INAUGURAL YEAR INSIGHTS

The Digital Twin Partnership

Advocacy | Capability | Community

August 2023

digitaltwinpartnership.com

DTP

1.0 INTRODUCTION

In its vision to accelerate Digital Twin (DTw) adoption, the Digital Twin Partnership (DTP) has dedicated much of its first year of operation to community building and engagement.

This saw a national roadshow of launch events to bring people together, share the DTP's strategy, and gather data to ensure future actions are targeted and effective.

Data was gathered from each of the five launch events at:
- Brisbane, 7 October 2022
- Melbourne, 10 November 2022
- Sydney, 16 February 2023
- Perth, 30 March 2023
- Adelaide, 12 May 2023

Across these events, we had 210 people throughout the DTw community share feedback and experiences relating to policy, practice, and community building.

A series of insightful discussions took place, during which we posed three open-ended questions. These questions were strategically designed to not only shape the future activities of the DTP, but also to glean insights into the ways in which individuals were eager to contribute to accelerating the advancement of Digital Twins (DTws) throughout Australia.

These questions were as follows:

What could DTP do for you to accelerate your Digital Twin initiatives?

What are the current gaps hindering your or your clients take up of Digital Twins?

How can "we" as industry better support government in their Digital Twin implementations?

In certain instances, supplementary inquiries were incorporated based on the ever-evolving knowledge of the DTP, which progressed as the events unfolded.

While the data gleaned from each of these events has been periodically released and shared on both the DTP website and LinkedIn, this first-year summary serves as a consolidation of all the accumulated data. Furthermore, within this document, we distil the essence of the discussions into a series of meaningful recommendations.

DTP

2.0 KEY WORKING GROUP FINDINGS

Throughout the year, Working Groups representing the DTP's three pillars – Advocacy, Capability and Community – were established to act upon the insights gathered from the launch events. The Working Groups meet monthly to collaborate, as well as developing and working on key initiatives to contribute to the DTw community.

This section summarises our headline findings from each of our Working Groups.

Advocacy

Respondents strongly want DTP to raise awareness of the value of DTw across a range of domains. They want the DTP to engage with thought leaders for public discourse, collaborate with policymakers to shape useful regulations and incentives, and partner with industry associations for collective impact. They want to be equipped with compelling DTw materials for widespread outreach. This concerted effort will drive awareness and policy support, and accelerate the adoption of DTw.

Community

Respondents felt that better collaboration across domains and between industry, research and government, is needed to support the DTw industry. They highlighted current gaps and opportunities to develop a thriving DTw community and emphasised the importance of collaboration for successful DTw programs. They are looking for online forums, regular webinars, and networking events to connect professionals, accelerate learning, and drive innovation in DTw technologies.

Capability

Many responses highlighted the gap between the advanced state of DTw technology and people's digital literacy. This was seen as the biggest barrier by respondents. They noted the lack of knowledge and understanding in hindering the development, buy-in and funding for DTw projects and highlighted the scarcity of DTw practitioners to support DTw projects in the short and long term. In addition, many organisations are not ready for change, and there can be resistance to "IT projects" which is where DTw can be grouped. They are looking for guidance on DTw capability requirements, and support for knowledge uplift across the industry.

Digital Twin SWOT Analysis

Based on the above, the following have been summarised as the core strengths, weaknesses, opportunities and threats for the DTw industry.

Strengths:

- Digital Twin Awareness
- Collaboration
- Value Advocacy

Weaknesses:

- Use Case Clarity
- Data Challenges
- Organisational Readiness

Opportunities:

- Education Programs
- Value Demonstrations
- Amplifying Impact Through Partnerships

Threats:

- Market Maturity
- Financial Constraints
- Change Management

DTP

3.0 RECOMMENDATIONS

This section outlines four key recommendations identified based on the feedback from the Digital Twin community.

Recommendation 1
Offering real-world use cases and success stories, awareness sessions, and digestible educational materials that demonstrate the tangible benefits of DTw. Given the prevalent lack of understanding and awareness about DTws, it's crucial to design and execute education and awareness initiatives, to help build confidence among decision-makers and stakeholders, fostering a better understanding of the DTw value proposition.

