

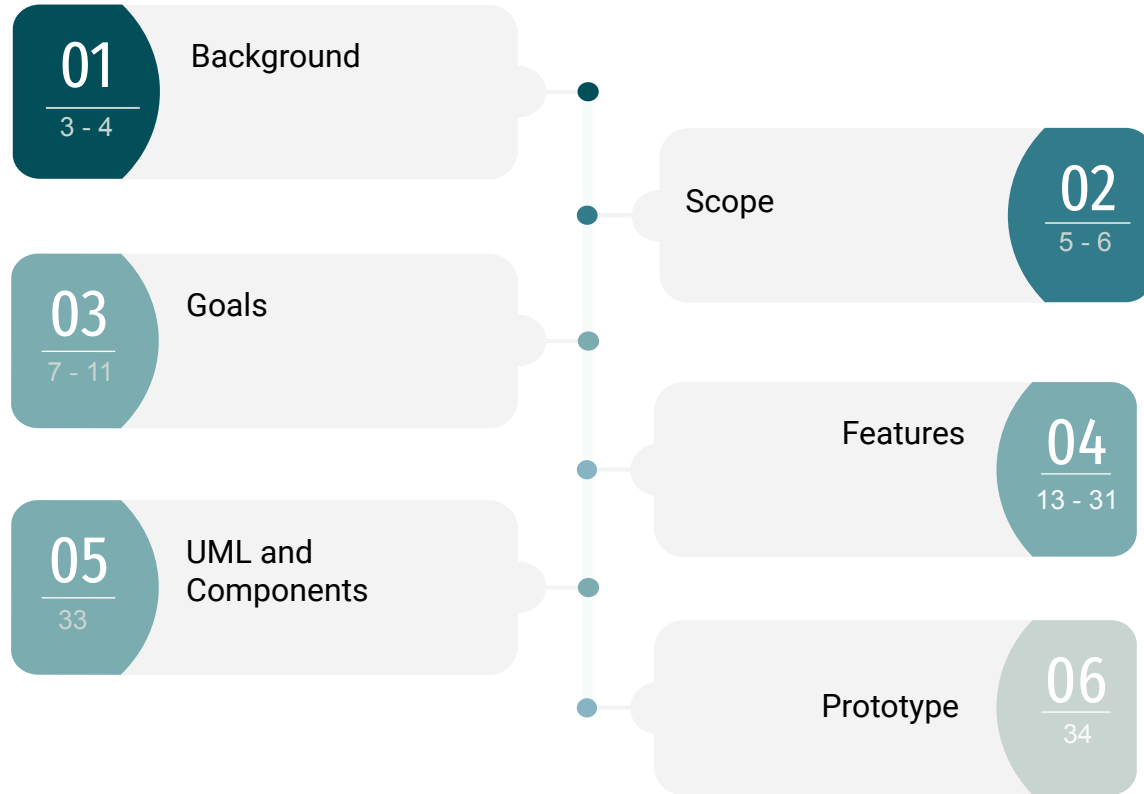


Turn Analog Things Smarter

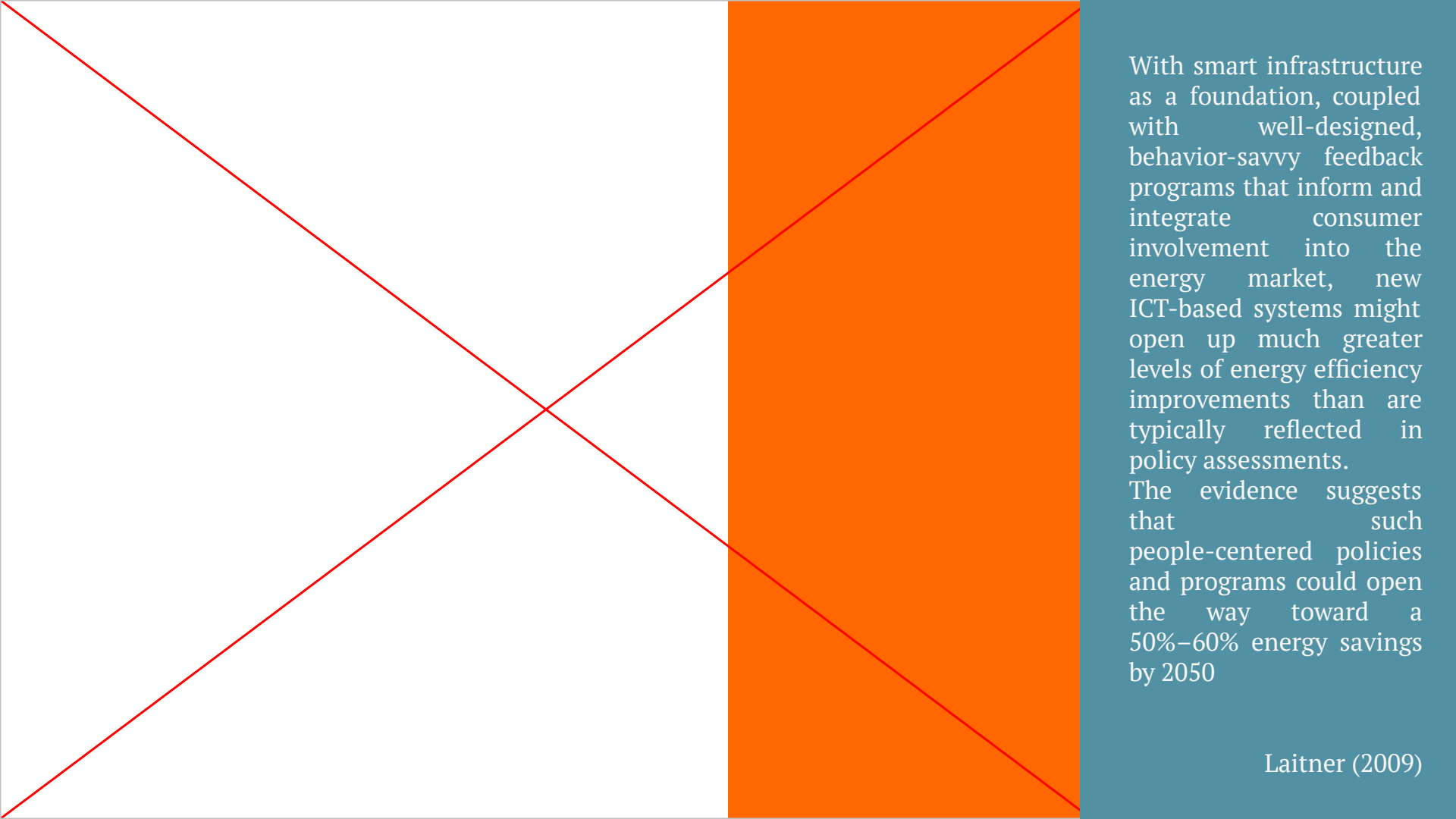
Platform : Tuya

Aprilia, Bamiduro, Rupanya

What we gonna talk about today



BACKGROUND

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With smart infrastructure as a foundation, coupled with well-designed, behavior-savvy feedback programs that inform and integrate consumer involvement into the energy market, new ICT-based systems might open up much greater levels of energy efficiency improvements than are typically reflected in policy assessments. The evidence suggests that such people-centered policies and programs could open the way toward a 50%–60% energy savings by 2050

