

Vitality Glow: A Novel Approach Based on Socially Engaged Urban Art to Motivating Public Physical Activity

Mengyan Guo¹, Lorenzo James², Jun Hu¹, Steven Vos^{1,3}

¹Department of Industrial Design, Eindhoven University of Technology ²Department of Information Systems, Eindhoven University of Technology ³School of Sports Studies, Fontys University of Applied Sciences

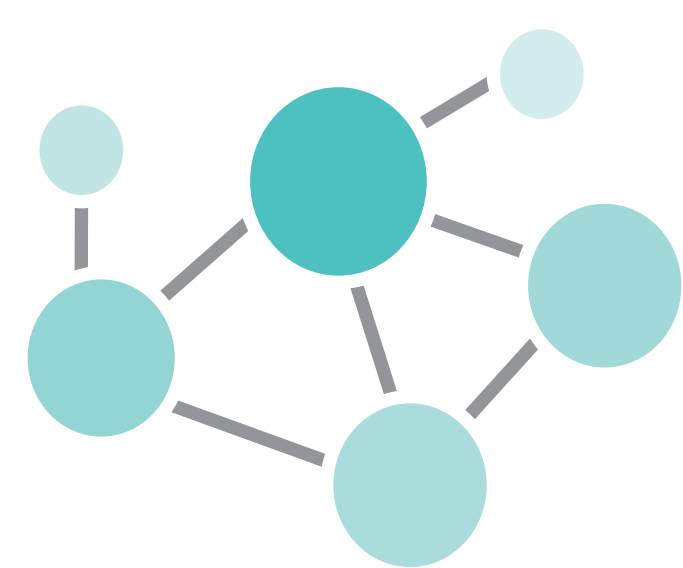
1 Why Do We Need A New Approach to Motivating Public Physical Activity (PA)?



Regular PA is a promising avenue for tackling the global physical inactivity pandemic, which will directly contribute to achieving many 2030 Sustainable Development Goals formulated by the UNGA[1].



The majority of existing PA-related apps use a monitoring strategy based on charts, graphs and statistical reports potentially harming motivation, and self-integrity.



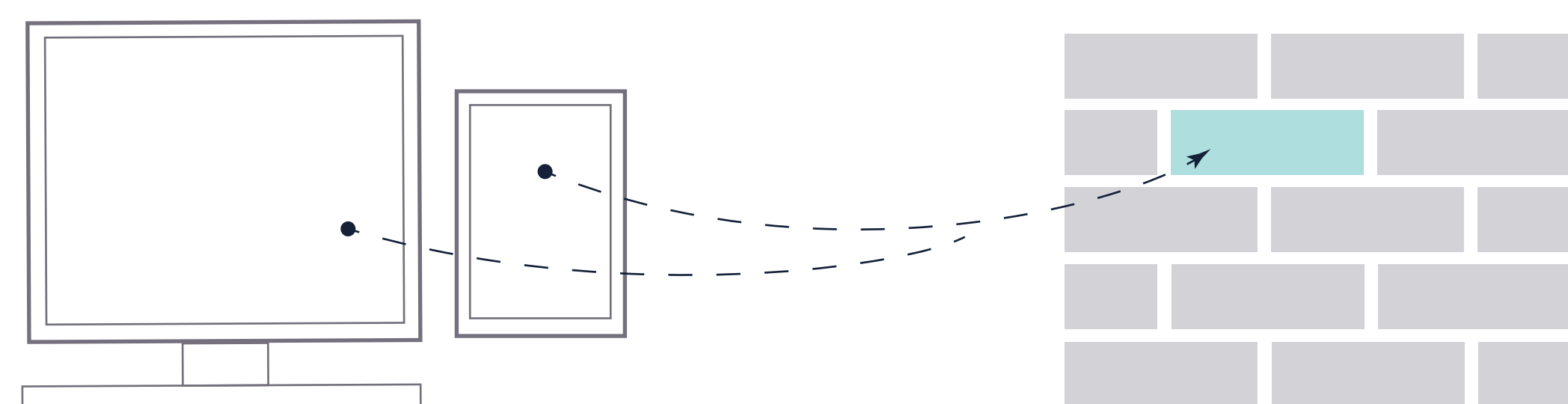
Increasing physical activity requires a systems-based approach and collaboration involving government and key stakeholders across multiple sectors including health, sports, urban design, academia, civil society, etc[1].