Recommendation 2
Address the concerns related to data quality, integrity, sharing, and interoperability and advocate for the establishment of industry-wide data standards and best practices. Encourage transparent data practices, collaborative issue resolution, and the sharing of project outputs and learnings. By ensuring data consistency, reliability, and open communication, DTw implementations can be more trustworthy and effective.

Recommendation 3
Foster collaborative relationships with government entities by actively engaging with stakeholders at all levels. Organise events and panels that involve government representatives and DTw providers. Showcase successful applications that deliver public good and contribute to economic and societal benefits. Emphasise the alignment of DTw solutions with government needs and positive community and economic outcomes, and focus on building a strong case for national leadership in DTw initiatives.

Recommendation 4
Highlight the clear value propositions and benefits of DTws. Develop examples that showcase tangible advantages, such as cost savings, efficiency gains, and long-term optimisation throughout the asset life cycle. Communicate the "why" behind DTws, making the economic and social advantages and positive impacts easily understandable for decision-makers. Sharing success stories from existing DTw business cases will bolster the argument for adoption.
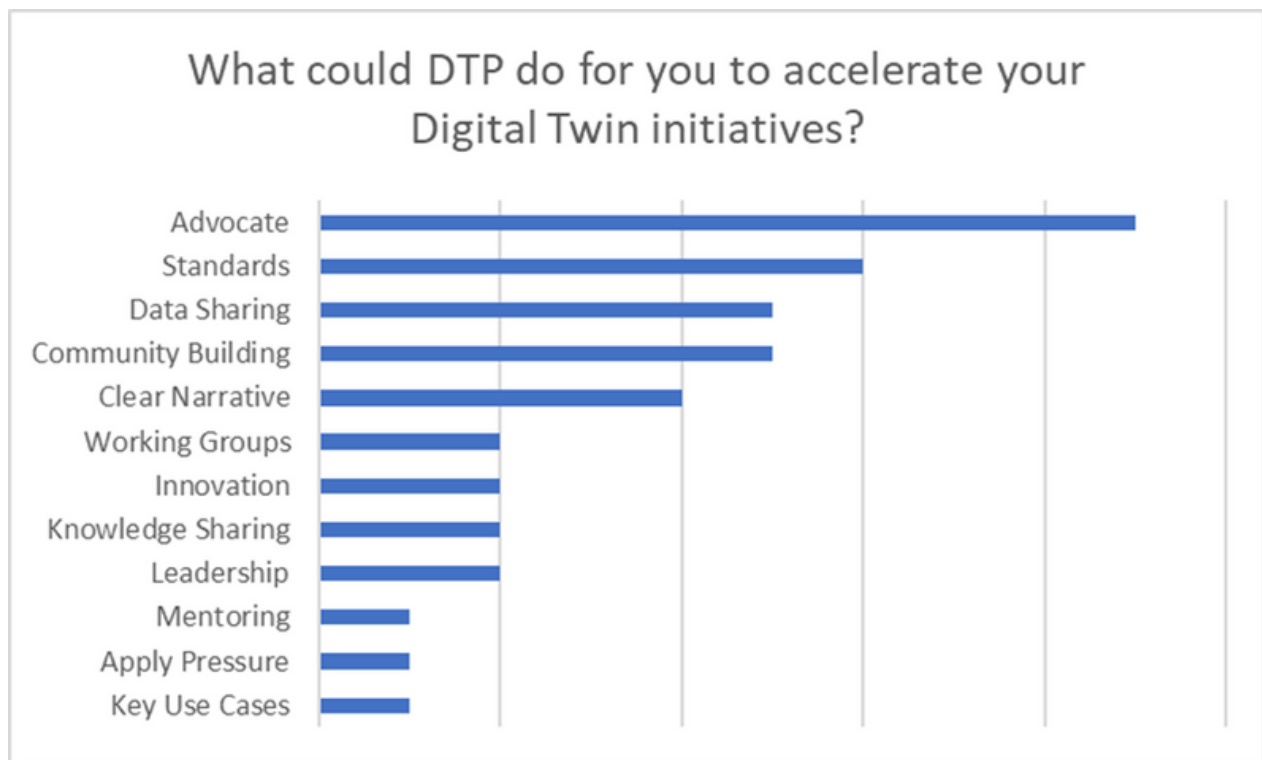
By implementing these recommendations, industry can collectively contribute to the acceleration of DTw initiatives, addressing challenges and fostering a more favourable environment for the adoption and implementation.

