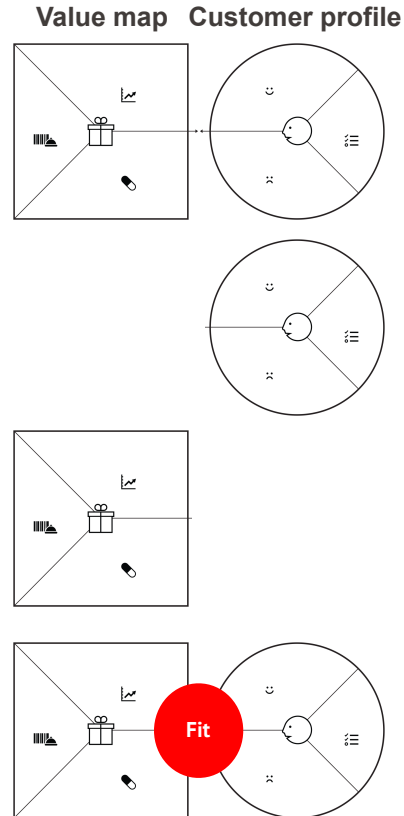
 **Strategyzer**
strategyzer.com

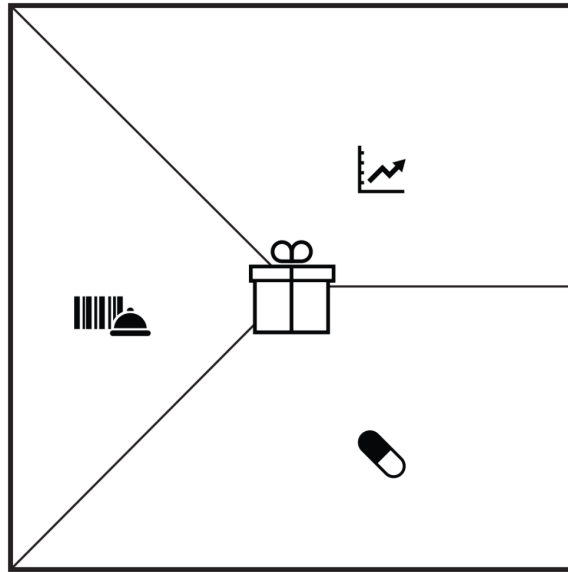
The Value Proposition Canvas has **two sides**

With the **customer profile** (right) you clarify your understanding of the customer(s)

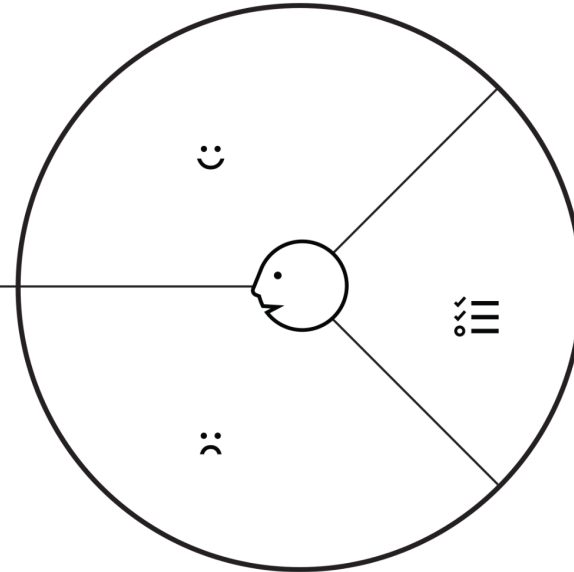
With the **value map** (left) you describe how you intend to create value for that customer

You achieve **fit** between the two when one meets the other...





Gains describe the outcomes customers want to achieve or the concrete benefits they are seeking



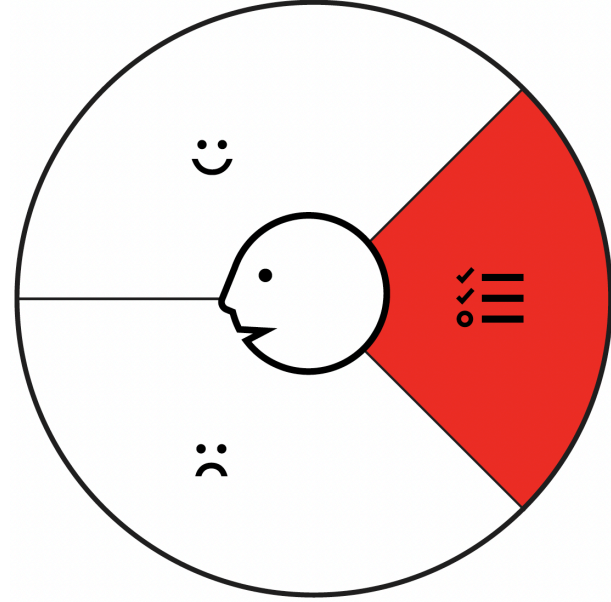
Customer jobs describe what customers are trying to get done in their work and in their lives, as expressed in their own words

Pains describe bad outcomes, risks, and obstacles **related to customer jobs**

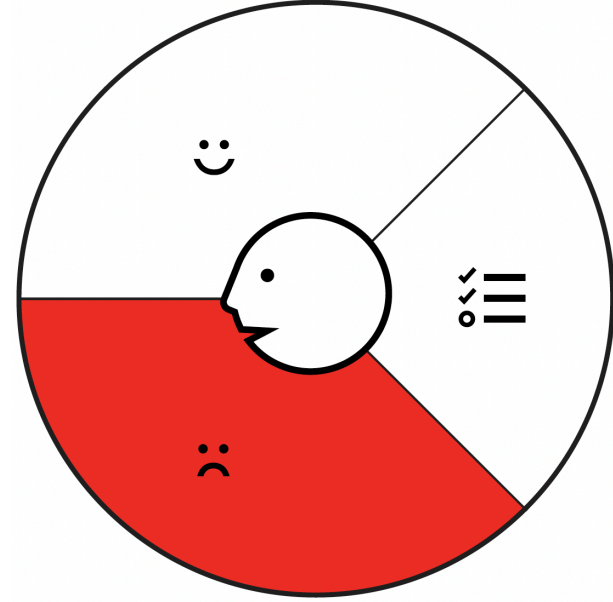
3 (+1) types of jobs

- Functional: perform or complete a specific task or solve a specific problem (e.g., write a technical report, light the house)
- Social: seek social capital (e.g., be perceived as a competent engineer, reduce intergenerational tensions)
- Personal/Emotional: seek a specific emotional state (e.g., feel good about myself, achieve peace of mind during a divorce)
- Supporting: buy, co-create or transfer value (e.g., complete a purchase, post a product review or dispose of a product)

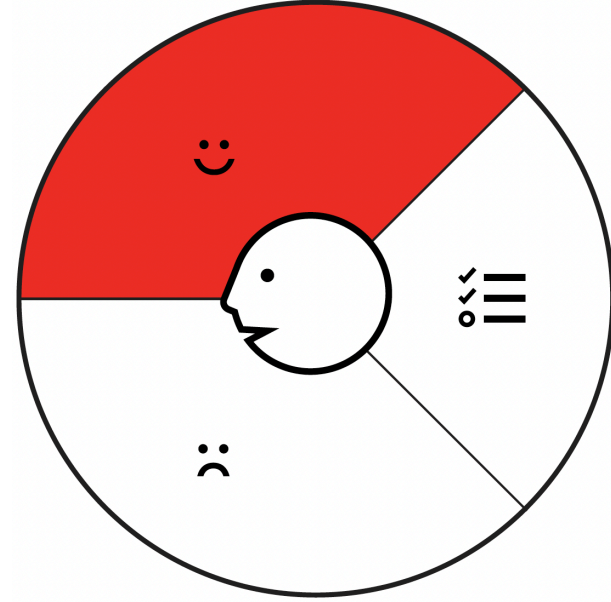
Customer jobs describe what customers are trying to get done in their work and in their lives, as expressed in their own words



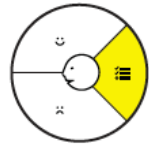
Pains describe bad outcomes, risks, and obstacles **related to customer jobs**



Gains describe the outcomes customers want to achieve or the concrete benefits they are seeking



Ranking jobs, pains and gains



Job importance

Rank jobs according to their importance to customers.



Important



Insignificant



Pain severity

Rank pains according to how extreme they are in the customers' eyes.



Important



Insignificant



Gain relevance

Rank gains according to how essential they are in the customers' eyes.



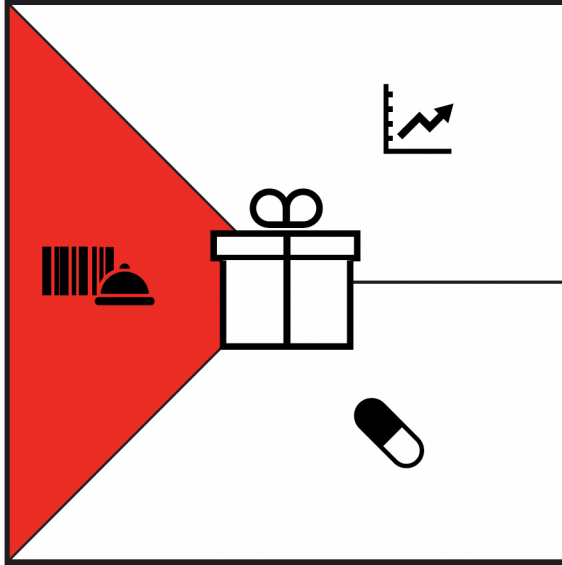
Important



Insignificant



Value map: Products & services



This is a list of all the **products and services** a value proposition is built around

