BMS working with Asset Lifecycle Management

Russ McKay – IBM

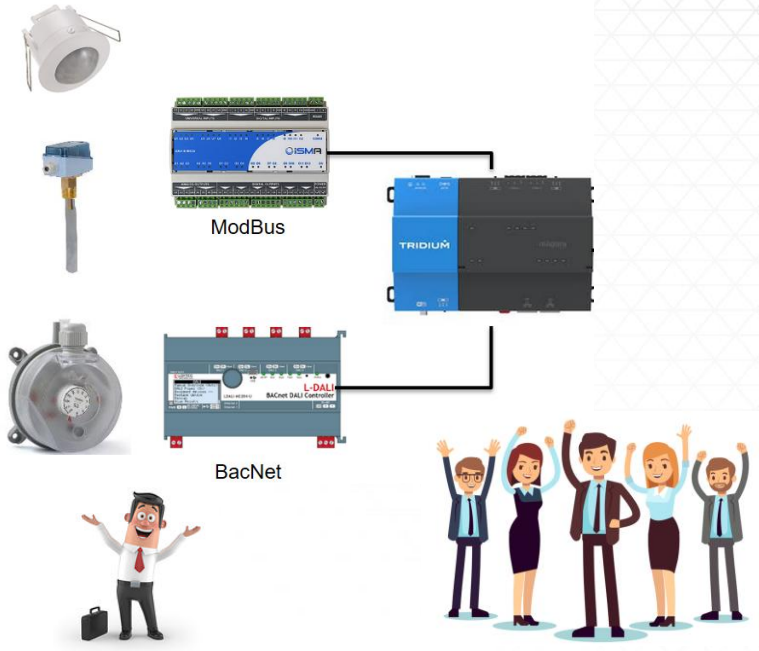
1 + 1 > 3 when BMS meets ALM

By integrating BMS with asset lifecycle management systems / CMMS / FM customers will realize significant savings in the overall management of their facilities and assets.

BMS Systems control building assets

The BMS is in control – it does as it is asked

- If we adjust a temperature to 21 deg C then we expect the BMS to do what ever is necessary to achieve this temperature. It will use what ever energy is required, providing heating and cooling, controlled air flows etc.
- The space occupier is comfortable and happy.
- No complaints to the facility manager
  - The occupier may gave no interest in the cost of providing this environment.
  - No appreciation that the AHUs, chillers, heaters and running at 100% and probably fighting each other to achieve this temperature



CMMS Manages buildings assets

The CMMS keeps track of asset health and maintenance

- Maintenance, both preventative and corrective, is carried out on assets as and when required.
- If there are no issues with the building environment, noting broken and no complaints, then the maintenance team are happy. They just need to keep the building functional, and keep the occupiers happy.
- A lot of the time, the maintenance teams don't have any interest in the energy usage etc. They just let the BMS do what it does until it breaks down!

The problem is the cost of providing the perfect environment

- It *can be* very expensive to control the environment
  - Running assets at a higher rate than necessary (e.g. invertor controlled motors running too fast, heating and cooling at the same time, not replacing blocked filters etc.)
- However, tuning the BMS and associated assets, maintaining the systems better, changing the maintenance regime from reactive and preventative to condition based.
- Integrating the business systems and processes across the BMS and FM domains will deliver big savings.

High level architecture

The integration is bi-directional and can both monitor and control equipment via Niagara.