Socially Engaged Urban Art, an art medium, contribute to creating social change through collaboration with individuals, communities, and institutions in the creation of participatory urban art.

2 New Approach: Applying Gamification Elements in Urban Environment to Motivate PA

Gamification refers to the use of game elements in nongame contexts, which is a promising avenue motivating PA through digital interfaces, such as the display and phone. Adopting gamification elements, our approach extends the gamification from digital screen for individuals to the city surface as a tangible interface to motivate the public.



a. Assemblable Rewards

b. Artistic Performance Graphs

c. Stimulate Social Cooperation and Competition

3 Vitality Glow: Transferring PA Effort into Urban Art to Motivate the Public (Taking Eindhoven Glow as a medium to apply our approach in the public space)

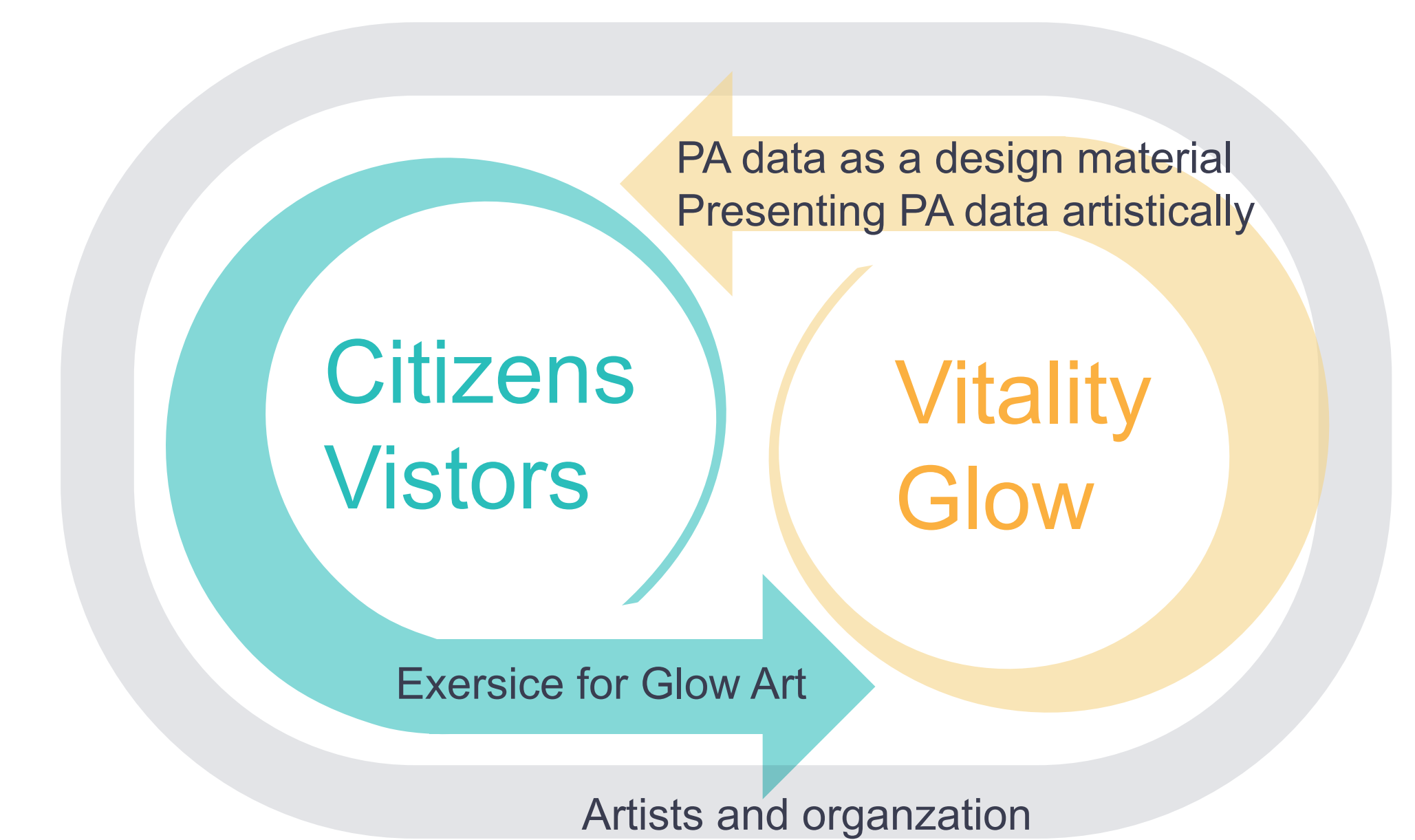
The Netherlands Light Map and Current Eindhoven Glow Model



