

Crowdfunding in the Public Sector: Infrastructure Development based on the MobilityCoin System

Master's Thesis of Chantal Kurz

Mentoring:

Dipl.-Ing. Philipp Servatius
Prof. Dr. Allister Loder

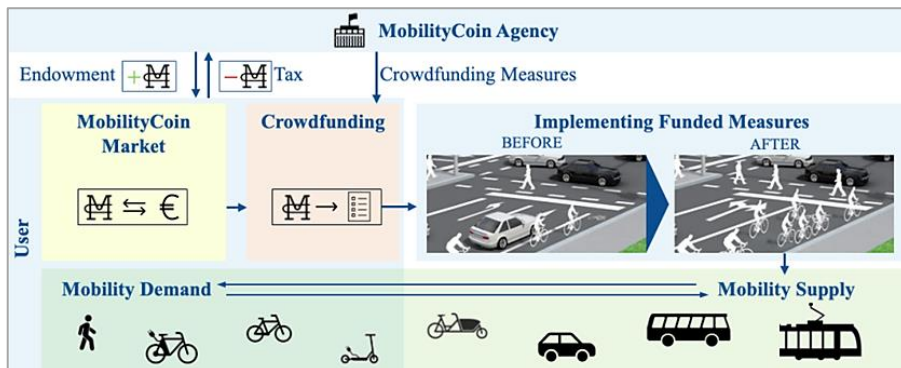


Fig. 1 Key Components of the MobilityCoin System

Civic crowdfunding in the public sector involves funding projects through small contributions from many individuals, aiming to engage citizens in decision-making and support projects of public interest. This approach overcomes financial barriers, enabling the implementation of otherwise challenging projects. One application is using crowdfunding for local infrastructure projects in a mobility traffic management system. The MobilityCoin system innovatively addresses carbon pricing challenges by establishing direct and transparent interaction with users, emphasizing the polluter-pays principle to reduce individual greenhouse gas emissions.

Exploring crowdfunding's effectiveness in the public domain involves using data directly from crowdfunding platforms. The dataset includes both successful and unsuccessful completed projects, providing a comprehensive overview of endeavors throughout their funding timelines.

Nr.	Project Name	Funding Goal	Successful	Description	Project Quality	Reward	Updates	Comments	Video	Images	Social Network	Target Sum	Score	%
1	Jersey City Bike Racks	\$ 20.116,00	Yes	X	X	X	X	O	O	X	X	O	6/9	67%
2	Protected Bike Lanes	\$ 36.085,00	Yes	X	X	O	X	O	X	X	X	O	6/9	67%
3	The Hampline	\$ 68.642,79	Yes	X	X	X	X	O	O	X	O	O	5/9	56%
4	Crosswalk Flags for Brinkley Road	\$ 1.000,00	No	X	O	O	O	O	O	O	O	X	2/9	22%
5	Safe Crossing at Overton Park	\$ 4.820,00	Yes	X	X	O	X	O	O	X	O	O	4/9	44%
6	Safe crossing for Sherman Avenues	\$ 1.645,00	Yes	X	X	O	X	X	X	X	X	O	7/9	78%
7	Safe Streets santa Rosa	\$ 16.605,49	Yes	X	X	O	X	O	O	X	X	O	5/9	56%
8	Bike shelter and ebikes	\$ 19.910,65	Yes	X	X	O	X	O	X	X	X	O	6/9	67%
9	Lakeshore Drive Bike Lane	\$ 24.896,00	Yes	X	X	X	X	O	X	X	X	O	7/9	78%
10	Mousehole AFC New Road	\$ 126.650,00	No	X	X	X	O	X	X	X	X	O	7/9	78%
11	Emobil statt Emissionen	\$ 1.158,07	Yes	X	O	X	X	X	X	X	X	X	8/9	89%
12	MINILOOP	\$ 150.000,00	No	X	X	X	O	O	X	X	X	O	6/9	67%
13	B.U.S Miami	\$ 5.534,00	Yes	X	X	O	X	O	X	X	O	O	5/9	56%
14	Ride, Rally, Ride	\$ 5.415,00	Yes	X	X	O	X	O	O	X	O	O	4/9	44%
15	The Story Shelter	\$ 14.464,00	Yes	X	X	O	X	O	O	X	X	O	5/9	56%
16	Flowers & Such: Boston Bike Lanes	\$ 7.000,00	No	X	O	O	O	X	O	X	O	O	3/9	33%
17	Walk your City	\$ 11.364,00	Yes	X	X	X	X	X	X	X	X	X	9/9	100%
18	Congress Street Crosswalk	\$ 65,00	Yes	X	X	O	O	O	O	X	O	X	4/9	44%
19	Heights Line	\$ 11.082,00	Yes	X	X	O	O	O	O	X	X	O	5/9	56%
20	Safe Streets Petaluma	\$ 7.707,00	Yes	X	X	O	X	O	O	X	X	O	5/9	56%
21	Bus/Life/Transportation Station	\$ 15.485,00	No	X	O	O	O	O	O	O	O	O	1/9	11%
22	Holly Street Pedestrian Access	\$ 333,00	No	X	X	O	O	O	O	O	X	X	5/9	56%
23	Church & Center	\$ 670,00	No	X	O	O	O	O	O	X	O	X	3/9	33%
24	Let's walk!	\$ 32.647,00	No	X	O	O	O	O	O	O	O	O	2/9	22%
25	The Safety Zone	\$ 4.670,00	No	X	X	O	O	O	O	O	O	O	2/9	22%
26	Shelters for SunTran - Ocala	\$ 22.917,00	No	X	X	X	X	O	O	X	X	O	6/9	67%
27	BankStop, Covered Bus Shelter	\$ 10.000,00	Yes	X	X	X	X	O	O	X	O	X	6/9	67%
28	Greenway Fiedly Bus Stop	\$ 10.000,00	Yes	X	X	X	X	O	X	X	X	X	8/9	89%

