Information Technology in the Disability Sector

How IT Methods, Techniques and Approaches can help the Disability Sector

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Introduction

The majority of Board Members, Executive Team Members and Specialists working within the Disability Sector are, rightly, experienced and qualified in the core business of Health, Policy, Law and the various specialty areas of assisting and supporting those living with a Disability.

With the constant evolution of Technology and it's ability to enable business outcomes and help decision making, it is becoming more important that Disability Providers are aware of not only the Technical solutions available in the market, but also the latest methods and techniques which are helping drive innovation and efficiencies globally.

This White Paper outlines a few Methods and Techniques which are used by the IT Industry to provide structure and efficiency to processes and ways of working. These can assist Disability Providers both in working with Technology suppliers and partners to ensure closer alignment between the business objectives and the technologies implemented, and also in non IT functions where the structure and focus of IT approaches can provide a methodical and efficient approach to defining and resolving issues.

User Stories

Have we covered all the scenarios? Have we thought about the differences based on the various types of Clients? Do we understand the benefits to our Clients for each service and interaction we have?

These are common questions which are important when looking at your organisation's business processes and workflows, and trying to make sure you are able to work within the NDIS framework.

Within the IT industry one of the most common ways of defining and developing software products to enable business outcomes, is using Agile Development Methods. A key component of Agile Methodologies is defining at a high level the business objectives which need to be achieved (Epics) and breaking these down into specific features and functions which are clearly defined (User Stories).

A User Story should be defined in a structured way to drive consistency in the requirements, and make it easier for everyone, including IT vendors you work with, to understand not just the need but also the intent and benefit.

> **As a** <User Role>,
>
> **I want to** <System Behavior>,
>
> **so that I** can <Benefit>".

Example: As a GP, I want to Recommend a suitable Mental Health Provider, so I can Help my Patient get assistance and reduce GP/Hospital visits

Rather than just trying to document a range of Requirements based on a series of meetings and inputs from key staff within the organisation, using a structured approach which aligns to how an IT company develops their products will save significant time and effort. Meetings discussing the intent and context of the requirements will be reduced, as you will be defining the User Stories in a standard way, and each one of them will be linked to an Epic which defines a business objective.

Epics and User Stories

Epic 1	Epic 2	Epic 3
Disability Provider Objective #1	Disability Provider Objective #2	Disability Provider Objective #3

User Story 1.1	User Story 2.1	User Story 3.1
User Story 1.2	User Story 2.2	User Story 3.2
User Story 1.3	User Story 2.3	
User Story 1.4	User Story 2.4	
User Story 1.5	User Story 2.5	
	User Story 2.6	

Your IT partner or internal IT staff can then use a consistent method to estimate the effort required to develop each User Story, and where additions or changes are required, they can be incorporated within the same context of being linked to a key business objective.

Quality Testing and Acceptance Criteria

The IT industry has contributed significantly to Quality Control processes across a range of industries. This is due to the complex nature of a lot of IT solutions which include thousands of functions which all need to operate both independently and in an integrated fashion, as well as being able to seamlessly link with external systems and processes across an organisation and their supply chain.

Quality Testing

In providing Disability support services the primary focus of all stakeholders is to do so with the health and safety of the Client as a primary outcome, while also delivering the service to the highest quality possible.

There are several Techniques and Approaches utilised by the IT industry in Quality Assurance and Software Testing. These can be leveraged to provide structure and built-in quality controls to help Providers achieve these objectives.

Testing Strategy

For any program being implemented or even an Activity such as a Group session being planned, thinking about how to Test the activity or program up front can be of great help. When developing a Test Strategy for creating a Software Product, the following categories are considered, and these can all be applied in designing a Quality Strategy for a program in the Disability sector:

Stakeholders involved – Systematically thinking about all stakeholders who will be involved can help identify risks or potential issues and allow solutions to be implemented up front. For example, when organising a new Peer Support Group Meeting you consider the participants and the facilitator, but you should also consider the person or group looking after the location for things like access, catering etc. Are there Carers or support workers who will be there, where do they wait, who gives them information about the facilities, drinking water etc?

Test Driven Development – This concept focuses on making sure that when developing software, or in this case when organising a support meeting, that the final outcomes are constantly considered when designing and constructing a program framework. Sometimes we get caught up in the creating or organising stage and assume what is being done is correct, so having a "Test-Driven" approach means the outcome is always top of mind when making design decisions.