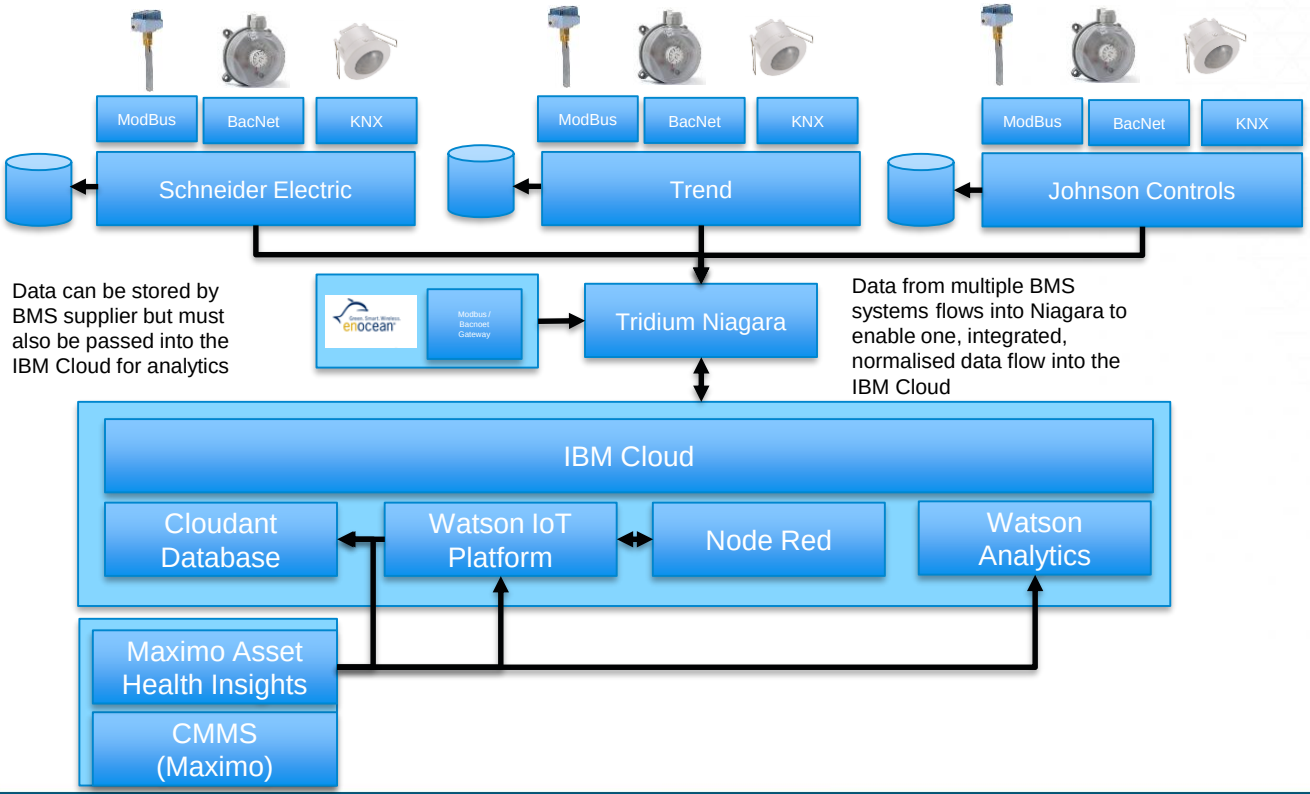
MQtt

IBM Watson IoT Platform

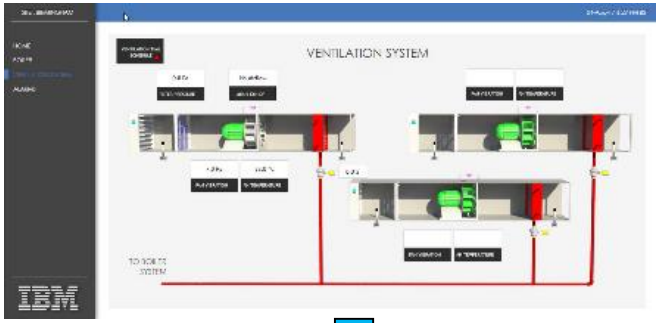
IBM Analytics

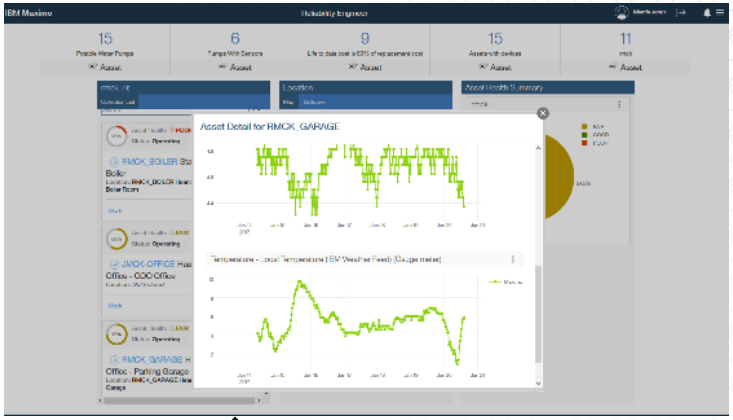
Tridium Niagara now includes an MQtt driver as standard. MQtt is a protocol used to transfer machine data – in this case, sensor data from the Niagara into the IBM Cloud

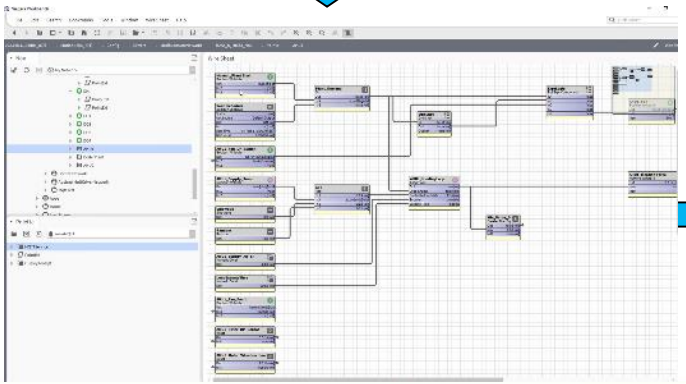
High Level Architecture of End-to-End Solution

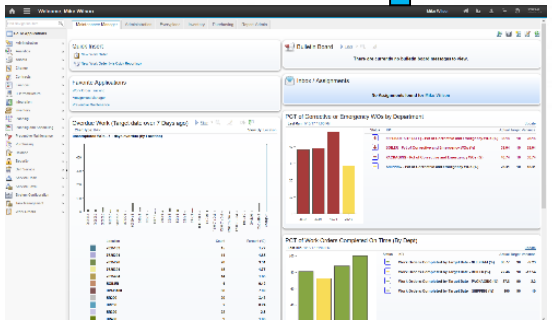


Typical use experience









Who are we working with on combined BMS & CMMS

- We are working manly with companies that own, lease or manage large amounts of real estate:-
  - IBM (many buildings including 500 data centres)
  - Toyota Manufacturing around Europe and the US
  - ISS
  - Bouygues
  - Large conference centres in the UK
  - Large service provision provides in Belgium
  - And many more

Why do organisations want to work with us?

- We can assist companies on making major cost savings
  - Energy savings of typically 20%
  - Maintenance savings of typically 30%
- We can help change the way maintenance if performed – moving from traditional preventative regimes into condition based – this significantly reduces maintenance costs and can lengthen the life of an asset.
- We can realise the IoT dream – most people are highly interested in this but have little idea how to put this into practice – IBM, Tridium and our business partners are now doing this on a daily basis.

How do we start on this journey

- Determine the use cases that you want to address
  - Energy reduction, space management, environment improvements
- Review the information from your BMS and make this available in a standard protocol (e.g. MQtt – this is already supported in Niagara 4)
- Define the rules within Niagara that allow you to generate work orders, change requests, asset metering information etc. into Maximo so that you can ‘react’ to what you building is telling you.
- Start a pilot implementation, run it for 6 months, asses the results and then (when you are delighted with the results!) roll out a production system.
- Don’t procrastinate – get started as soon as you can!

Summary

- Tridium Niagara is now supplied with an MQtt adapter allowing any Niagara data to be published to Maximo or Tririga via the IBM Cloud.
- Customers will benefit from the integrated operational and facility management environments.
- Niagara provides edge analytics on BMS and IoT sensors while Maximo and Tririga use these insights to realise condition based and predictive maintenance regimes.
- The combination of our technologies adds a further level of automation to the management of our assets, in addition to providing a framework to significantly reduce operational costs.

Thank you.....