Organisational Integration of Drone Technology - Practical lessons
Dr. J. Spencer[1], Ms. S. Harris, Mr. M. Bond, Mr. J. Andrew

ABSTRACT: *The Institute for Drone Technology helps organisations integrate drone technology in order to improve safety, increase efficiency, and capture innovative new opportunities. We have worked across a number of industrial areas from mining to local government, maritime to infrastructure, and our clients include organisations large and small.*

Having been at the forefront of drone integrations management across sectors we have learned much about the practical issues organisations face when introducing the new technology, and how to best achieve the aims of the organisation, and avoid the pitfalls.

Our presentation will provide a concise overview of: The legal and regulatory framework for the use of drone technology, Examples of capabilities attained by current clients, and how integration was successfully achieved, Examples of upcoming capabilities, Lessons learned about how to avoid pitfalls

KEYWORDS: keywords in lower case separated by commas, finishing with a full-stop.

1 Introduction

The Institute has been helping organisations integrate drone technology over the past three years. We deal almost exclusively with mid to larger size organisations, both private and government. With over fifty client interactions and engagements we have built knowledge around how to effectively manage the integration process.

The introduction of drone technology is driven by three key capabilities the technology brings. These are:

1. An increase in safety

2. An increase in efficiency

3. The ability to innovate, most commonly through the collection, interpretation and analysis of data collected by the drone.

While organisations differ in terms of the key initiating factor that drives the interest in integration, it is this three-fold capability increase that clients wish to attain in integration projects as a whole.

In order to use drone technology to attain these capabilities it is essential that the integration take place in a measured and managed process that protects the people and reputation of the organisation, while simultaneously achieving the goals within return on investment parameters. This paper outlines some the lessons we have learnt through conducting drone integration projects across many industry sectors.

2 Methods

We deploy a two-phase methodology for integrations projects. Phase 1 involves a discovery and information transfer process. On the one hand, it is about information transfer from us to the client about the regulatory framework within which drone technology operates, the general capabilities of drone technology, and the experiences of similar organisations with the use of drone technology.

On the other hand we come to understand the industrial operating environment of the client and their key performance metrics. Once we understand these we build and integration management plan with the client.

Phase two is the implementation of that plan.

3. Findings and Argument

While all clients differ, we have found some commonality in the issues that present in integration.

3.1 Common mistakes:

We do not always first encounter a client before they have started using drones. Many of our clients come to us after they have commenced integration and have got themselves into trouble. As such, these

reflections come from clients who have already started using drones before engaging us:

a. Rushing to buy drones. This can result in buying kit that does not match requirements, and result in serious cost overruns.

b. Unstructured use: Organisations that do not have explicit policy and procedure on the use of drone technology will often find that the absence of such has resulted in staff members assuming permission is already granted. It is common to encounter organisations who only discover their staff are using drones well after the activity has already commenced. This presents serious legal and safety risks.

c. Underinvestment in training. This leads to both poor and unsafe use of drones, but also means organisation don't get the most out of the capability. Unless the staff are trained in how to use the drones for the purpose intended, and shown how the capability enhancement helps them, the drones may not be used at all.

d. Low or misdirected stakeholder engagement. Organisations commonly fail to adequately engage people both inside and outside their organisation. Within organisations this can lead to silo-ing, which presents regulatory and safety risks, and lowers RoI as the capability is not fully exploited. Failing to adequately engage with external stakeholders can lead to difficult community relations.

e. Attempting to exploit regulations. There are almost always 'loopholes' in regulations. However, organisations that attempt to leverage these usually end up breaking regulations anyway, and promoting a culture that is not sustainable.

f. Failing to train managers. Unless managers understand how the capability can be used and managed to assist them in achieving their organisational goals, the ideas for improvement will likely fail to engage.

3.2 Best outcome practices:

In addition to not committing the mistakes mentioned above, organisations that see success in drone integration often have the following characteristics.
a. Balancing capability with outcome. Organisations that have a clear understanding of their *initial* outcome goals, and build capacity around that in order to *extend* those goals tend to do well.

b. Staff lea. Building frameworks for use that allow staff to use drones for their own outcomes, *without* mandating a direct outcome (once the initial outcome is being implemented) tend to find wider adoption and more 'nimble' return on investment.

c. Strategic understanding for competitive advantage. As a revolutionary technology, drones can re-order the ways in which work is done and value is derived. Organisations that have a clear strategic understanding of how they are going to use the technology to change the way their industry operates, and to take competitive advantage through doing so, tend to be more successful.

d. Low barrier systems within a solid process framework. Organisations that make it easy for staff to use drones, while implementing systems that ensure safe, legal and financially responsible use, tend to see great return on investment.

e. Board level understanding. Organisations where the board and C-level executives support the integration because it underpins their own organisational key performance indicators will often have a smoother and more productive integration process.

f. It's what the drones collect, not the drone itself. Organisations that stay focussed on the purposes for the use of the drones, and only then seek a data collection platform will generally be more successful.

4. Conclusions and recommendations

The benefits of the use of drone technology are clear. Safety, efficiency and innovation are key goals for any organisations, and if managed well, the integration of drone technology (and the data the drones collect) can certainly deliver on these goals. However, in order for the integration to succeed the organisation needs to have a good understanding of the possibilities, a solid framework for attaining their goals, and a measured management plan that attains them.