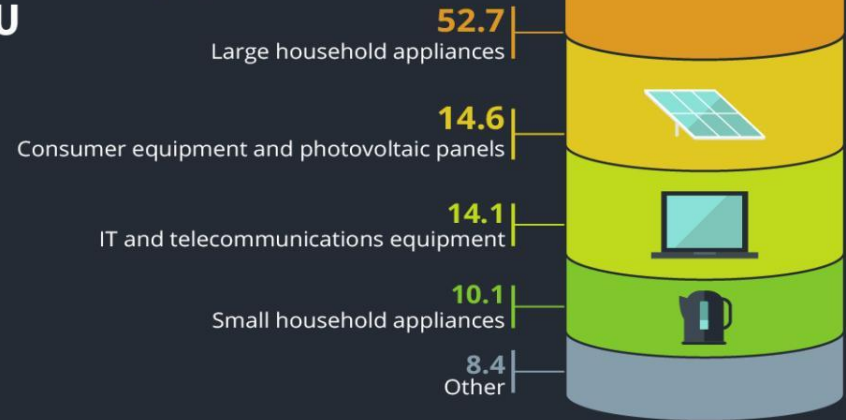
Laitner (2009)

In 2017, the world generated 44.7 million metric tonnes of e-waste and only 20% was recycled properly.

<https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93325/e-waste-in-the-eu-facts-and-figures-infographic>

ELECTRONIC AND ELECTRICAL WASTE IN THE EU

Total collected electronic and electrical equipment in the EU
(%)



Source: Eurostat (2020)



europarl.eu

WHAT IS VAMPIRE ENERGY?



Appliances that leech energy even when they are shut off are modern vampires, wasting power and increasing electricity bills.