Fig. 2 Performance of Civic Crowdfunding Projects

Theory-driven success factors need detailed analysis, prompting a focused search for infrastructure-related civic crowdfunding campaigns within the MobilityCoin System. Rigorous project selection, considering system constraints, emphasizes the crucial role of small-scale projects in promoting alternative mobility, reducing emissions, and enhancing urban sustainability. Beyond their environmental impact, these projects contribute to neighbourhood improvement and community building, fostering increased engagement and support through crowdfunding.

Figure 3 utilizes a swimlane diagram to depict the stakeholders involved in the crowdfunding process across different campaign phases. Successful integration of crowdfunding into the MobilityCoin System requires careful consideration of a detailed process flow, outlining individual steps and dependencies.

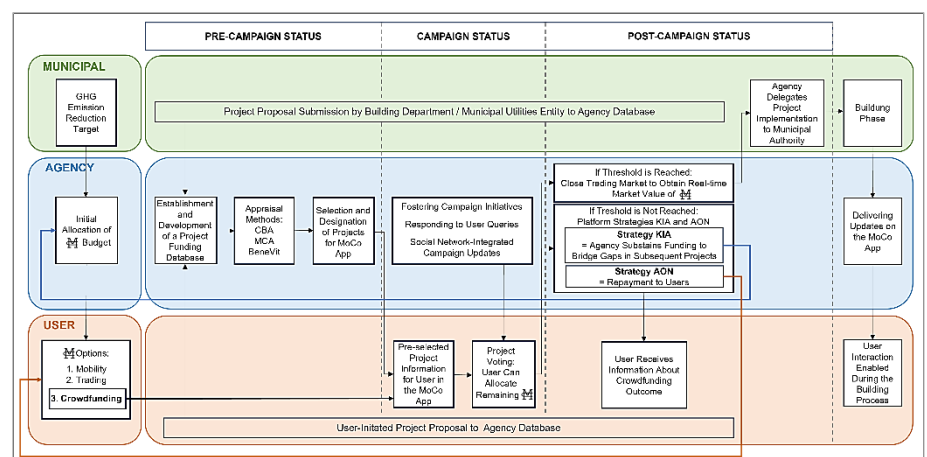


Fig. 3 Crowdfunding Process Flow in the MobilityCoin System

The integration of crowdfunding into the MobilityCoin System faces challenges in meeting diverse user needs, potentially resulting in inequalities despite ongoing efforts for social justice. Striking a balance between individual preferences and environmentally conscious choices is crucial, necessitating thoughtful incentives aligned with both personal benefits and positive environmental outcomes. Education plays a pivotal role in fostering a shift toward sustainable practices. Geographical limitations in crowdfunding can hinder effectiveness by restricting promising initiatives to a limited audience. A solution involves focusing on impactful local projects, enhancing the connection between supporters and initiatives for stronger identification and encouraging positive changes. Crowdfunding should prioritize user convenience, emphasizing user-friendly and transparent platforms. Meticulous analysis of long-term impacts is crucial for sustainable solutions, addressing both short-term issues and structural challenges, ensuring positive, lasting changes.