4.0 LAUNCH EVENT RESPONSES

Below is a summary of the responses to each of the three questions.

Question 1: What could DTP do for you to accelerate your Digital Twin initiatives?

There were 149 responses gathered from the launch events on the need to accelerate Digital Twin initiatives. These responses were as outlined below.
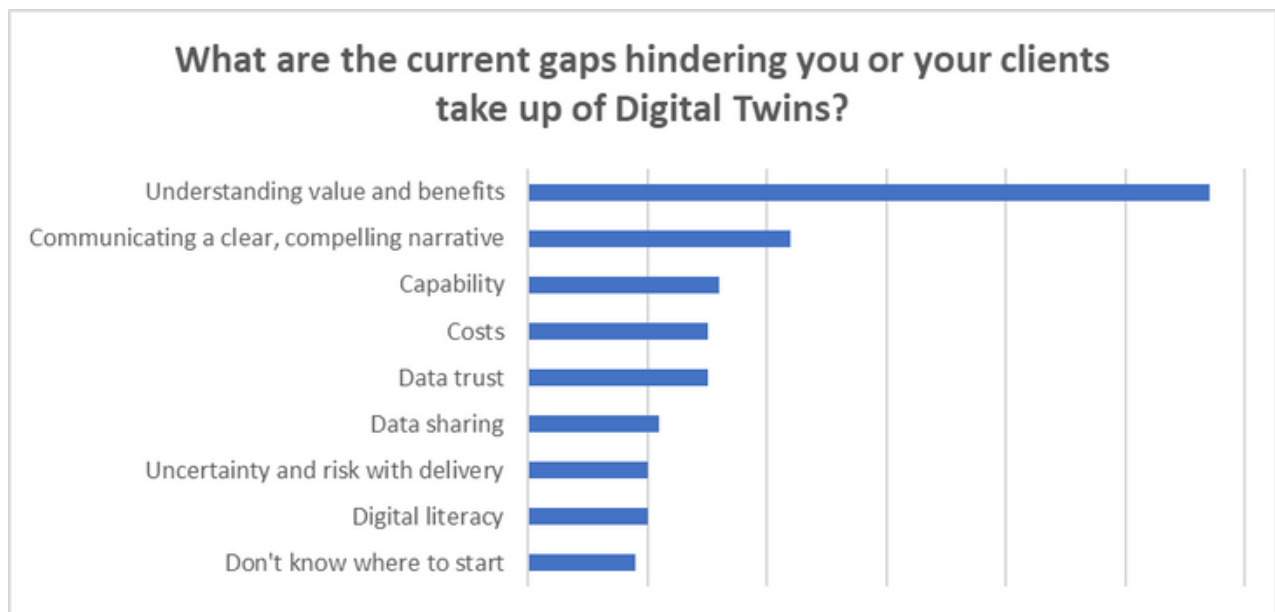

The responses highlight various challenges and needs related to accelerating digital twin initiatives. The key themes included:

- Understanding and Awareness: Many respondents expressed a lack of understanding of what DTws are and how they can benefit their organisations. They emphasised the need for clear definitions, use cases, and success examples to increase awareness and comprehension

- <u>Value and ROI:</u> Several participants mentioned the importance of articulating the business value and return on investment (ROI) of DTws. They sought guidance on measuring impact, quantifying benefits, and demonstrating the value proposition to decision-makers

- <u>Data Quality and Standards:</u> Data-related concerns were prevalent, including issues with data quality, integrity, sharing, and interoperability. Respondents emphasised the need for data standards, data sharing agreements, data accountability, and frameworks to ensure data consistency and reliability

- <u>Funding and Budget:</u> Many participants highlighted the challenges associated with financing DTw initiatives. They sought guidance on securing funding, understanding cost-benefit analyses, and justifying the expenses of implementing DTws