Value map: Pain relievers

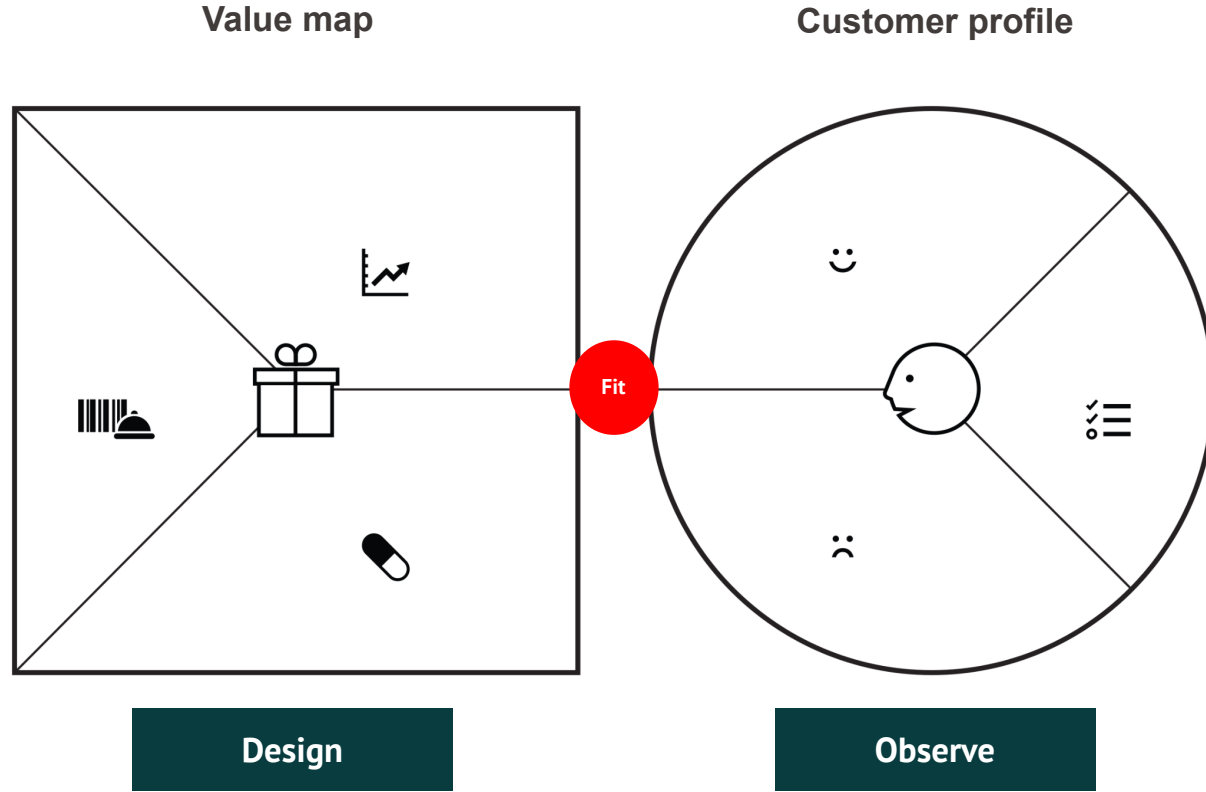


Pain relievers describe how your products and services alleviate **customer pains**

Value map: Gain creators



Gain creators describe how your products and services create **customer gains**



Three kinds of fit



On Paper



In the Market



In the Bank



Problem-solution fit

Only hypotheses



Identify JTBD, pains and gains
Prototype the corresponding
value proposition

Product-market fit

Validation of hypotheses



Develop new value propositions

Business model fit

Some questions regarding the VPC

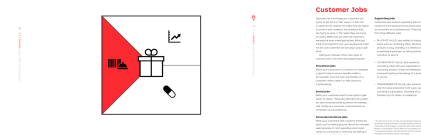
- Does it **focus** on the most important jobs, most extreme pains, and most essential gains?
- Does it address functional, emotional, and social jobs **all together**?
- Does it **align** with how customers measure success?
- Does it **differentiate** from competition in a meaningful way?
- Does it focus on jobs, pains, or gains that a large number of customers have or for which a small number are willing to pay a lot of money?

Value map

- List all your products and services rather than just those targeted at a specific segment
- Add products and services to the pain reliever and gain creator fields
- Offer pain relievers and gain creators that have nothing to do with the pains and gains in the customer profile

Customer profile

- Mixing several customer segments into one profile
- Mixing jobs and outcomes
- Listing jobs, pains, and gains with your value proposition in mind
- Identifying too few jobs, pains, and gains



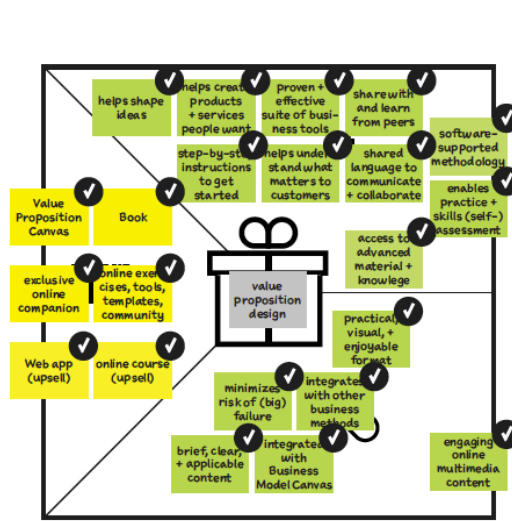
2 PDFs in your board can be of help

Fit?

When we designed the value proposition for this book, we strived to address some of the most important jobs, pains, and gains that potential customers have and that are insufficiently addressed by current business book formats.



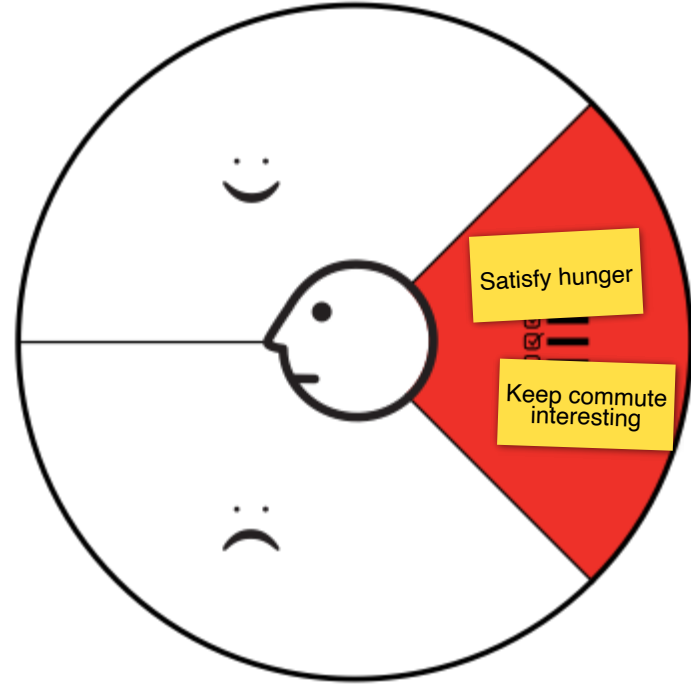
Check marks signify that products and services relieve pains or create gains and directly address one of the customers' jobs, pains, or gains.

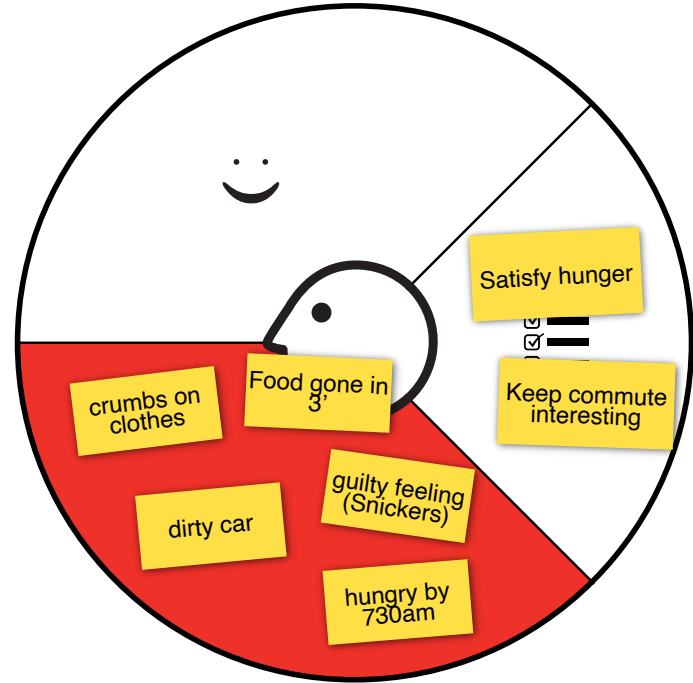
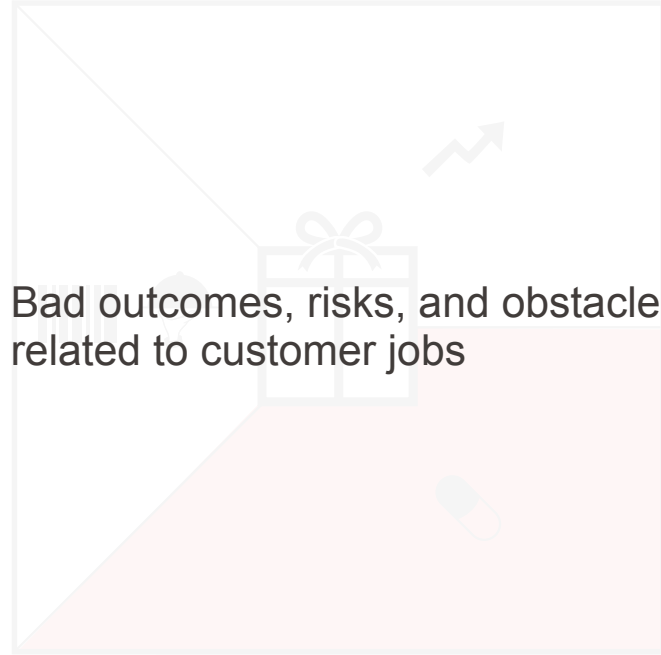