Although one or two devices or appliances may not make much of a difference on your bill, a whole house full of electronics can add up.



Once a device finishes charging, for example, or when a TV is off, power is still flowing. Because it often goes unnoticed, we also call it phantom energy.



GOALS & FEATURES

Connect old appliances via smart plug, so the appliances can be controlled remotely



Auto turn-off power when the phone battery is full

SCOPE

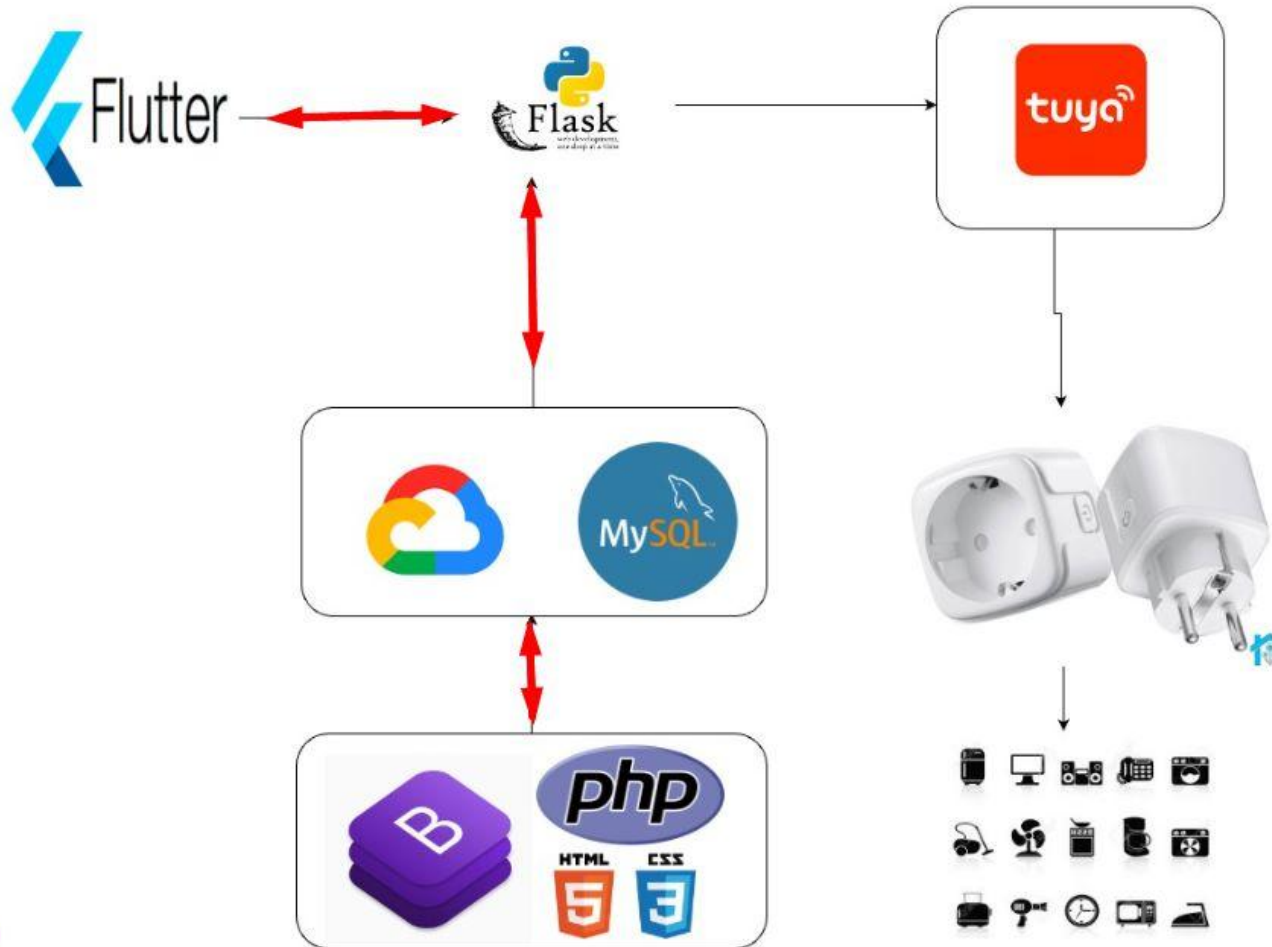
The project scope is limited to retrofitting analog appliances with smart plugs and does not include the development of new IoT devices or the creation of a new smart home energy management system