- <u>Governance and Collaboration:</u> Collaboration and partnerships were identified as critical factors for success. Respondents emphasised the importance of advocating for collaboration between government agencies, industry stakeholders, and academia. They also highlighted the need for consistent approaches across states and regions

- <u>Change Management and Culture:</u> The resistance to change, risk aversion, and lack of executive sponsorship were mentioned as barriers to DTw adoption. Participants expressed the need for change management strategies, building digital literacy, and creating a culture that embraces innovation and digital transformation

- <u>Use Cases and Clear Starting Points:</u> Many respondents expressed a desire for clear use cases, practical examples, and guidance on where to start their DTw initiatives. They emphasised the need to identify priorities, define the scope, and provide resources and templates to facilitate the implementation process.

DTP

There were 198 responses gathered from the launch events on the gaps hindering the development of Digital Twins. These responses were as outlined below.
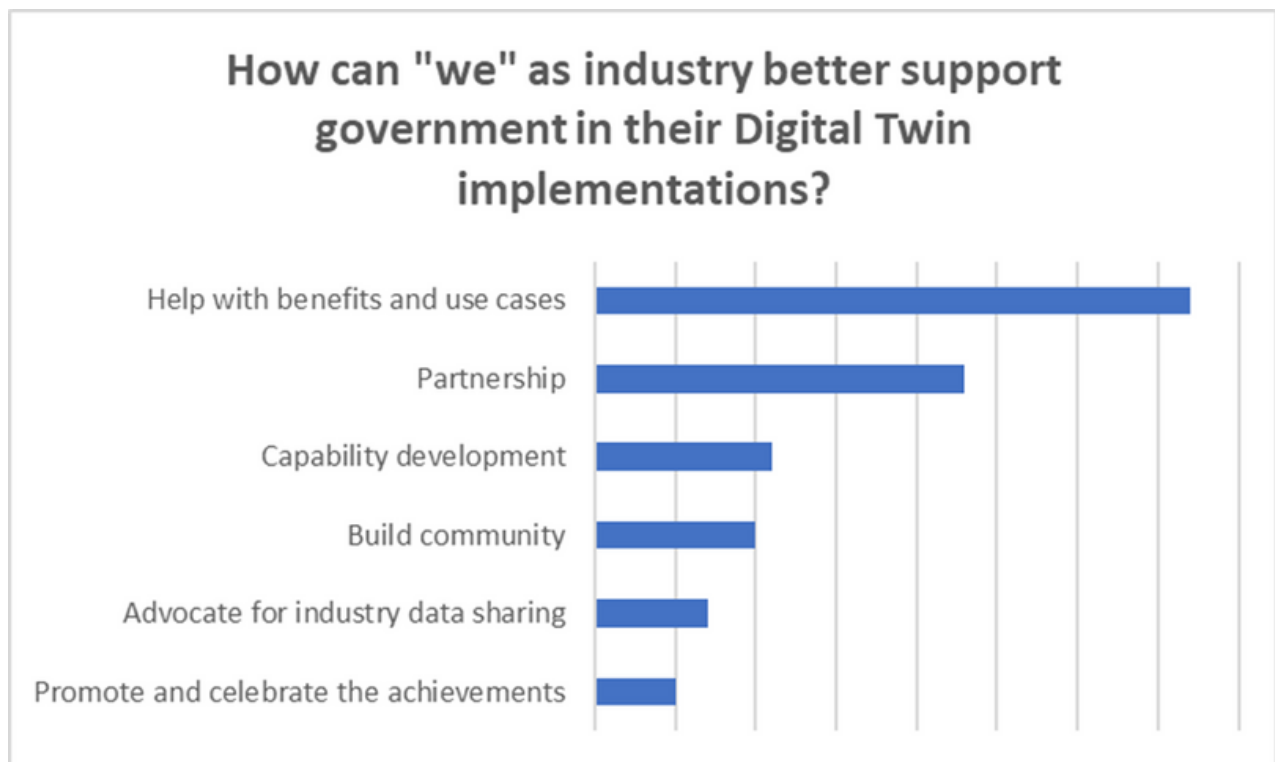

The responses highlight several gaps hindering the uptake of DTws by individuals and clients. These include:

- ROI and Value Proposition: Understanding the business value, measuring impact, and articulating the return on investment were mentioned as challenges. Clear value propositions, demonstrated benefits, and alignment with existing systems and processes were seen as crucial

- Lack of Clear Use Cases: Some respondents mentioned the absence of clear use cases as a barrier to adoption. Demonstrating real-world examples and articulating the business value of DTws could help overcome this gap

- Lack of Knowledge and Understanding: Many respondents mentioned not knowing where to start or understanding what DTws mean to them. There is a need for clear definitions, education, and awareness

7.