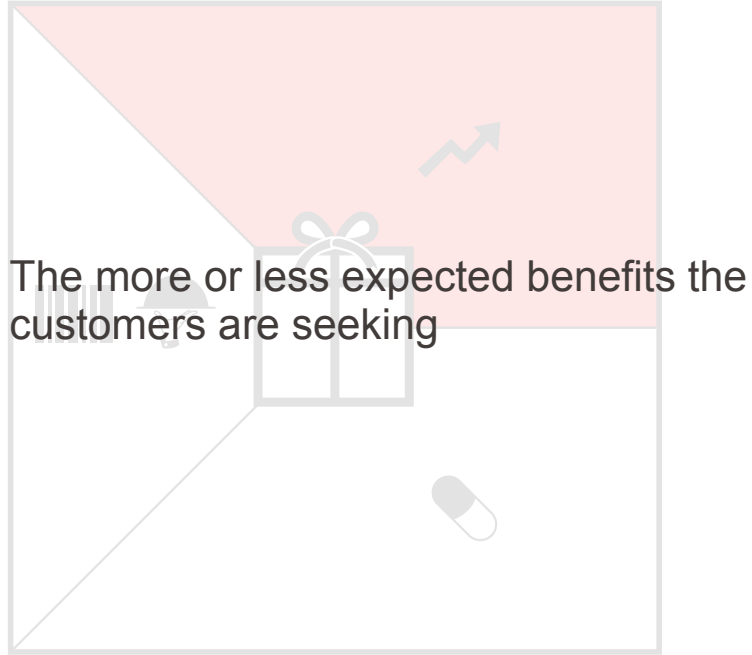
Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

Milkshake example

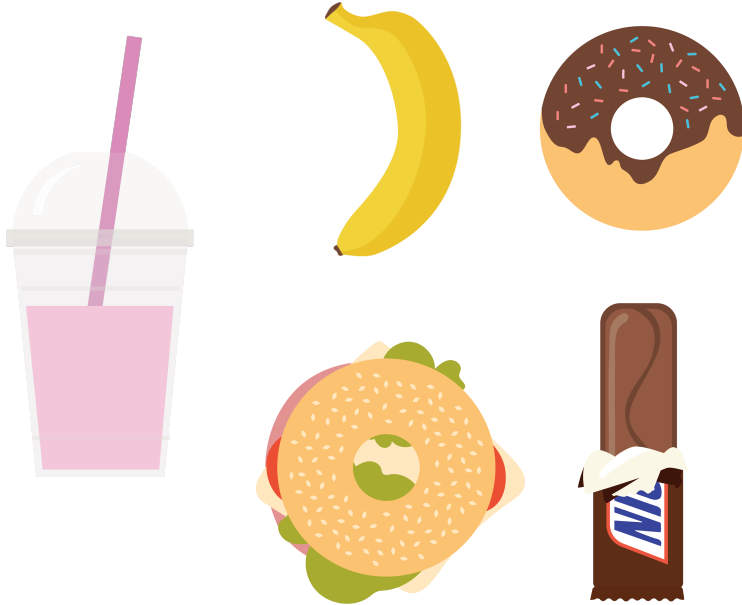
What customers are trying to get done
in their work and in their lives



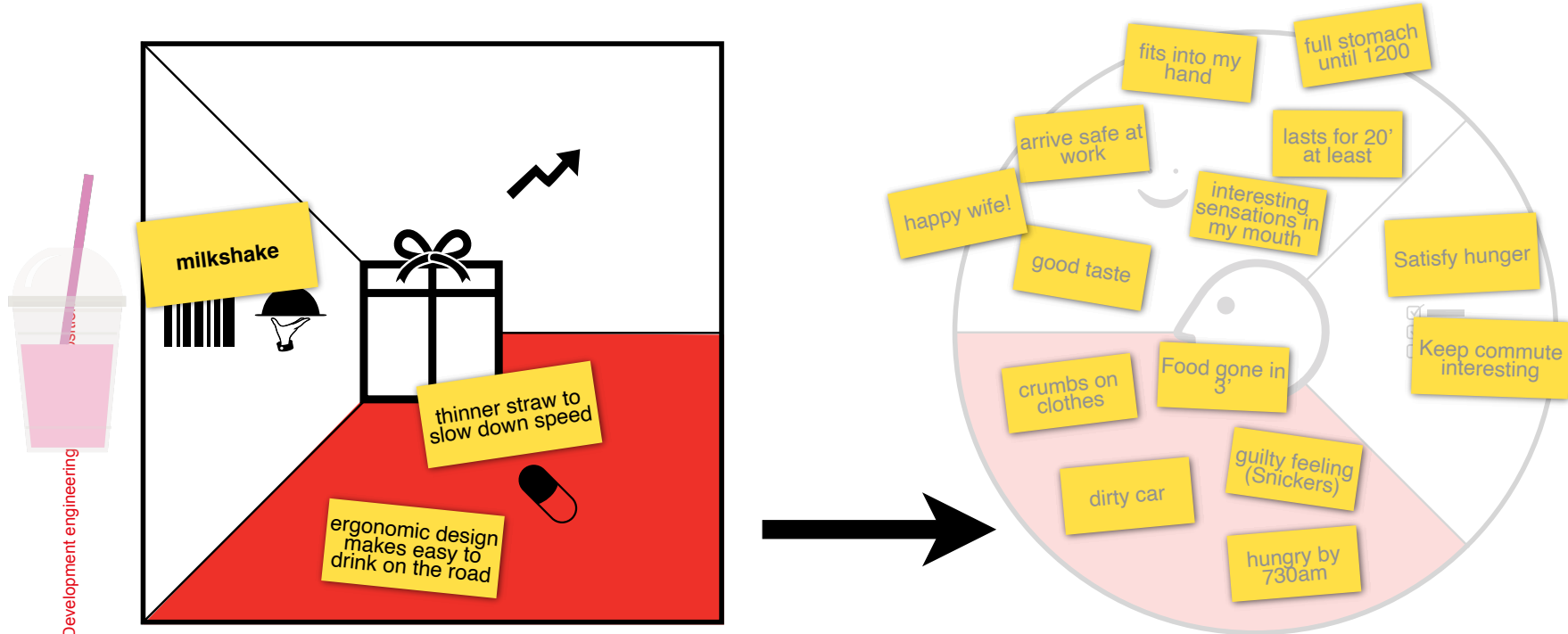




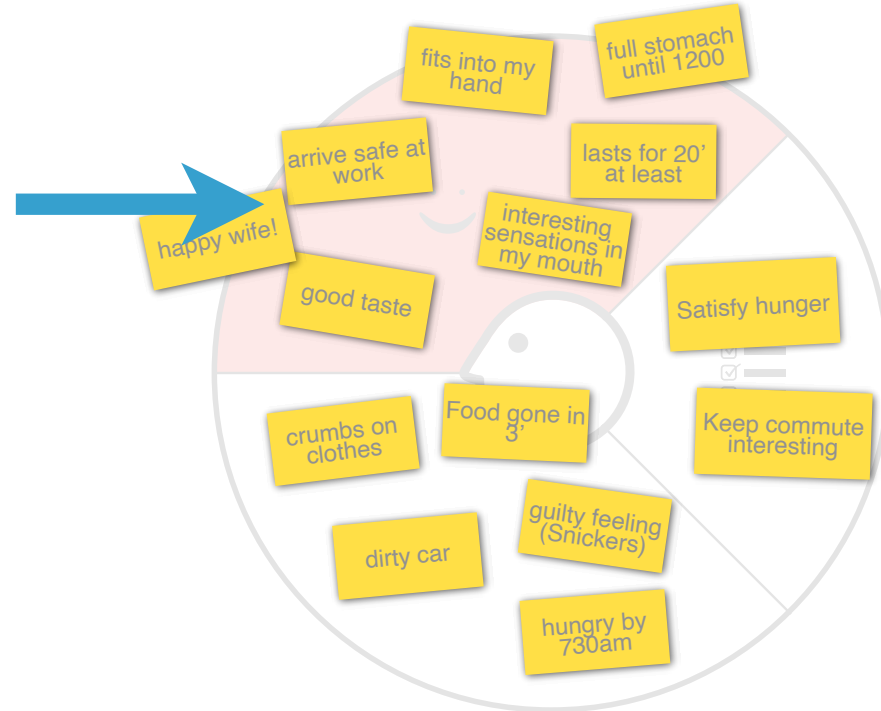
What is the best solution?







How do your products and services address your customer's pains ?



How do your products & services create gains your customers expect, want, or desire ?

Azuri (formerly Eight19)

An example of VPC

750+ million people still live without electricity*

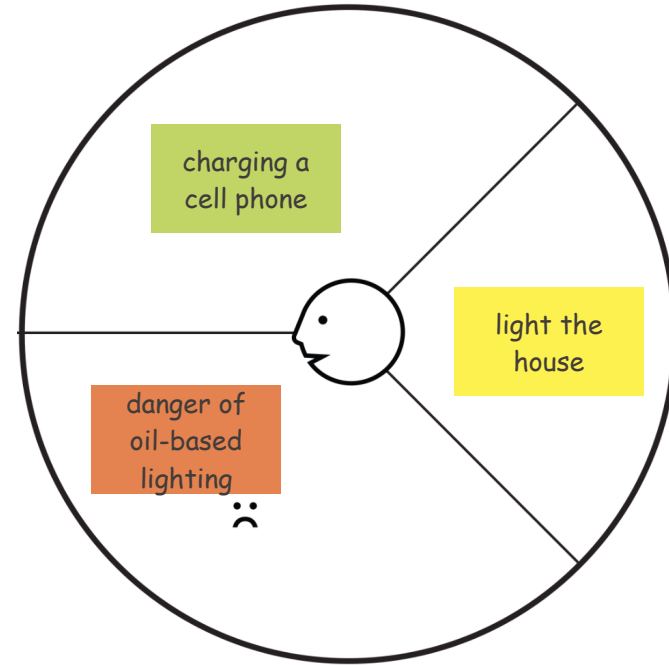


*Source : World Bank (2019)

