

MODERATION & MEDIATION

We have described a prevalence of complex interactions across multiple stakeholders in residential high-rises. We believe that services that offer support for steering, mediation and moderation would help liberate residents' opportunities and reduce conflict. Although we are unsure how this should be provided (should it be outsourced, managed collectively or by a trusted resident?) or how it should be applied (what is the mechanism of policing, of intervention, of appeal?) we believe that it must be explicitly addressed and assigned.

Communication

We have stated that it may be more natural and efficient to orient communication around the structure of a building. The place-based abstractions (i.e. endpoints defined by apartments, floors, buildings etc.) would also benefit from notions of affiliation: the owner of the car with registration xyz or the owner of parking bay nine. Emergency messaging could be supported by exploiting all intended recipients' available channels (SMS, email, forums, Twitter, Facebook etc.). Provision of support for fully anonymous communication (rather than reliance on, for example, privacy preserving pseudonyms) will help protect people from reprisals and can offer a means for participation amongst people vulnerable to discrimination. The service will impose sensible policy restrictions upon the communication scope, such that it remains both useful and resilient to abuse.

Management

A resident or stakeholder's affiliation with a high-rise can change at any time and services must be designed

with this in mind. Here we consider the implications upon data management and authentication services.

DATA MANAGEMENT

We have briefly outlined the information services required to provide support for high-rise communities. Yet there are also questions around the scope of data use. Who owns it and how should it be exploited? It appears reasonable that any data related to a development should be managed and exploited by the *current* community. The responsibility for the management of portions of this data will rest with groups or individuals, and should be governed by their affiliation with the community. In this way, data may be thought of as belonging to the *building* with residents acting as custodians. For example, so long as a person lives in an apartment, they may manage and contribute to the pool of information that relates to it. When they leave, this information should remain with the apartment. Similarly, a management company should be permitted to access and use data related to a development and its occupants as required, but this data should remain available to a future management company if they are replaced. Data about high-rise communities and their properties will have value to local businesses. With an increase in the sophistication of this data comes a need for services that offer principled and scoped access for third parties and applications [7].

AUTHENTICATION

Authentication approaches must take account of two types of resident: off-site (non-resident owners) and on-site (resident owners and tenants). Development occupancy and ownership records are rarely up-to-date and/or accurate given the transience of residency and

ownership. We're unaware of any robust, purely technical solution capable of confirming a registrant's affiliation with a property. With on-site residents, one approach is to post access credentials to each resident's address (an approach taken by Nextdoor [6]). Another is to use a shared secret that can only be obtained locally, although the particular mechanics of this will likely differ from development to development. Detecting changes in occupancy and ownership is harder. The solution may lie in making inferences based upon residents' data and behavior (e.g. the services/tools that they use) and offering support for residents to police their own community.

Conclusion

Communities living in high-rises are especially vulnerable to a range of problems. High-rises are hard to maintain, expensive to run and their residents will often need to digest complex information and negotiate difficult processes. Many problems are shared and resolution can require sophisticated collaboration in a challenging environment. Social media tools are commonly adopted by these communities but they offer limited support. New startups [6] have begun to emerge that specifically target residential communities, but we have argued that a fuller set of services are required to meet the needs of high-rise communities and to encourage innovation. We have briefly described the characteristics of some of these services and the challenges in their design.

Civic participation, social cohesion and community engagement have long been held up as important goals in urban environments. By better supporting the challenges inherent in living in large scale high-rises we may go some way towards meeting these goals.

References

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