Glow is an annual light festival in Eindhoven, attracting more than half a million visitors each year.

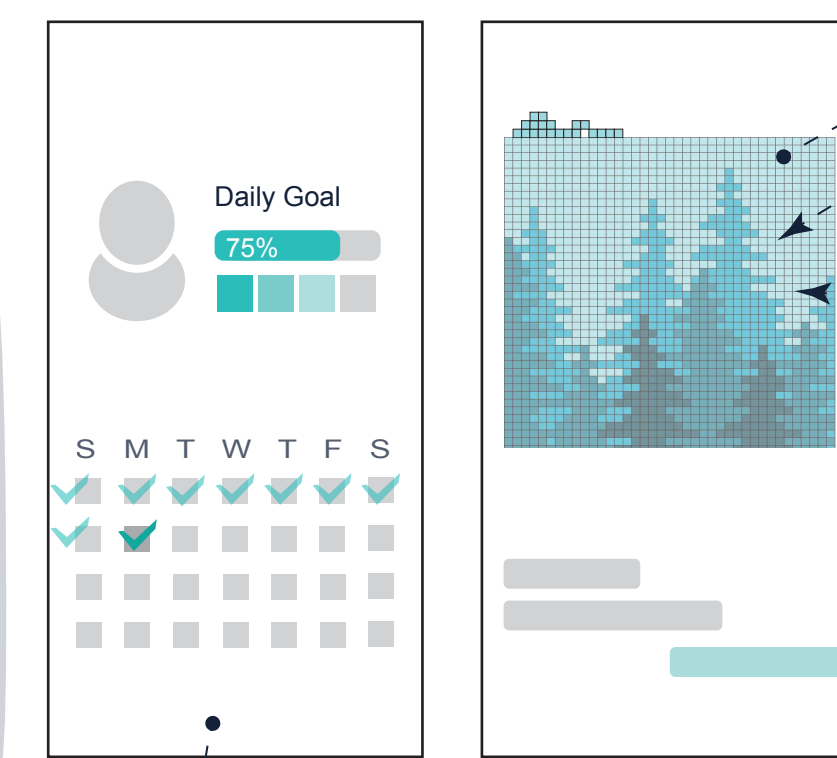
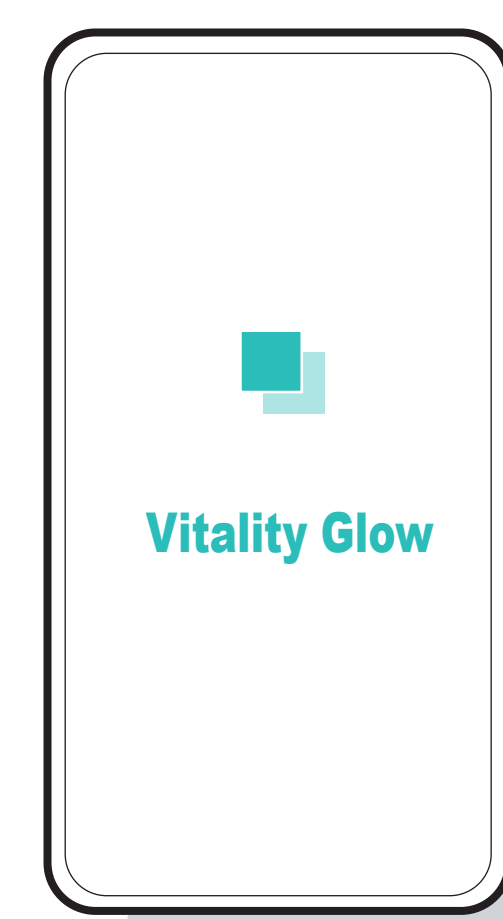