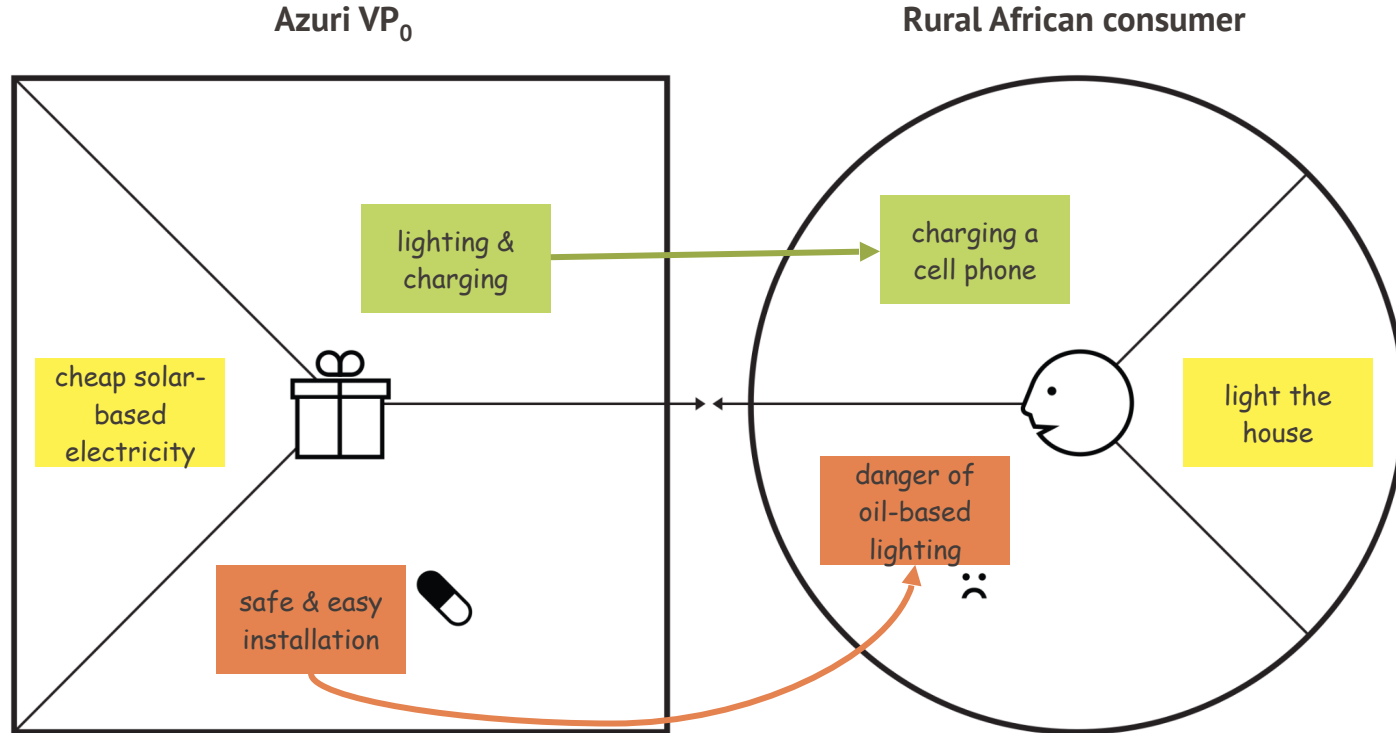


Spin-off from Cambridge University
Developed fully printed plastic solar modules
Targeting the African continent

Rural African consumer

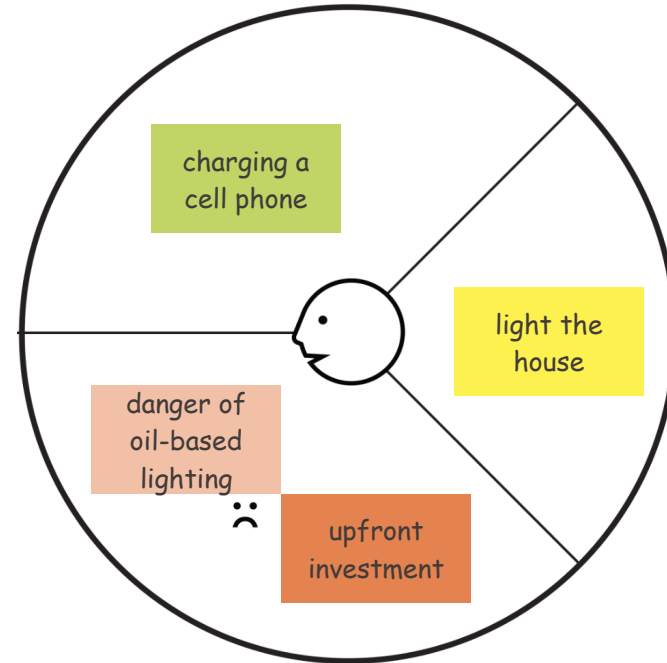


Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley



Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

Rural African consumer

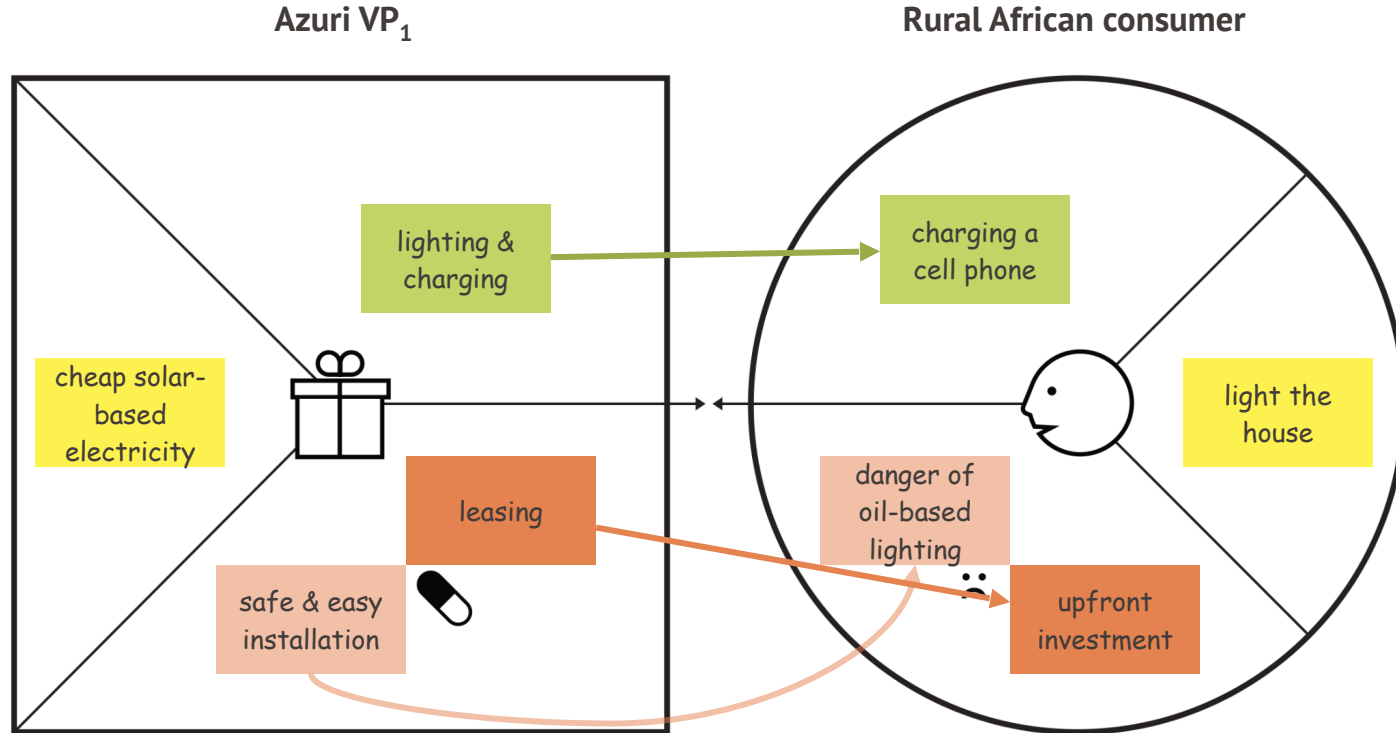


A rural farmer on USD3 per day struggles to afford a USD 70 solar power system

Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

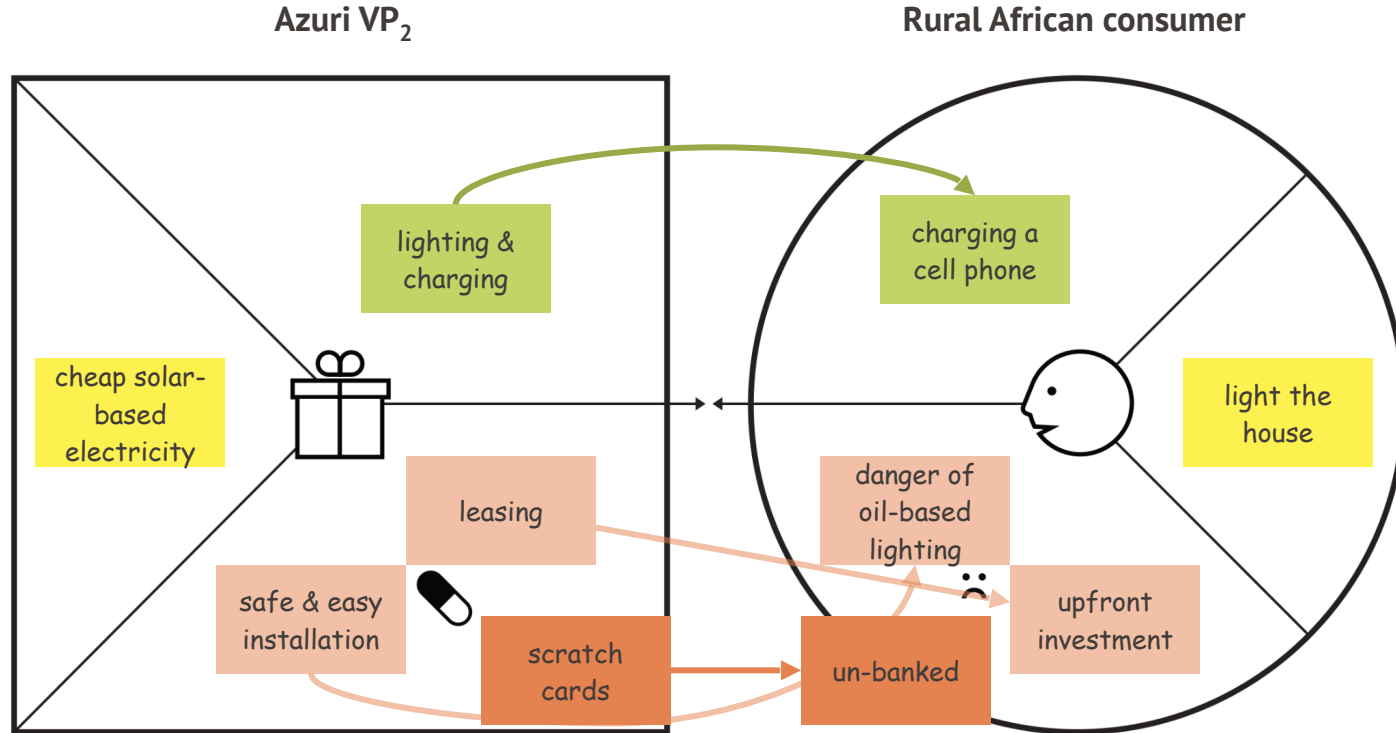
**How to provide solar cell panels to users
who have no money?**

**Give the solar installations away “for free”
(to eliminate the hurdle of upfront investment)**



Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

How can you provide **leasing** to spread out and “un-banked” rural African consumers?