- <u>Data Quality and Integrity:</u> Concerns about the quality and integrity of data were raised, indicating a lack of trust in the accuracy and reliability of DTw data

- <u>Data Management and Standards:</u> Inconsistent management of data, lack of data sharing standards, and the need for standardised approaches were cited as hindrances. Data privacy, ethics, and accountability were also mentioned as important considerations

- <u>Organisational Readiness and Capability:</u> Lack of digital policy, low digital literacy, insufficient capability building, and resistance to change within organisations were identified as gaps. Aligning leadership, building digital skills, and developing frameworks and methodologies were suggested as solutions

- <u>Government Support and Collaboration:</u> Respondents highlighted the importance of political willpower, government policies, and collaboration between public and private sectors. Lack of national consistency, bureaucracy, and policies against data sharing were mentioned as barriers

- <u>Market Awareness and Maturity:</u> Lack of market granularity, limited knowledge, and awareness about DTw capabilities and benefits were raised. Industry maturity, standardised terminology, and accredited suppliers were identified as areas that need improvement.

Question 3: How can "we" as industry better support government in their Digital Twin implementations?

There were 115 responses gathered from the launch events addressing how to better support government in their Digital Twin implementations. These responses were as outlined below.

The responses highlight several ways to better support government with their Digital Twin implementations. These include:

- Demonstrating Value and Benefits: Respondents highlighted the importance of demonstrating the value and benefits of DTws to gain wider adoption. They suggested providing clear examples of tangible benefits, outlining the economic advantages, and showcasing use cases that highlight the value proposition. There was an emphasis on showing how digital twins can solve specific problems, deliver solutions, and provide value throughout the asset life cycle. Respondents also emphasised the need for a public-friendly user experience/interface, focusing on the "why" behind digital twins, and providing evidence of cost savings, efficiency gains, and long-term optimisation

- Collaboration and Partnership: One key theme that emerged from the responses is the importance of being a "good" partner to the government and fostering collaborative relationships. Respondents emphasised the need to work in partnership, provide trusted advice, and act as a catalyst for change. They suggested sharing ideas, learnings, and success stories across borders, as well as advocating for industry collaboration and strategic partnerships. Additionally, there was a focus on actively engaging with government stakeholders, listening to their needs and concerns, and taking them along the DTw journey

- Education and Awareness: Respondents stressed the significance of education and awareness initiatives to increase understanding and appreciation of DTws. They recommended providing clear and consistent articulation of the benefits and value of DTws, supported by case studies, training programs, awareness sessions, and digestible educational materials. The goal was to demonstrate the tangible value proposition of DTws, showcase real-world benefits, and build confidence among decision-makers and stakeholders

- Data Sharing and Standards: Another important theme was the advocacy for data sharing and the establishment of data and file format standards. Respondents highlighted the need for proactively offering shared data, following industry guidelines, and encouraging the value of data and its potential to drive decision-making. They emphasised the importance of integrity, open communication about issues, and collaborative resolution of challenges. There was a call for transparent data practices, sharing project outputs and learnings, and enabling plug-and-play capabilities through standardised approaches

- Government Engagement and Support: The responses also emphasised the role of government engagement and support in advancing the adoption and implementation of DTws. Respondents recommended celebrating government successes, congratulating applications that deliver public good, and actively engaging with government stakeholders at various levels. They suggested organising CEO-level events, establishing government-led panels of DTw providers, and showcasing positive use cases to build confidence and create an irresistible case for national leadership. The focus was on demonstrating the value of DTws in addressing government needs and driving economic and societal benefits.

By fostering partnerships, increasing awareness, advocating for standards, and showcasing real-world benefits, industry can contribute to the successful adoption and implementation of DTws nation-wide.