Vitality Glow Model



Vitality Glow Service system Map

Digital Platform

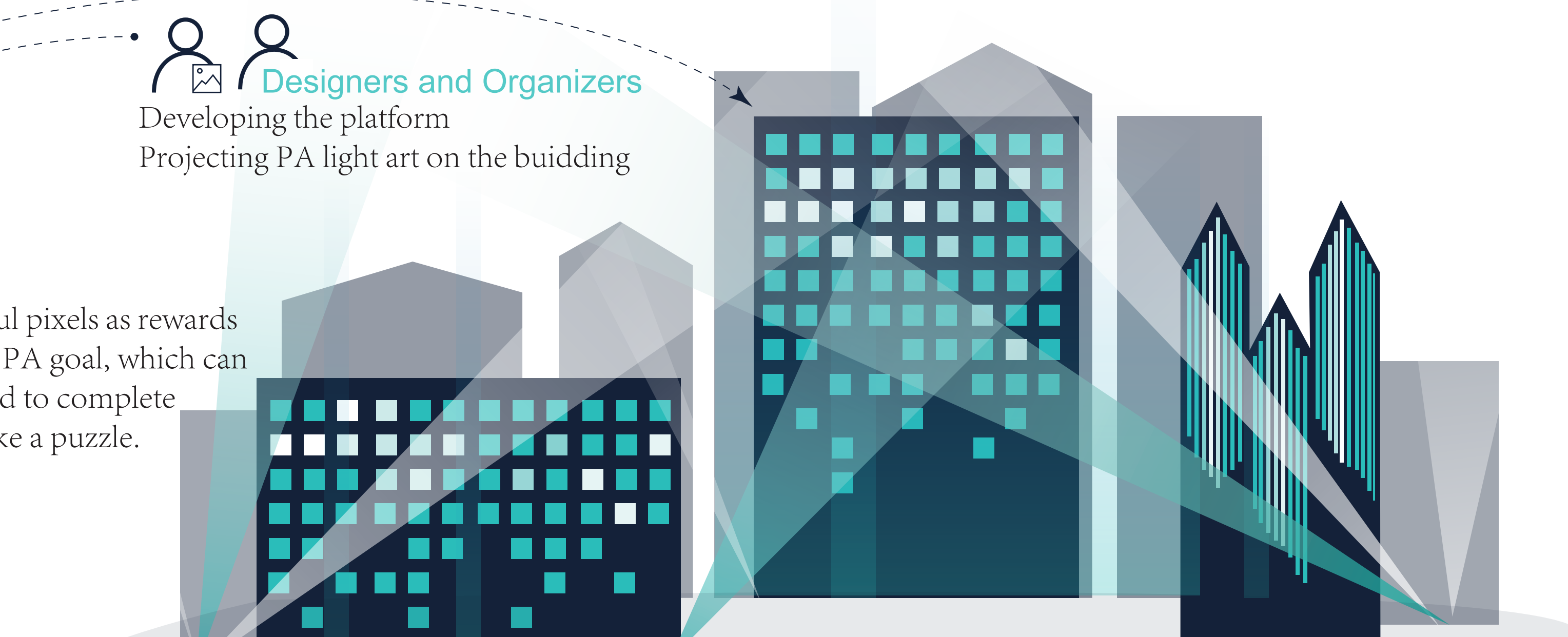


Everyone can contribute to a light art piece by being physically active.

Designers and Organizers
Developing the platform
Projecting PA light art on the building

Getting colorful pixels as rewards if reaching the PA goal, which can be accumulated to complete the artwork, like a puzzle.

The Public
Exercise for personal or group art with our platform



Vitality Glow Art In the Urban Environment

4 Future Work

- Develop the digital platform with PhD in Industrial Engineering and Innovation Sciences.
- Organize workshops to co-design the light art using PA data as a design material with designers and light artists.
- Conduct a preliminary user study to test the visualization of PA data and the prototype of the Vitality Glow platform for further iteration.
- Conduct an in-the-wild study with the Eindhoven Glow Festival to evaluate the effect of this approach on motivating PA.

[1] Global action plan on physical activity 2018 – 2030: more active people for a healthier world. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.