



CLTV

base of a long-term strategy

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Agenda

1 Sber

2 CLTV

3 Q&A

Agenda

1 Sber

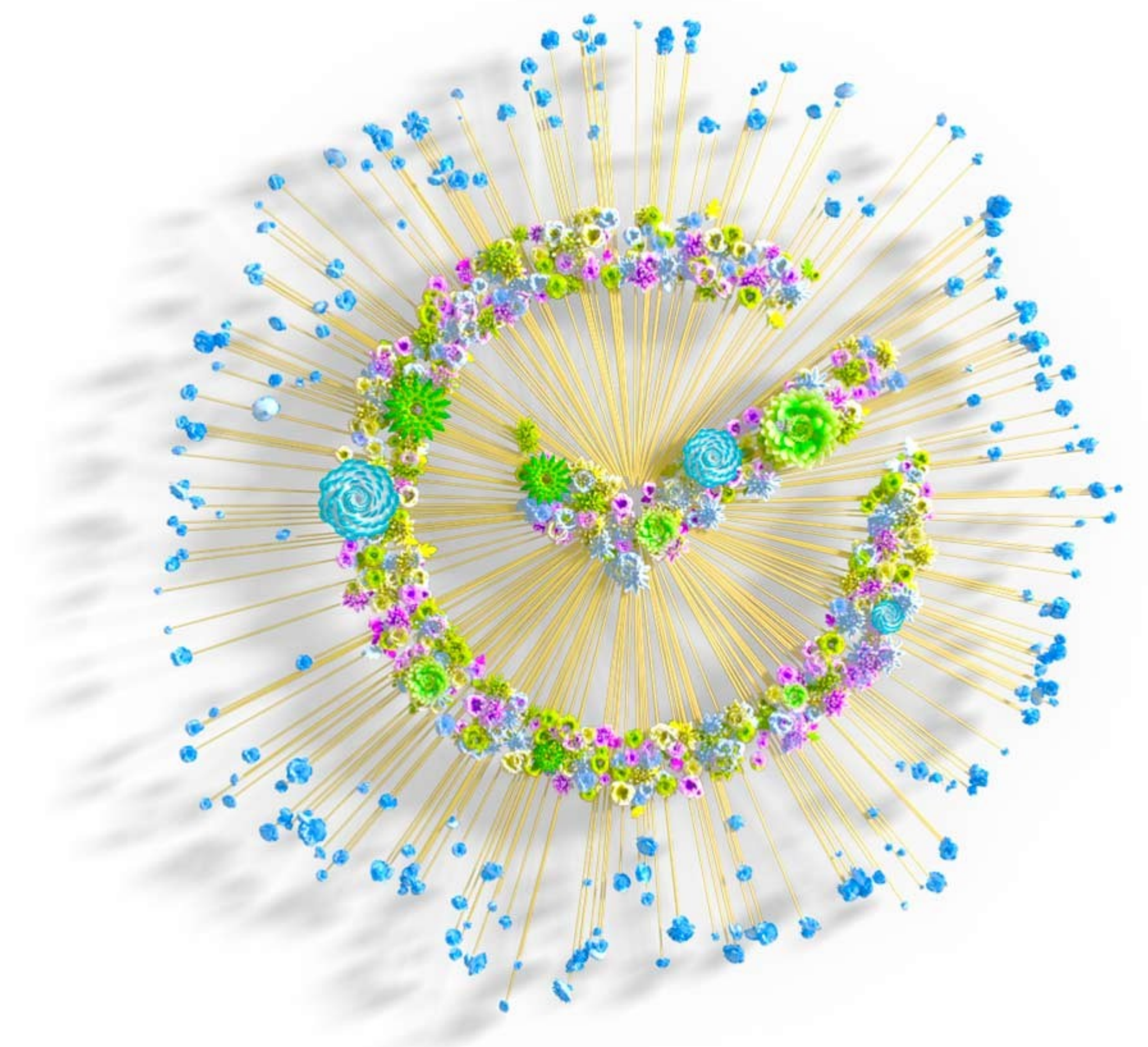
2 CLTV

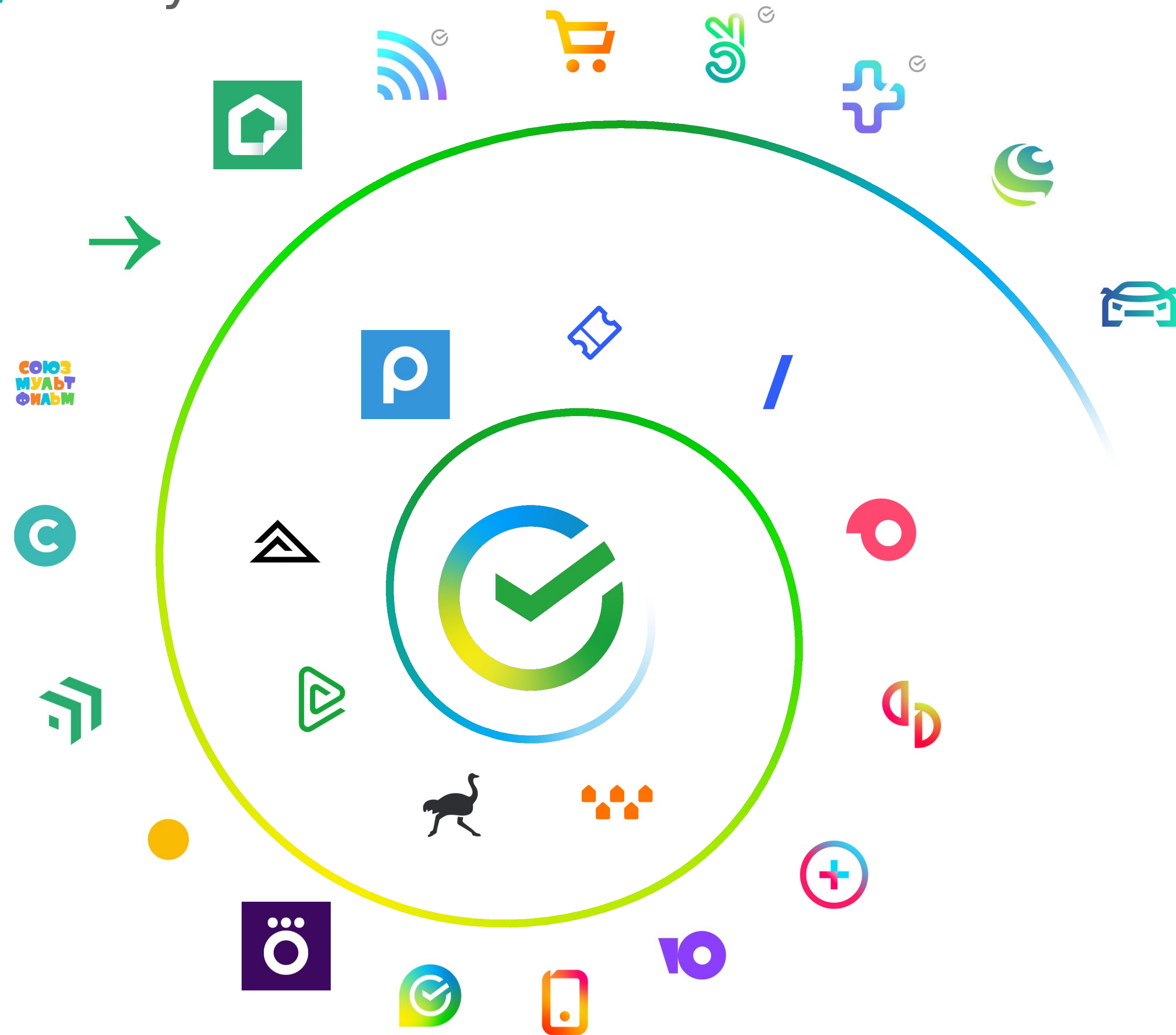
3 Q&A

Sber– is an ecosystem of convenient online services in different areas for any life circumstances.

Key goal of the global Sber strategy is to achieve a whole new level of competitiveness to compete against global technology companies.

Any decision are based on the ecosystem's core – clients' needs.





150+

products

101+ million
active Sber customers

1+ million
contacts with clients per day



The main challenge becomes the **union of the audience** and the formation of a single client pathway inside the system.



Main goal - maximize total revenue by making right
decision
to which client in which channel at what time
to offer **which product.**

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AS IS

Calculation
of the priority
of the product
for the client
within the system

$$\left[\text{net present value} \right] \times \left[\text{channel response} \right] = \left[\text{cost} \right]$$