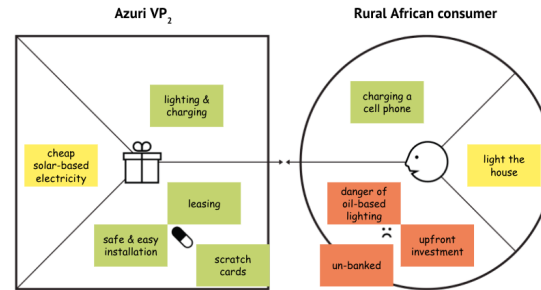


Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

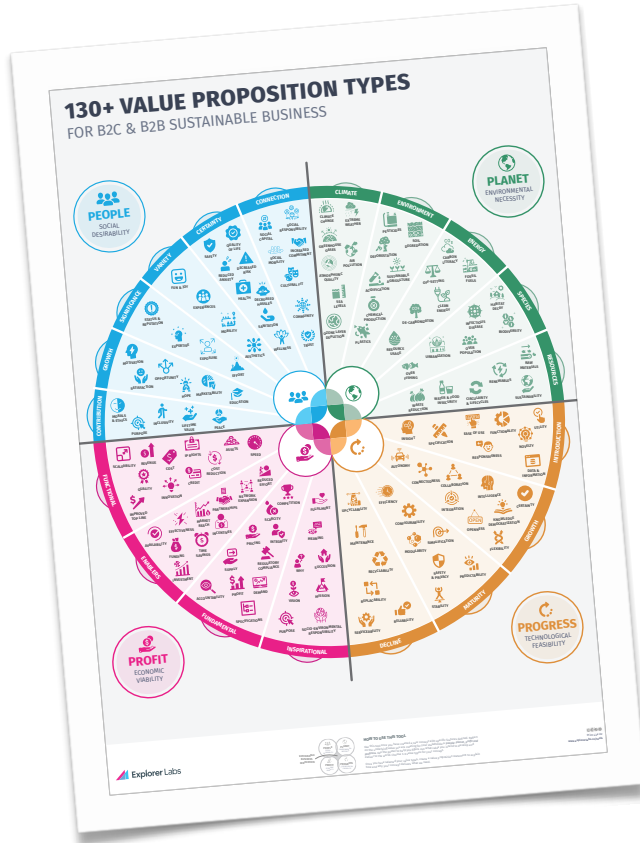
Communicating your VP

Communicating your value proposition

- The VPC is a tool to **observe** and **design**
- It can also be used to **communicate** your value proposition in a clear way



Our **cheap solar installation** helps **rural African consumers** who want to **light their house** by **avoiding oil-based lighting** and **charge their cell phones** (unlike kerosene lamps)



SUSTAINABLE VALUE PROPOSITION

PEOPLE, PLANET, PROFIT, PROGRESS

1 VALUE PROPOSITION TYPES
Select the value types you're creating using the 130+ Value Types Poster

2 VALUE PROPOSITION KPI'S & METRICS
Metrics to track your chosen value types. Be as specific as possible according to your strategy

3 SUSTAINABLE VALUE PROPOSITION STATEMENT
Use the target to write your statement using your value types & KPI's above

Our helps

who have the need OR desire to

by

and

so that

Unlike our solution is different because...

by

Explorer Labs

Source : Explorer Labs

A template to communicate your sustainable value proposition!

3 SUSTAINABLE VALUE PROPOSITION STATEMENT

Use the helper to write your statement using your value types & KPI's above

Our helps who have the need OR desire to by + and + so that

PRODUCT, SERVICE, OFFERING, CONCEPT USERS, CUSTOMERS, SOCIETY, ECOSYSTEMS, PLANET... SOLVE PROBLEM X, JOB-TO-BE-DONE, UN SDG GOALS... VALUE TYPE ACTION VERB: (REDUCING, REMOVING, AVOIDING...) PAINS: CUSTOMER, USER, ECOSYSTEM, PLANET... VALUE TYPE ACTION VERB: (INCREASING, SOLVING, IMPROVING, ENABLING...) GAINS: CUSTOMER, USER, ECOSYSTEM, PLANET... DESIRED FUTURE OUTCOME(S) X, Y, Z HAPPEN...

Unlike our solution is different because... by

COMPETITOR OFFER X ACTION VERB: PROVIDES, ENABLES, CREATES... OUTCOME QUANTIFIED KPI'S OR METRICS

Source : Explorer Labs

A new way to deliver energy.

Modular Battery Swapping



Fully automated.

01

Source: <https://www.explorerlabs.co/thinking/how-to-build-a-sustainability-focused-value-proposition-statement>

A template to communicate your value proposition!

3 SUSTAINABLE VALUE PROPOSITION STATEMENT

Use the helper to write your statement using your value types & KPI's above

Our **reusable modular battery solution** helps **people in busy cities with e-vehicles**

PRODUCT, SERVICE, OFFERING, CONCEPT USERS, CUSTOMERS, SOCIETY, ECOSYSTEMS, PLANET...

who have the need OR desire to **quickly find and replace their batteries**

SOLVE PROBLEM X, JOB-TO-BE-DONE, UN SDG GOALS...

by **removing** + **the stress and need to wait for recharging**

ACTION VERB: (REDUCING, REMOVING, AVOIDING...) PAINS: CUSTOMER, USER, ECOSYSTEM, PLANET...

and **solving** + **the problem of manufacturing excessive lithium cells**

ACTION VERB: (INCREASING, SOLVING, IMPROVING, ENABLING...) GAINS: CUSTOMER, USER, ECOSYSTEM, PLANET...

so that **we only produce and use batteries we actually use**

DESIRED FUTURE OUTCOME(S) X, Y, Z HAPPEN...

Unlike **proprietary battery power e-vehicles that aren't interchangeable and must be individually purchased** our solution is different because...

COMPETITOR OFFER X

it contributes to SGD 7, 11, 12 and 13 by **delivering non-wasteful, sustainably produced, recyclable batteries that provide a scalable and profitable solution across global cities.**

ACTION VERB: PROVIDES, ENABLES, CREATES... OUTCOME QUANTIFIED KPI'S OR METRICS

Q & A

Conclusion

In summary

- Business model = how you create value
- Value proposition = what and for whom you create value



15 minutes

Project time!

Time to apply this to your project

Value map

- List products and services
- Outline pain relievers
- Outline gain creators
- Rank the above by order of importance

Customer profile

- Select customer segment(s)
- Identify customer jobs
- Identify customer pains
- Identify customer gains
- Prioritize jobs, pains, and gains



Create the first iteration of your value proposition using the value proposition canvas (**see template**)

EPFL To do (2/2)

- Identify the value types of your project using the SVPC
- Define the value proposition KPI's and metrics
- Draft the value proposition statement

Value proposition template

Your Value Proposition

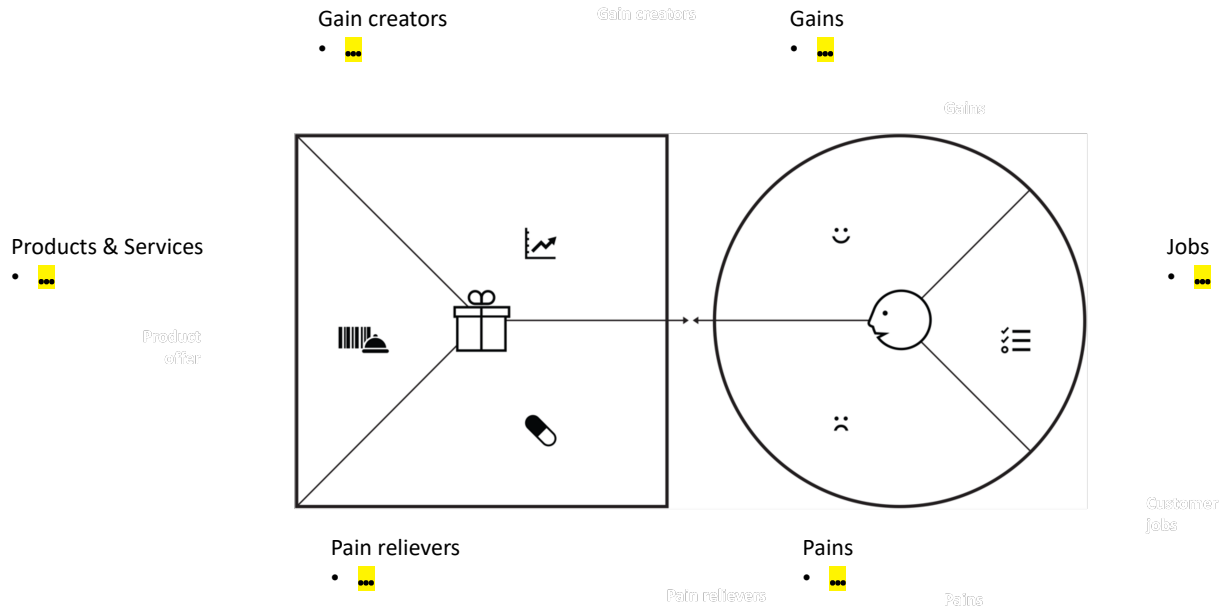
Selected customer segment: ■■■

List of alternative customer segments:

- ■■■

Your sustainable value proposition statement

Our ■■■ (product(service/offering/concept) helps ■■■ (users/customers/society/ecosystems/planet) who have the need or desire to ■■■ (solve problem x, job-to-be-done, UN SDG goals, etc) by ■■■ (action verb: reducing/removing/avoiding) ■■■ (pains: customer, user, ecosystem, planet, etc) and ■■■ (action verb: increasing/solving/improving/enabling) ■■■ (gains: customer, user, ecosystem planet) so that ■■■ (desired future outcome(s) X, Y, Z happen).