TECHNOLOGY & PROTOCOL

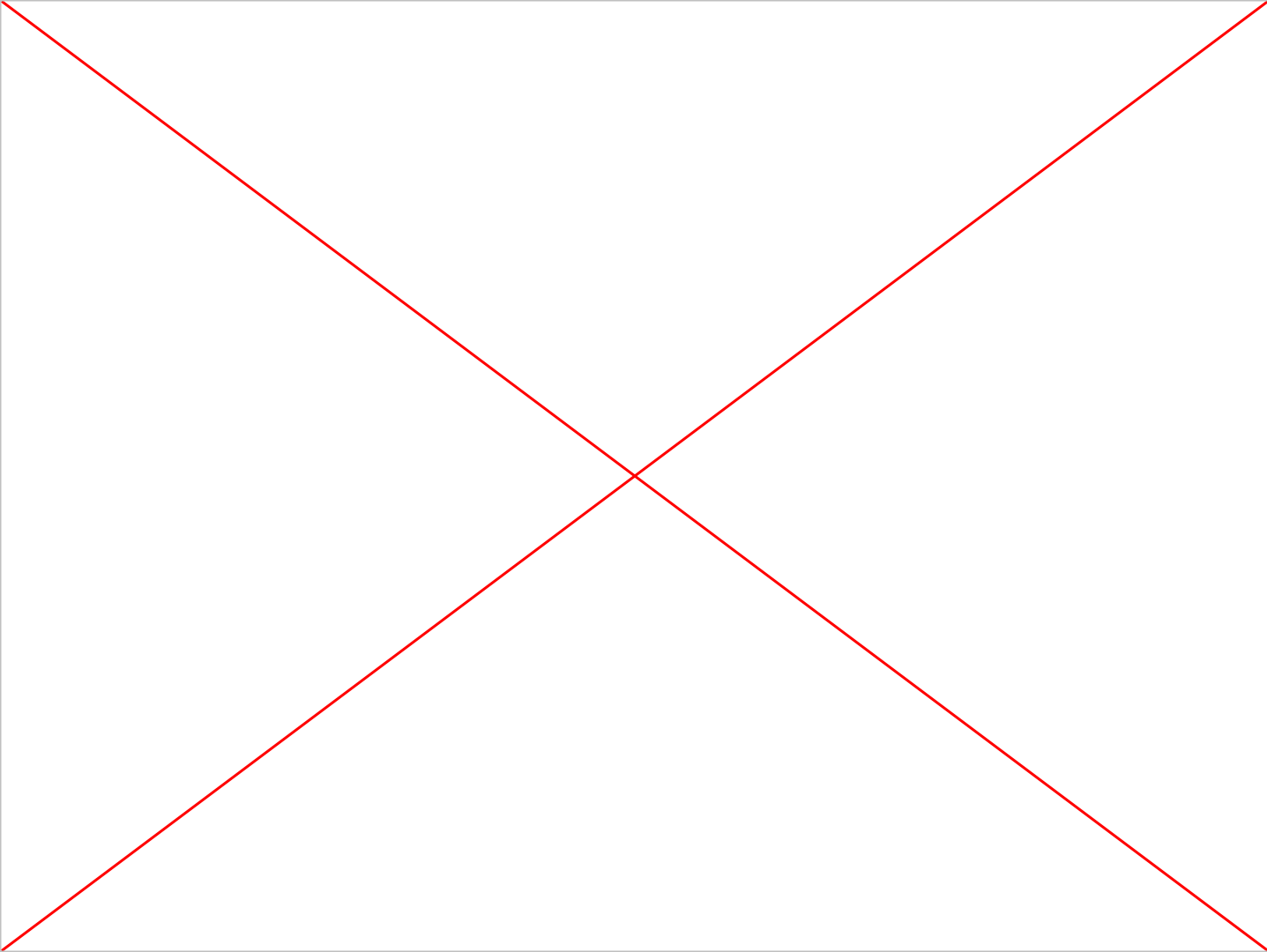




DESIGN COMPONENTS



PROTOTYPE



Artifacts of the Project

Mobile Application:

<https://github.com/KorawitRupanya/BatteryCheckerFlutter>

API service:

<https://github.com/cinapr/RetrofitOldAppliances>

Frontend Web Application:

https://github.com/Bamistand/IOT_Frontend_Project

References

- Eliminate Vampire Power. (2017, October 19). Sustainability at Harvard.
<https://green.harvard.edu/tools-resources/green-tip/eliminate-vampire-power>
- Recycling of Waste Electrical and Electronic Equipment: A Review" by X. Zhang et al. (2019). Smart Home Energy Management System: Connecting Old Appliances to the Internet of Things" by P. Singh and S. S. Tyagi (2020).

THANK YOU