Time horizon

month

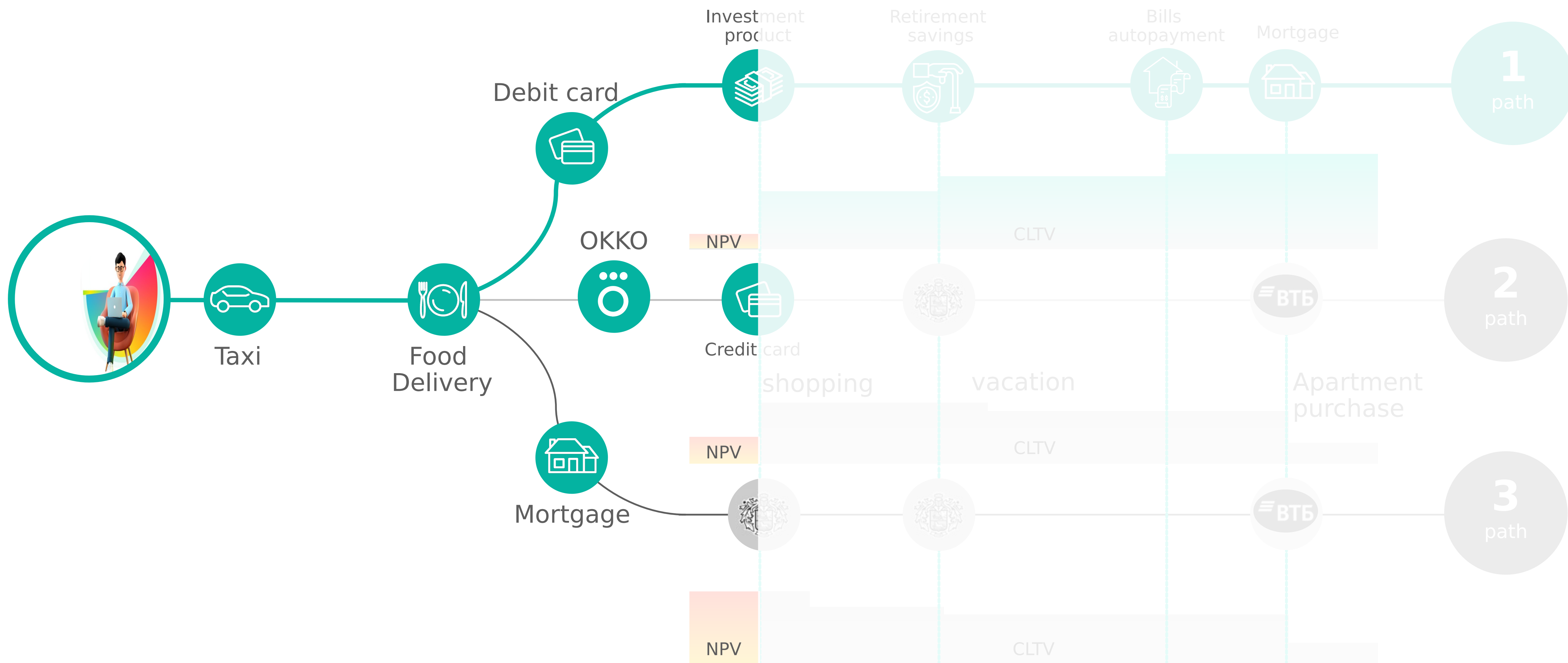
TO BE

$$\left[\text{Client's } \Delta \text{CLTV} \right] \times \left[\text{channel response} \right] = \left[\text{cost} \right]$$

month + 3 years

CLTV / Client's way to be

Now, when deciding on any interaction with a client, we evaluate not only the profit in the moment, but we plan a long-term game for several years ahead.



AS IS

Calculation
of the priority
of the product
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within the system

$$\left[\text{net present value} \right] \times \left[\text{channel response} \right] = \left[\text{cost} \right]$$

