The Innovation Hub
for Affordable Heating and Cooling

Lesson Learnt Report

i-Hub Switch Data Clearing House

Project DCH2 (Version 1.0)

18 October 2020

SWITCH AUTOMATION

About i-Hub

The Innovation Hub for Affordable Heating and Cooling (i-Hub) is an initiative led by the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH) in conjunction with CSIRO, Queensland University of Technology (QUT), the University of Melbourne and the University of Wollongong and supported by Australian Renewable Energy Agency (ARENA) to facilitate the heating, ventilation, air conditioning and refrigeration (HVAC&R) industry's transition to a low emissions future, stimulate jobs growth, and showcase HVAC&R innovation in buildings.

The objective of i-Hub is to support the broader HVAC&R industry with knowledge dissemination, skills-development and capacity-building. By facilitating a collaborative approach to innovation, i-Hub brings together leading universities, researchers, consultants, building owners and equipment manufacturers to create a connected research and development community in Australia.

Primary Project Partner

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Lessons Learnt Report: DCH2 Version 1.0

i-Hub Lessons Learnt Report

Lead organisation	CSIRO and Switch Automation		
Sub-Project number	DCH2		
Sub-Project commencement date	01 Feb 2020	Completion date	15 December 2020
Report date	18 October 2020		
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Lessons learnt

Lesson learnt #1	Working with building data

Category	Commercial					
Choose from:	*Technical*	*Commercial*	*Social*	*Regulatory*	*Logistical*	*Other (specify)*

Describe what you learnt about this aspect of the Project.

The unfortunate truth is this is a lesson that Switch know only too well, having worked with data for commercial buildings since 2012. Owners, operators and most people who are not deeply involved in building systems assume that in 2020, that building systems would be smart, connected, digital with a dearth of readily available and quality data. They are told they have BACnet or Modbus, or open systems, or IP connected systems. To some extent they might have, but there is a giant leap from the reality of connected building systems to the type of data quality that is required to achieve a significant ROI on FDD in less than 6 months. In so many cases, our building engineers spend most of the first year wrangling building data into a coherent data set that can be analysed for opportunities in cost savings, energy efficiencies, comfort improvements or reduced maintenance.

I think the CSIRO team have been frustrated by the lack of progress from our team between the establishment of data connectivity in April to results starting to flow in September. As a company we know we need to do more to manage expectations. But as an industry there is a lot that education could do to prepare people for the reality. The good news is, as more and more buildings have their data exposed to owners and service providers, the commissioning companies will be forced to improve the quality of the installations they are responsible for.

Please describe what you would do differently next time and how this would help. What are the implications for future Projects?

We assumed that CSIRO personnel would know some of the things we know. We should have been more forthcoming about what we expect vs what we found. And explain the progress or hurdles more clearly to the stakeholders.

If your Project learnings have identified any knowledge gaps that need to be filled, please state it below.

Almost nobody knows how badly commissioned building systems are. This is one of the outcomes of the DCH – to shine a light on these poor standards of professionalism and to raise the bar. We should run a series of educational pieces to help people understand this and why it is so exasperating and difficult.

Lesson learnt #2	Operational teams do not necessarily welcome open data

Category	Commercial/Social					
Choose from:	*Technical*	*Commercial*	*Social*	*Regulatory*	*Logistical*	*Other (specify)*

Describe what you learnt about this aspect of the Project.

The operational teams managing buildings have often been in the field on the same assets for a number of years. Introducing an analytics package that saves cost and energy, improves comfort or maintenance is sometimes perceived as a threat by incumbent staff who may perceive that the system is showing up how poorly they have been performing in their role.

Please describe what you would do differently next time and how this would help. What are the implications for future Projects?

This is change management 101. You have to bring everyone along on the journey, explain the benefits, make them part of the solution, explain the professional or career path benefits. Often our programs are not directly with the operational teams and so we don't necessarily get the opportunity to do this. We probably could have done a better job of briefing the operational teams about what the DCH is and why it is important. Explained what they could expect.

If your Project learnings have identified any knowledge gaps that need to be filled, please state it below.

Smart building technologies need a lot of education across the entire organisation and all stakeholders. There is no quick fix, it's a big job.