Self Healing water networks or Smart water networks?

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Assumptions
- Water level sensors in the borewell, quality sensors in the borewell, flow/pressure sensors at various points in the networks
- Scada like system with a ODMS(A historian)

Use case 1 : Dashboard of water usage and related patterns
Actor : Management, Admins
Main Activity :
- Will be presented with a dashboard on water usage patterns across buildings(hostels, Academic block, cafeteria) and activities(Cooking, gardening, cleaning, etc) with options to drill down to specific granularity.
- Reports on electricity consumption due to pumping.
- Reports on water consumption vs number of students in campus.
- Analysis of peaks and troughs in the usage of water.
- Water usage in the campus w.r.t weather
- Usage pattern of water throughout the day and hence pressure at which water needs to be pumped.
- Water requirement prediction in the coming days vs predicted levels in the storage.

Use case 2: Alerts and Notifications
Actor : Admin/Estate manager
Main Activity :
- Will be provided with alerts for
  - Probable leaks
  - Inefficient pumping
  - Water contamination or excessive chemical levels in water
  - Inefficient pressure or excessive pressure at outlet points

Use case 3: Input usage data through mobile/web interface
Actor : Student, Housekeeping incharge
Main Activity :
- This is planned for the case where there aren't extensive usage collection sensors throughout the network.
- This will be a web/mobile interface through which actors are going to be submitting data about their normal usage.
- The submission of data need not be done on a daily basis. The actors can submit data detailing their regular activities and the typical water consumption for each, say 2 buckets for bath daily, 5 buckets for washing clothes once in three days. They will be able to link their usage behaviour to specific time intervals(typically days, weeks or months)

Use case 4: Reporting leaks through mobile/web interface
Actor : Student
Main Activity :
- Students can report leaks in the respective washrooms