- April 29
 - till 19:00 : Work in teams on the first iteration of VPC (use template on Moodle)
 - 23:59 : Send 1st iteration to the course assistant/me* for feedback, indicating your group number (it's optional and not graded)
- May 6
 - Teams who have submitted a VPC on April 29 receive feedback

*marc.laperrouza@epfl.ch

Q & A

Example of SVP

A new way to deliver energy.

Modular Battery Swapping



Fully automated.

01

Source: <https://www.explorerlabs.co/thinking/how-to-build-a-sustainability-focused-value-proposition-statement>

A template to communicate your value proposition!

3 SUSTAINABLE VALUE PROPOSITION STATEMENT

Use the helper to write your statement using your value types & KPI's above

Our **reusable modular battery solution** helps **people in busy cities with e-vehicles**

PRODUCT, SERVICE, OFFERING, CONCEPT USERS, CUSTOMERS, SOCIETY, ECOSYSTEMS, PLANET...

who have the need OR desire to **quickly find and replace their batteries**

SOLVE PROBLEM X, JOB-TO-BE-DONE, UN SDG GOALS...

by **removing** + **the stress and need to wait for recharging**

ACTION VERB: (REDUCING, REMOVING, AVOIDING...) PAINS: CUSTOMER, USER, ECOSYSTEM, PLANET...

and **solving** + **the problem of manufacturing excessive lithium cells**

ACTION VERB: (INCREASING, SOLVING, IMPROVING, ENABLING...) GAINS: CUSTOMER, USER, ECOSYSTEM, PLANET...

so that **we only produce and use batteries we actually use**

DESIRED FUTURE OUTCOME(S) X, Y, Z HAPPEN...

Unlike **proprietary battery power e-vehicles that aren't interchangeable and must be individually purchased** our solution is different because...

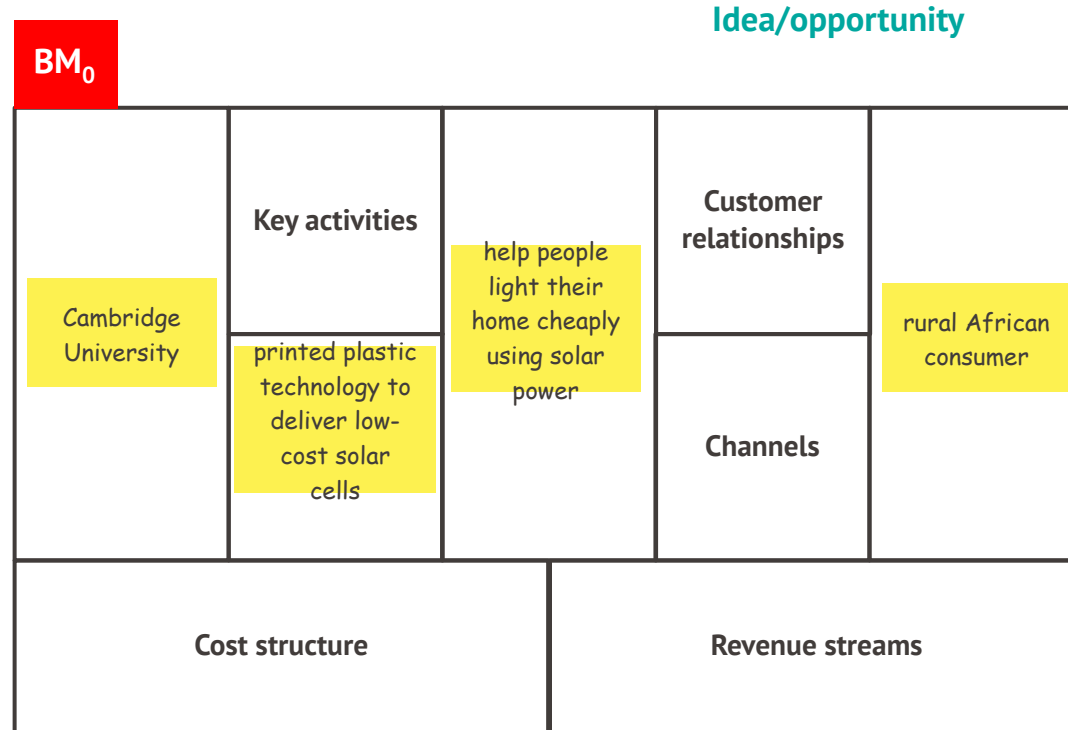
COMPETITOR OFFER X

it contributes to SGD 7, 11, 12 and 13 by **delivering non-wasteful, sustainably produced, recyclable batteries that provide a scalable and profitable solution across global cities.**

