The residential buildings in recent years, have acquired large sizes and look like small towns. So, it is a challenge to manage a place where many families live. These families have cultures and habits of all kinds. There is also a large movement of people, vehicles and materials in different parts of the building, including parking, playground, party room, sports court, pool, exercise room, recreation room and sauna. The older are these buildings, the greater the problems of maintenance.

The Apartment Manager has several activities that range from managing employees to take care of the building facilities. The administrator is elected by the people for a term of one year. The remuneration of the administrator, it is usually only the exemption of condominium quota, and so it is not feasible that there exclusively dedicated to perform this activity.

The solution proposed in this prototype is intended to help people who accept the challenge of managing a residential condominium and at the same time, keep another job which is their main source of income. This solution uses elements based on IoT technology.
Persona

Vivienne Silva
Apartment Manager and expert in SAP HCM-PY

“For me, the most important is to take care of the residents as if they were part of my family to solve the problems properly and quickly.”

About
• 42, married, 2 children, 5 years of building administration. 4 years of SAP-HCM.
• As I hold two jobs, I need help my decisions with quick access to information so that I have a good performance. If possible, some actions to be taken are carried out autonomously or automatically.
• I work all day as a consultant, but I have permanent contact with the building of the events during the day. Eventually I give instructions for building officials.

Responsibilities
• Taking care of the residents.
• Manage employees.
• Manage suppliers.
• Manage payroll.
• Manage the accounts.
• Manage areas of the building.

Main Goals
• Improve the quality of services offered by the condominium.
• To improve the speed of response to incidents occurring.
• Improve access control to the condominium dependencies.
• Reduce spending on permanent expenditure.

Needs
• Control staff in areas such as presence, activities and movement within the building.
• Control access of vehicles to the garage.
• Control the consumption of water, electricity and gas.
• Control the use of common areas such as the playground and the swimming pool.
• Control the use of elevators.

Pain Points
• Lack of time to complete the building administrator activities.
• The information slow to get to the decision-making. And often, when they arrive, they are confusing and they depend on interpretations of other people.
• Some decision-making are simple and could be performed automatically.
• Control of residents who do not pay the condominium fee.
As an Apartment Manager…

I need a way to manage and control a building…

So that I can improve the quality of life of people living in it and with little impact on my personal and professional life.
# UX Journey

## User Experience Journey

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>MINDSET</th>
<th>FEELING</th>
<th>TOUCH POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>She wakes up.</td>
<td>I have a full day!</td>
<td>Perfect</td>
<td>Home</td>
</tr>
<tr>
<td>She goes to the gym.</td>
<td>How nice. Is empty. I arrived early!</td>
<td>Perfect</td>
<td>Front desk clerk</td>
</tr>
<tr>
<td>She returns home and eats breakfast.</td>
<td>The breakfast is ready</td>
<td>Perfect</td>
<td>Home / Husband</td>
</tr>
<tr>
<td>She gets dressed up to go to work.</td>
<td>What clothes should I wear? The weather is good?</td>
<td>Perfect</td>
<td>Closet</td>
</tr>
<tr>
<td>She leaves home.</td>
<td>The traffic is heavy?</td>
<td>Perfect</td>
<td>Bus</td>
</tr>
<tr>
<td>She arrives at work.</td>
<td>I have a few remaining activities of the day yesterday. We will now have new ones?</td>
<td>Perfect</td>
<td>email / System</td>
</tr>
<tr>
<td>She assembles a list of activities of the day.</td>
<td>I have to stay on the list.</td>
<td>Perfect</td>
<td>System</td>
</tr>
<tr>
<td>She performs consulting activities SAP HCM-PY.</td>
<td>I'm very happy to perform the activities of HCM-PY.</td>
<td>Perfect</td>
<td>System</td>
</tr>
<tr>
<td>She has a Lunch.</td>
<td>I eat what I like, and talk with my friends.</td>
<td>Perfect</td>
<td>Waiter</td>
</tr>
<tr>
<td>She tries to perform some management activities of the building while working like HCM consultant.</td>
<td>Difficult to manage, since I have no direct control.</td>
<td>Perfect</td>
<td>Telephone / bank / documents</td>
</tr>
<tr>
<td>She leaves work.</td>
<td>The traffic is heavy?</td>
<td>Perfect</td>
<td>Bus</td>
</tr>
<tr>
<td>She leaves home.</td>
<td>How nice! I'll see the kids. Will their day was good?</td>
<td>Perfect</td>
<td>School</td>
</tr>
<tr>
<td>She goes get the children in school.</td>
<td>The simple problems that could have been resolved without my intervention. Why was I informed of this incident only now?</td>
<td>Perfect</td>
<td>Building</td>
</tr>
<tr>
<td>She has a meeting with residents and staff of the building.</td>
<td>Dinner is ready. Just eat.</td>
<td>Perfect</td>
<td>Home</td>
</tr>
<tr>
<td>She has a dinner.</td>
<td>The movie I want to watch is available on NETFLIX! The book is very interesting!</td>
<td>Perfect</td>
<td>Home</td>
</tr>
<tr>
<td>She watches a movie or reads a book.</td>
<td>Finally I will rest!</td>
<td>Perfect</td>
<td>Home</td>
</tr>
<tr>
<td>She will sleep.</td>
<td></td>
<td>Perfect</td>
<td>Home</td>
</tr>
</tbody>
</table>
Prototype

Prototype screens for an IoT application to solve your PoV

This Mockup Prototype is available at:

https://standard.build.me/api/projects/61fd88a27575651e0cd2ac94/prototype/snapshot/latest/index.html#/14774337971713640_S7
The system has IoT technology to carry out the control and monitoring of four elements with which all the apartment manager must deal daily. Staff, residents, areas of the building and expenses.

The employee access control is done by an RFID card. With this card, you can tell if the employee is in the building and in which area. The system also keeps a local history where the employee was. The apartment manager can access the camera from the place where the employee is now. It is also possible to know the faults of employees.

Residents, as well as the staff, access the various areas of the condominium through a tag with RFID technology. So, it is possible to know whether the resident was in swimming pool, the court, in the club house or the elevator.

As previously said the areas of the building are monitored via IoT cameras and sensors that pick-up signals sent by the RFID badges. It is possible to know if a resident went to the swimming pool without medical authorization, or used the court without being with an appointment, which can incur any fines that the system totals alone and charges in the next month condo fee without any intervention by the liquidator. However, the apartment manager has a system which generates the report on the fines. The swimming pool also has an IoT sensor to measure the temperature of water and alert the apartment manager.

There are also sound IoT sensors in common areas for the case of excessive noise. In the garage, but the sound sensor, the IoT RFID sensors capture high speed of vehicles and identify these vehicles for the application of any fines. The vehicles also have an RFID badge. For vehicles outside the condo, there is recognition of the plates by the cameras, to be investigated because of an unauthorized vehicle into the parking lot.

For the control of the accounts, smart meters were installed (IoT) in the water supply, electricity and gas. So, the liquidator and residents can monitor real-time the costs and decide with the intention of reducing spending.

The elevators inform, through an IoT device if they are in operation and how people have used them. In this case, the events are when an incident is only one elevator is on, all three elevators on, or if none is on.