Time horizon

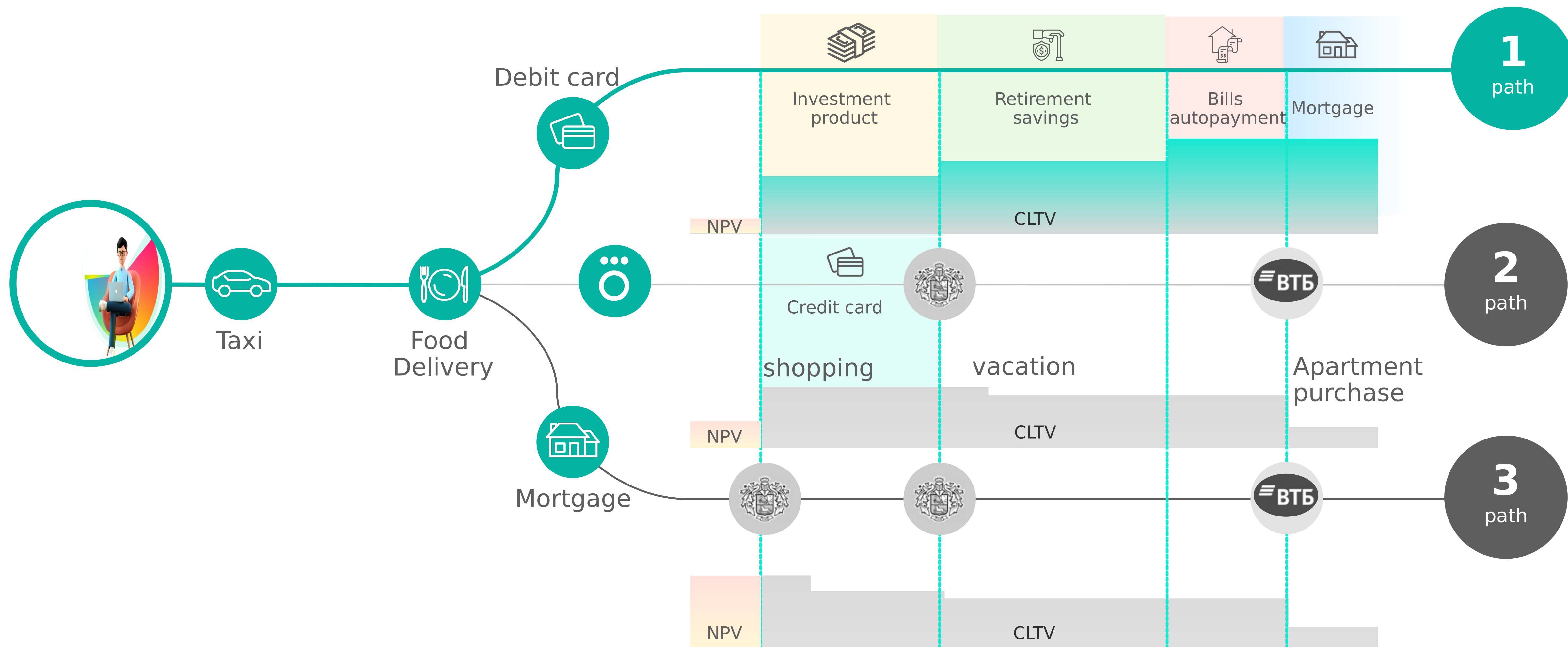
month

TO BE







$$\left[\text{Client's } \Delta \text{CLTV} \right] \times \left[\text{channel response} \right] = \left[\text{cost} \right]$$

month + 3 years

CLTV / Units' problems on client's way



We need **not only to calculate the probabilities** for
the client,
but **determine the influence of products on each
other.**

		products that affect		
		 Mortgage	 OKKO	 Loan
affected Products	 Mortgage	+0,34%	+0,001%	-0,001%
	 OKKO	-0,03%	+0,05%	+0,05%
	 Loan	+0,05%	-0,2%	+0,05%

576

24x24 probabilities
Evaluating the impact of 24 products on 24 products

7 488

576x13 probabilities
On the horizon of 3 years, broken down by quarter + t0

14 976

7488x2 probabilities
To assess what would happen if you buy VS does not buy product

LTV / Universal data sets

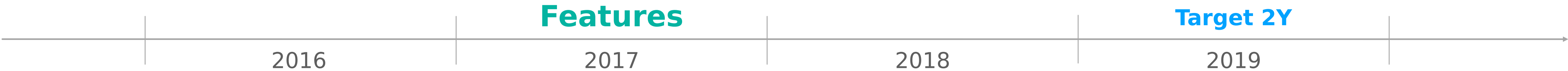
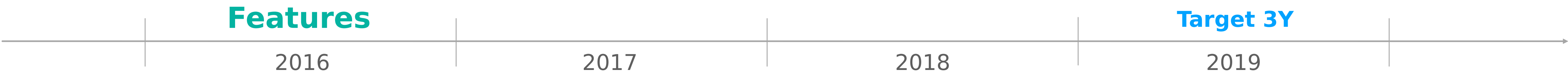
- One clients sample - 312 targets (24 products * 13 periods)
- If we want to evaluate several events for the same clients, we can add them into one flat table

Client	Features	Targets				
		trg_DEP	trg_PL	trg_DC	trg_CC	trg_Ins
A	{...}	0	1	0	1	0
B	{...}	1	0	1	0	1
C	{...}	0	1	0	1	0

Usually



CLTV



Usually

Client	Features	Targets				
		Model 1	Model 3	Model 3	Model 4	Model 5
		trg_dep_t+1	trg_dep_t+2	trg_dep_t+3	trg_dep_t+4	trg_dep_t+5
A	{...}	0	1	0	1	0
B	{...}	1	0	1	0	1
C	{...}	0	1	0	1	0

CLTV

Client	Features	Model CLTV	
		t	Targets trg_dep
A	{...}	1	0
A	{...}	2	1
A	{...}	3	0
B	{...}	1	0
B	{...}	2	1
B	{...}	3	0

Edited D_{ream} -Desk for modeling in a loop

Features can be quickly selected by LightGBM
Instead of RandomForest. Than we used selected
feats short list to built models on XGBoost or
CatBoost.