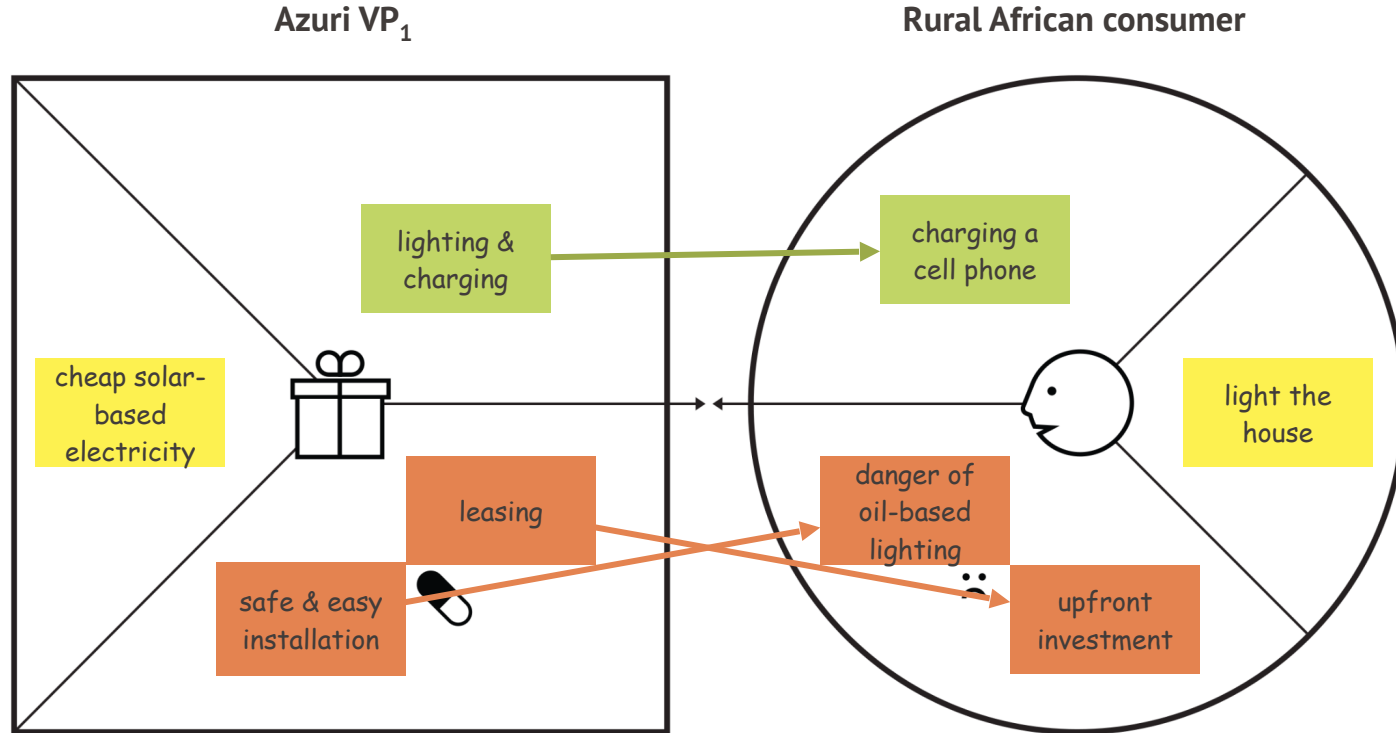
ACTION VERB: PROVIDES, ENABLES, CREATES... OUTCOME QUANTIFIED KPI'S OR METRICS

Linking value propositions and business models

Azuri's business model

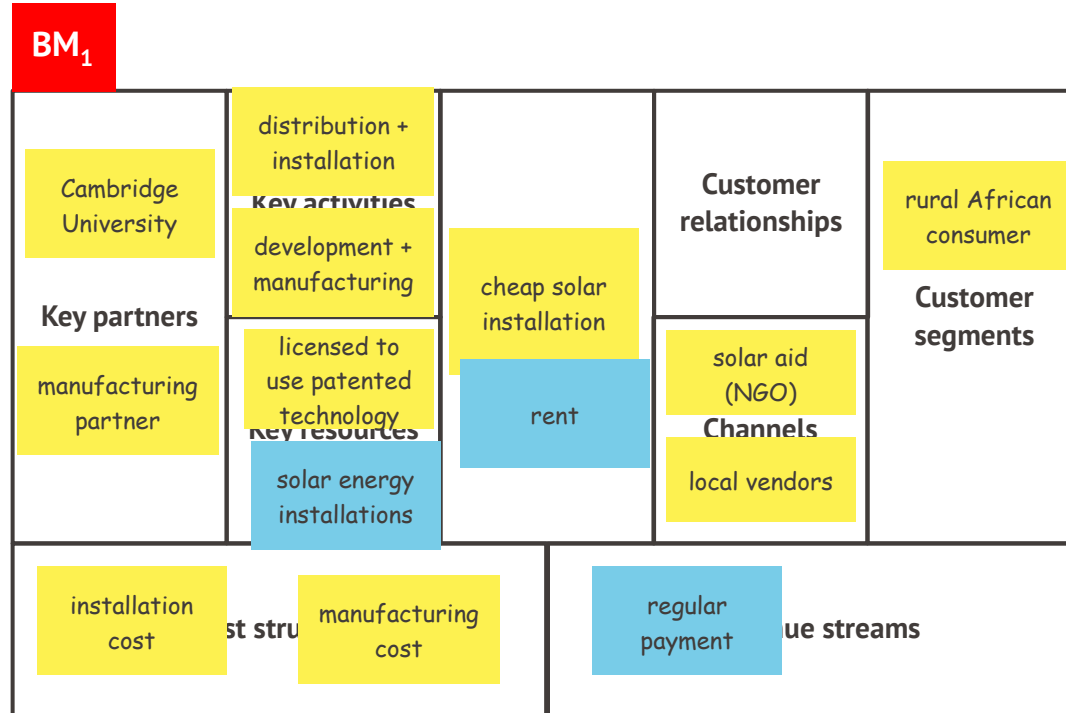


Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

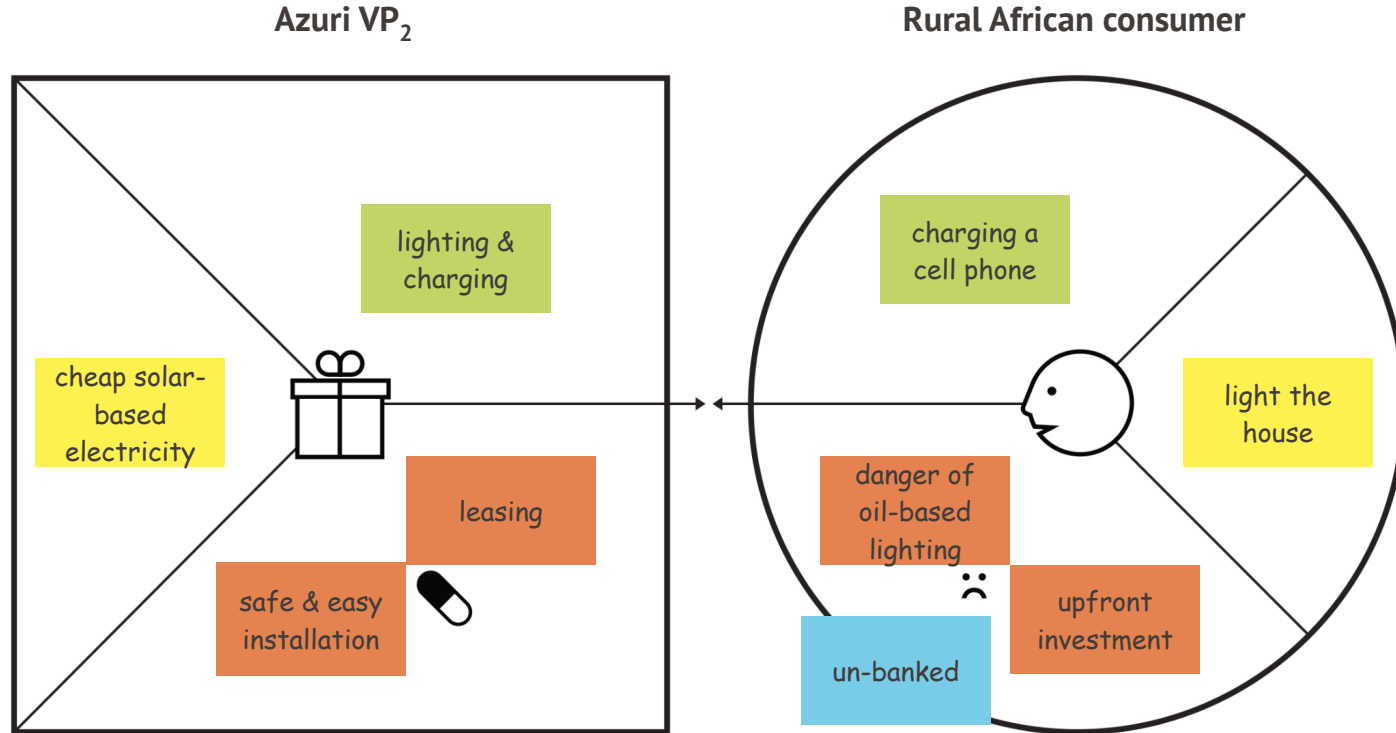


Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

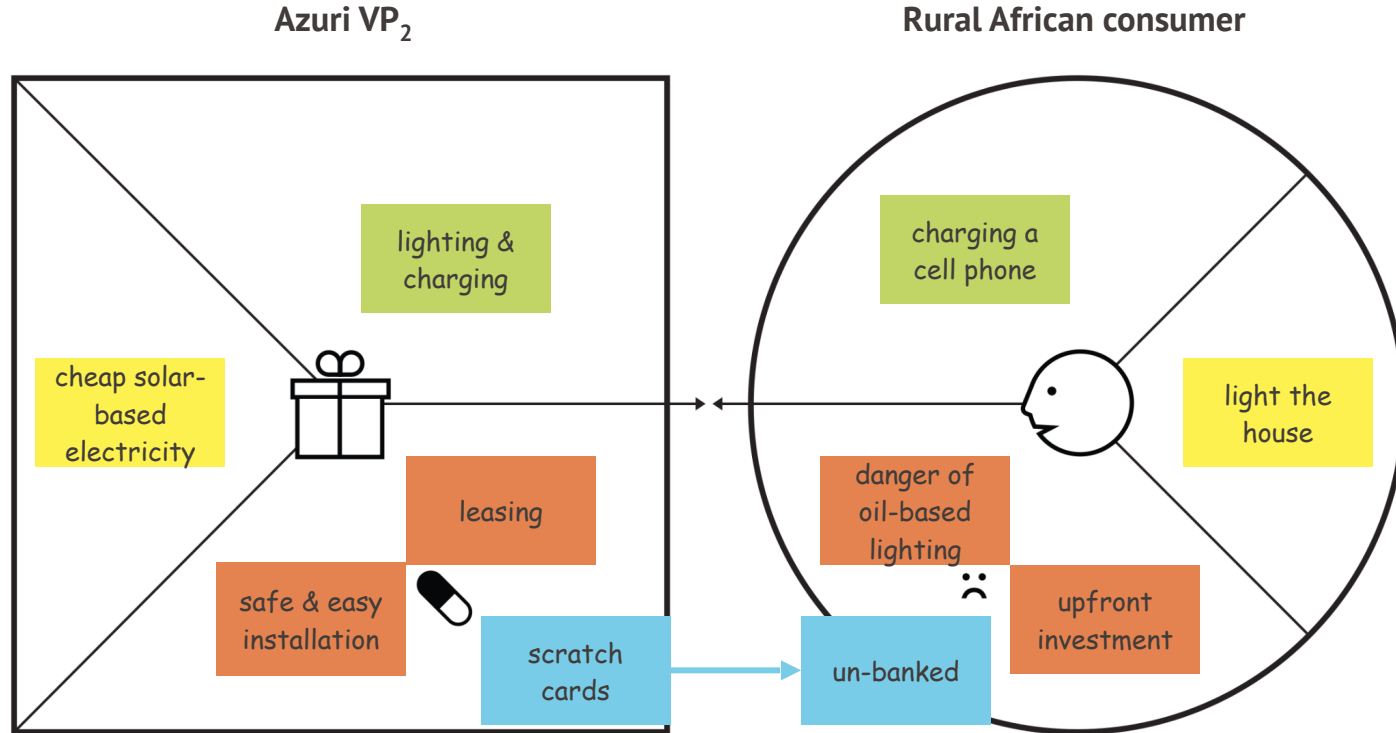
Azuri's business model



Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley



Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley



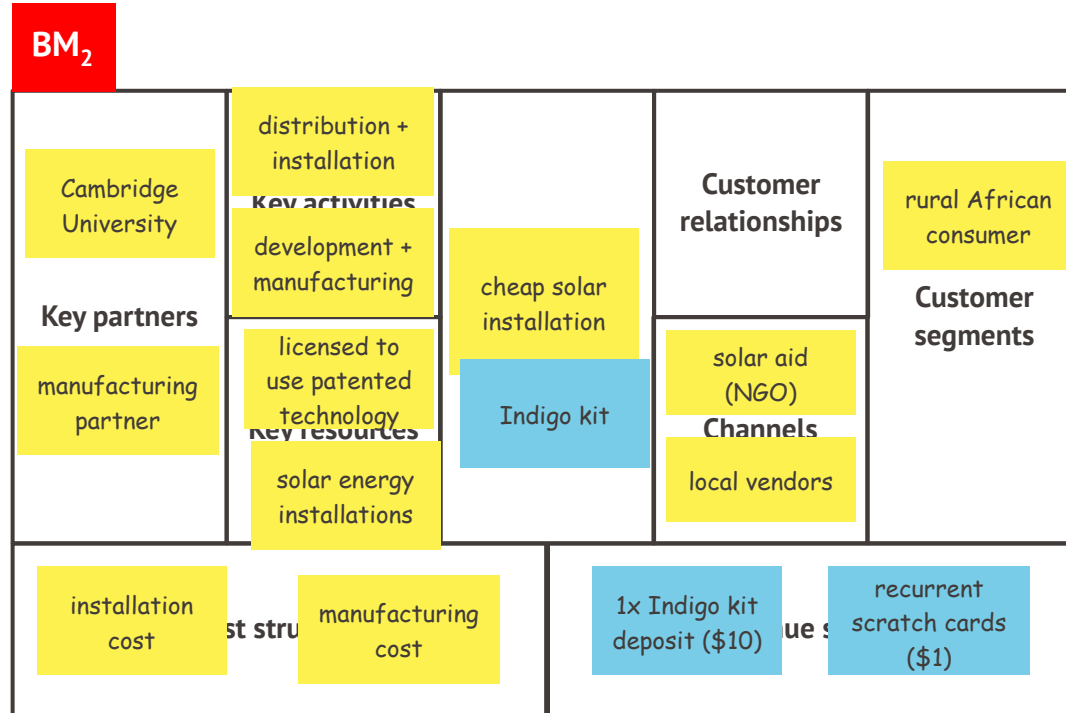
Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

Azuri's business model



Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

Azuri's business model



Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

What does Azuri's VP look like for a customer?