Unstructured Testing – When designing a solution or program we tend to focus on what we want to include and what we want to happen, and then our quality controls and testing efforts are focused on the expected outcomes. This is the right approach, but there is also benefit in doing some unstructured testing to see what happens when a function or item is used in a different way than what it was intended. In the Group Meeting example you could try and simulate a meeting using internal staff, and ask them to do things like use a different entrance than the normal one, someone turns up late, someone complains about a chair etc. When technology solutions are implemented they are usually done in a controlled environment, but then if it's something like a web site it is exposed to untrained users with different expectations, so being able to simulate varying scenarios before a program is implemented can improve the overall quality and experience for the Client and reduce stress, rework and additional costs.

Production Test Data and Environment

In the context of developing software products or business applications, there are benefits in trying to use Data during the testing efforts which is the same as will be used in the Live environment. For example where an application collects and processes client names and addresses and the organisation works with people from a variety of countries, only using simple names like "Jenny Smith" or "John Citizen" may not help identify issues such as how the application handles foreign characters, long surnames, hyphenated names etc.

Using this approach in the Disability sector, a Project Manager or Support Worker should be asking "am I using the same equipment or information our Clients will use"? Once again using the example of a Group Meeting, the facilitator may have developed prompting questions or structured some discussion points using English, but there may be a participant who struggles with English as their first language. If this came up during a dry run or was identified as part of the Test Strategy, solutions could be considered such as multiple language versions based on the potential demographic, adding a question to any registration process about language preferences, suggesting participants bring a friend who can interpret if English is not their first language, etc.

Acceptance Criteria

When working with an IT partner it is extremely important that you not only define what you need regarding features and functions, but also your expectations of how that function will behave and

meet your business needs. In the IT industry this is known as Acceptance Criteria, as it defines the parameters for what it will take for software to be accepted (and therefore paid for) by the Client.

A good IT partner will help define these; however it can be beneficial for your organisation to provide input or direction in regard to the Acceptance Criteria so you can be clear on what outcomes you are expecting. The following provides a structure to defining Acceptance Criteria:

> Given <some initial context>,
> When <an event occurs>,
> Then <ensure some outcomes>.
>
> E.g.
>
> Given our company has a new customer,
> When the user provides the customer information,
> Then the customer should be registered on the system

It can be quite simple in nature as per the example, but at times will be more complex when defining requirements for areas like Availability of the system. Stating that you want the system to be available 99% of the time during business hours may seem sufficient, however there are other components to consider such as:

- Have the business hours been defined in the contract? Do they cover all relevant time zones in which your organisation operates?
- How is the 99% measured in regard to timeframe? Is it per day, month or year? If your application is not available for 3 hours one day but the measurement applies over a year, then the software vendor may still be compliant even though this may have impacted your business.
- Has the "system" been defined in this context? What if you can login and perform some functions, but you can't print a report or send information to another organisation, does that count within the 99%?

The method of properly defining Acceptance Criteria could also be utilised in other operational areas of a Disability Provider. For example, when talking to a Client about their Management Plan, you could get a better understanding of why they want a particular service by talking to them about the outcomes they want. A Client may have outlined in their Plan that they require assistance in showering each day, and the Plan may have included services for a support worker to assist each day and handrails to be installed. However the Client's desired outcome may be to eventually be self-sufficient in this activity, so their "Acceptance Criteria" for this part of the Plan is to no longer require a support worker to come each day. This may identify additions or changes to the Plan which are required that were not originally identified, or ideally help define the Plan correctly at the start and avoid future rework.

Maybe each item in the Management Plan should have Acceptance Criteria documented? This could assist Local Area Coordinators, Providers and/or Plan Managers in justifying and validating NDIS services being provided and avoid delays in payment processing.

Summary

The IT industry has developed and utilised a wide array of methodologies and techniques to produce industrial strength solutions which are used globally by millions of users. Therefore, it makes sense that these should be examined to see where they can provide benefit to other industries which also require high quality solutions, and an ability to adapt to new challenges and business needs like the Disability sector.

Having a resource available to your Organisation with the experience and skills to help align these methods and techniques to your specific business needs can save you significant energy, time and $'s which can all then be redirected to the critical areas of helping people living with a Disability thrive and grow as individuals.

About the Author

John Lonergan is the Director of Inclusive IT Consulting, an independent consulting company created to help Organisations working in the Disability sector in Australia. John has over 20 years experience working in the IT industry performing a wide range of roles from Software Testing, Business Analysis and Project Management through to leading large teams across the Asia Pacific region in creating and delivery solutions to Clients. John is also the Head Coach of the Australian Cricket Team for Players with an Intellectual Disability, and is passionate about helping those with a Disability thrive and grow as individuals and feel included in their community.

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