Train on Catboost
with «boosting_type» = «Ordered»
(works well in cases where there are few
targets)

One encoder for all models

A universal function for scoring, where you can specify model as a parameter

Spark is great for scaling up scoring thanks to parallelization.



481

New models in 2 weeks



65%

Average gini



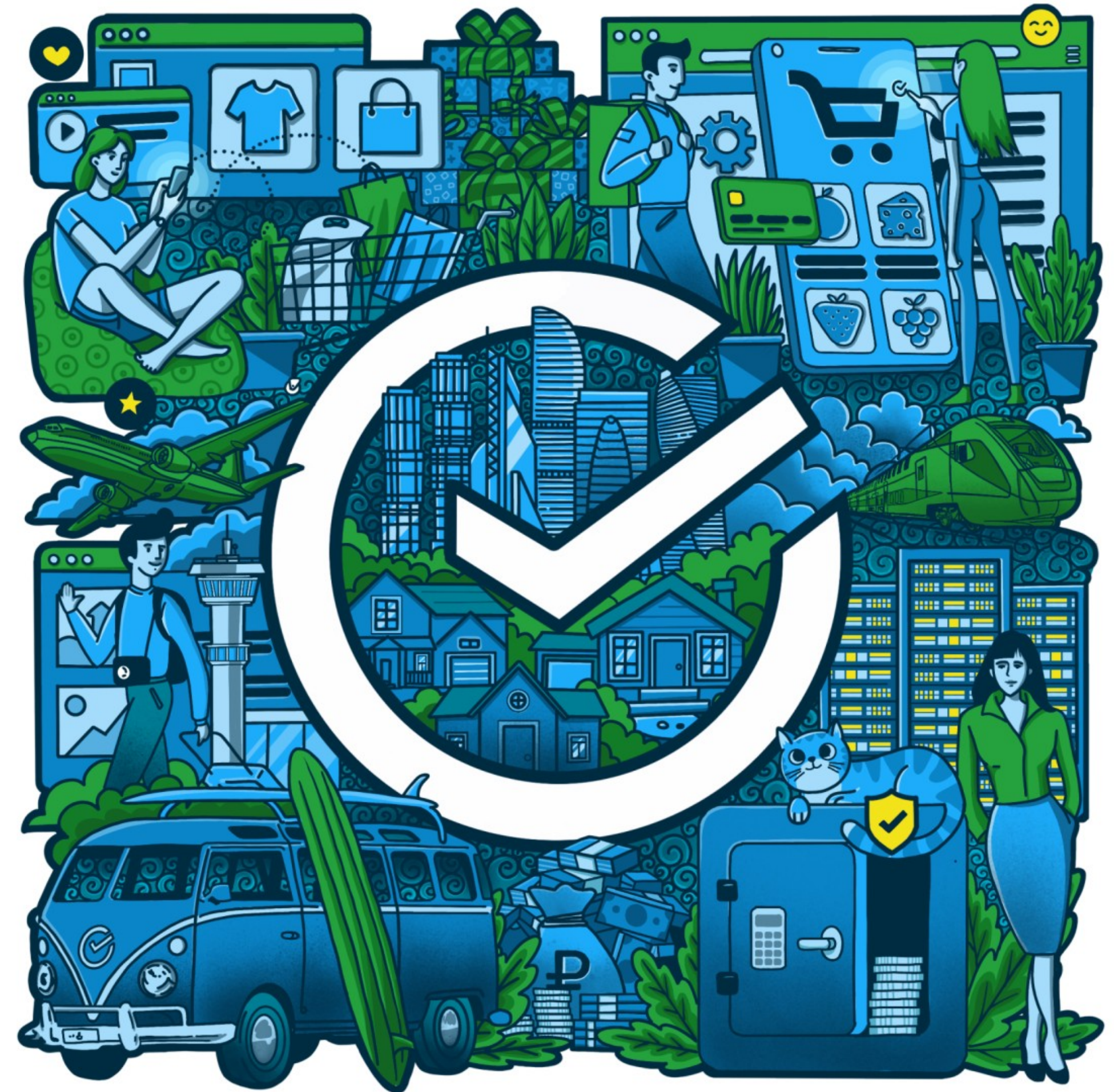
10-30%

decision making
change



5%

Finance uplift



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Q&A

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