- \$10 Buy the Indigo kit (solar panels, lamps, charger)
- \$1 Buy scratch cards, use SMS from a mobile phone, enter the resulting passcode into the Indo unit, and use the installation for a period of time (typically a week)
- “Free” Own your box after 80 scratch cards, or...
- Upgrade Escalate to a large system and access more energy; continue to buy scratch cards

Source: Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: how to create products and services customers want. Hoboken, NJ: Wiley

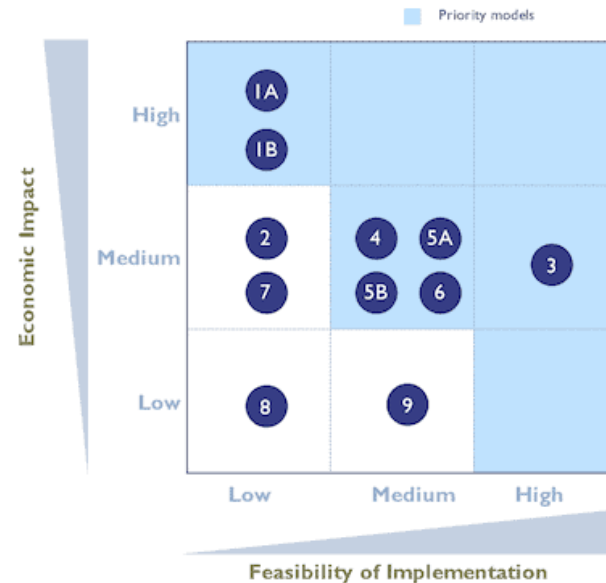


EPFL One step further

		Operational Responsibility		
		Developer	Partner	Community
Credit Risk	Developer	1A Key Maker model 1B Processing Centre Model	2 Developer-funded External Operator model	3 Productive Use Appliance Funding (PUAF) model
	Partner	4 Facility Manager model	5A Off-taker model 5B Fee for service model	6 External Creditor model
	Community	7 Community-contribution Developer Operated model	8 Community-contribution Partner Operated model	9 Utility model

One step further

		Operational Responsibility		
		Developer	Partner	Community
Credit Risk	Developer	1A Key Maker model	2 Developer-funded External Operator model	3 Productive Use Appliance Funding (PUAF) model
		1B Processing Centre Model		
	Partner	4 Facility Manager model	5A Off-taker model	6 External Creditor model
			5B Fee for service model	
	Community	7 Community-contribution Developer Operated model	8 Community-contribution Partner Operated model	9 Utility model



5

Willingness-to-Pay

3 types of pricing

- Value-based: based on the customer's perceived value of the product/service
- Cost-based: based on manufacturing/production costs and a desired profit margin
- Competition-based: based on prices set by competitors in the market

Willingness-to-pay (WTP)

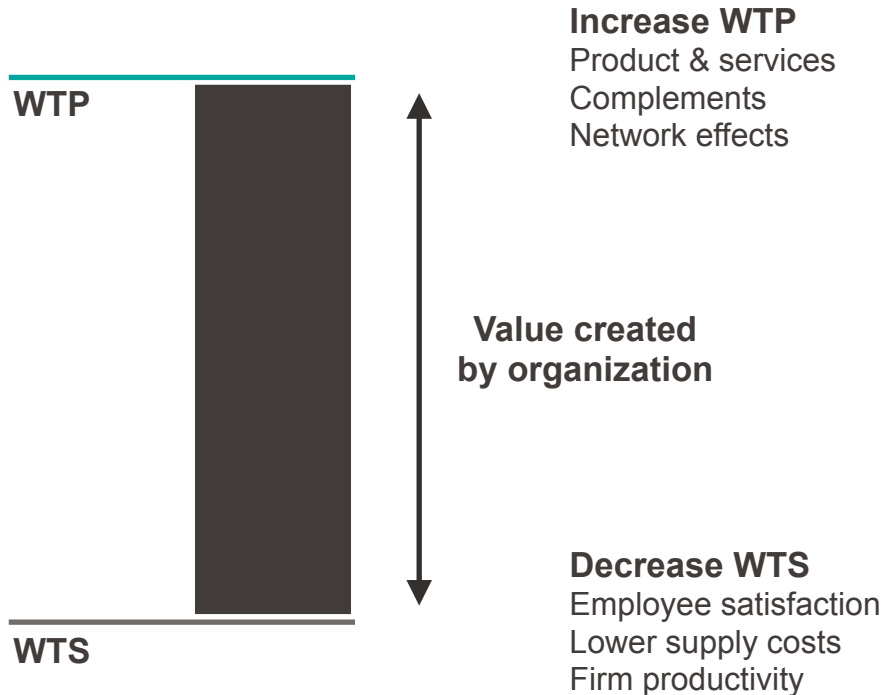
The maximum amount a consumer is ready to spend to acquire a good or service

Determining WTP for a charity

- Contingent Valuation (Survey-Based): ask potential donors directly: “What is the maximum amount you would be willing to donate to support this cause?” Use open-ended questions, payment cards, or bidding games
- Conjoint Analysis (Choice Modelling): present donors with different combinations of campaign features (e.g., impact, transparency, gift incentives), then analyze which combinations lead to higher donation preferences
- Field Experiments & A/B Testing: test different suggested donation amounts, donation formats, or messaging in real campaigns

Maximum price that customers
would be willing to pay

Minimum price/wage that suppliers/
employees would be willing to accept



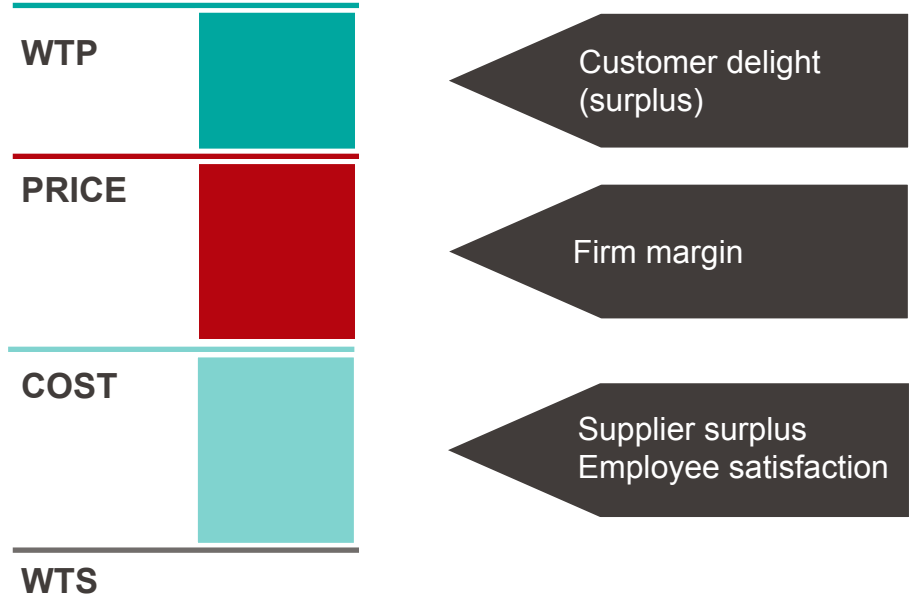
Source: Oberholzer-Gee, F. (2021). Better, simpler strategy : a value-based guide to exceptional performance. Boston, MA, Harvard Business Review Press.

Maximum price that customers
would be willing to pay

Customer price

Compensation/cost

Minimum price/wage that suppliers/
employees would be willing to accept



Source: Oberholzer-Gee, F. (2021). Eliminate Strategic Overload. Harvard Business Review, 99(3): 88-97.

3 things about value

- A value proposition implies the creation of different **types** of **value**
- Value can be created for customers (B2C) or businesses (B2B)
- Value (propositions) should be sustainable

Value

Bowman and Ambrosini (2000, 2010) address the challenge of understanding the concept of value by distinguishing between **use value** and **exchange value**. The total value created by a product or service is defined as the sum of its use value and exchange value.

- *Use value*, also called consumer surplus, is associated with a product or service. It is defined by the *specific qualities perceived* by the customer about their needs and jobs addressed after deducing all costs. It is subjective and different from customer to customer.
- *Exchange value* is defined as the *price* a customer is willing to pay in exchange for a product or service. It is the *monetary amount* exchanged between the organisation and its customers for use value. In contrast with use value, which the customer defines, the exchange value is based on an agreement between two stakeholders, the customer and the organisation. Its upper bound is called willingness to pay.

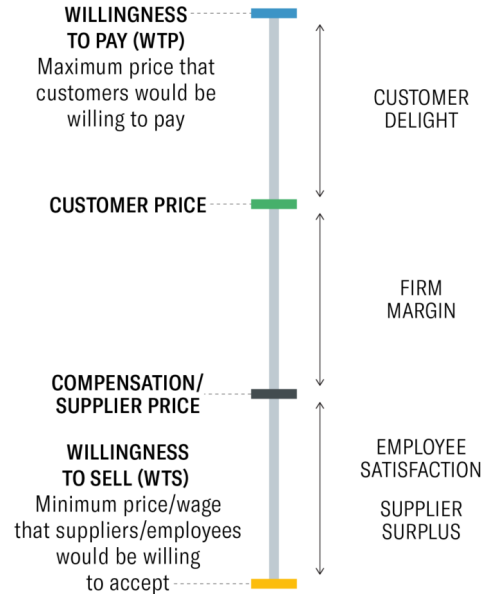
Source: Dietrich, C. (2024). Design thinking Strategy. Cham: Springer.

3 types :

- Value-based: based on the customer's perceived value of the product/service
- Cost-based: based on manufacturing/production costs and a desired profit margin
- Competition-based: based on prices set by competitors in the market

The Value Creation Opportunity

When companies find ways to increase customer delight, employee satisfaction, and supplier surplus, they expand the total amount of value they create and position themselves for extraordinary financial performance.



Source: Oberholzer-Gee, F. (2021). Eliminate Strategic Overload. Harvard Business Review, 99(3): 88-97.