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# Three Narrative Techniques for Engagement and Action in Design-Led Innovation

**Abstract** The design-led innovation framework enables organizations to systematically develop the design capabilities they need to pursue their innovation objectives. When a design researcher works in tandem with organizational stakeholders to implement the framework, the dynamic they create is complex. This article relates our efforts to apply narratives as a tool to effectively drive this process forward, given their demonstrated ability to sustain organizational innovation and frame new possibilities. During an eighteen-month action research project, we implemented the design-led innovation framework inside an Australian Airport Corporation. Our research revealed that three narrative techniques – low-fidelity narratives, realistic narratives, and strategy narratives – particularly supported several key stages of this creative innovation process. Narratives enabled us to surface internally-held assumptions and beliefs and test their validity with external customers and stakeholders; they established common ground among various stakeholders during the innovation process; they served to convince managers to pursue design-led innovation outputs; and they facilitated the co-creation and implementation of a company-wide strategy. This article contributes new knowledge and practical guidance for developing and applying narrative techniques during design-led innovation.

## Keywords

Action research  
Design innovation catalyst  
Design methods  
Innovation management  
Storytelling

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Managers are no strangers to the idea that design can drive their efforts to innovate.<sup>1</sup> Changes in customer preferences, technologies, and market trends have exposed the pitfalls of existing business development methods and methodologies.<sup>2</sup> As a result, the business community, policy creators, and governments have all begun to harness design to shift away from existing methods of value creation.<sup>3</sup> But organizations that seek to benefit from design can find it difficult to adopt and integrate design as a viable mechanism for value creation.<sup>4</sup>

Design-led innovation is a framework developed by Sam Bucolo, Cara Wrigley, and Judy Matthews to systematically develop design capability among organizational stakeholders as they pursue their innovation objectives.<sup>5</sup> Studies focusing on its implementation inside various organizations have shown that it can successfully impact innovation performance.<sup>6</sup> Wrigley has also identified the practices and principles guiding what she terms the Design Innovation Catalyst (the “catalyst,” or “innovation catalyst”) as expert implementer of design-led innovation.<sup>7</sup> However, uncertainty still surrounds techniques that support framework implementation, given its fluid nature and the catalyst’s shifting role across organizational domains. Narratives can be useful tools for sustaining organizational innovation<sup>8</sup> and framing new possibilities.<sup>9</sup> Yet techniques to apply narratives during design-led innovation remain an area for exploration.

In this article, we present findings from an action research project in which we implemented the design-led innovation framework within an Australian Airport Corporation over a period of eighteen months.<sup>10</sup> The research question underpinning this inquiry was, “How can narrative techniques support the different phases of design-led innovation implementation?,” a question that acknowledges the organization’s pre-existing desire to build design capability through design-led innovation. For the purpose of this study, the embedded action researcher becomes an innovation catalyst – an agent of change within the organization.<sup>11</sup>

We begin this article by presenting the literature establishing design-led innovation framework and the Design Innovation Catalyst, together with a short critique of the framework. Next we review the literature on narratives and storytelling. Thirdly, we present the present research design and methodology, beginning with insight into the case study context before shifting to operational aspects of the methodology. After this, we report and discuss our findings after implementing three distinct narrative techniques intended to overcome temporality related challenges inherent to the framework of design-led innovation.<sup>12</sup> The article concludes with implications and directions for future research.

## Design-Led Innovation and the Design Innovation Catalyst

In an increasingly competitive and uncertain world, an organization’s ability to innovate has become a means not only for growth, but survival. The relationship between design and innovation is well acknowledged as a beneficial one.<sup>13</sup> Organizations that previously considered design as an extra component now look to the discipline as a source of innovation and leadership – the recent transformation of IBM is but one example of this.<sup>14</sup> However, the journey towards increased design capability inside organizations has proven to be a challenging one, as the case-by-case nature of design – identified by Steven Kyffin and Paul Gardien<sup>15</sup> – often conflicts with standardization efforts that underpin operations at performance-oriented organizations. These challenges often manifest in cultural resistance to design as a new way of thinking and doing.<sup>16</sup>

The design-led innovation framework (Figure 1) promotes the possibilities of design beyond the organization’s operational domain toward the territory of strategic design. The purpose of the framework is to help organizations develop

1 Richard Buchanan, “Worlds in the Making: Design, Management, and the Reform of Organizational Culture,” *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 1 (2015): 5–21, DOI: <https://doi.org/10.1016/j.sheji.2015.09.003>; Kimberly Elsbach and Ileana Stigiani, “Design Thinking and Organization Culture: A Review and Framework for Future Research,” *Journal of Management*, January 16, 2018, DOI: <https://doi.org/10.1177/0149206317744252>; Roger L. Martin, *The Design of Business: Why Design Thinking is the Next Competitive Advantage* (Cambridge, MA: Harvard Business Press, 2009).

2 Jeanne Liedtka, “Perspective: Linking Design Thinking with Innovation Outcomes through Cognitive Bias Reduction,” *Journal of Product Innovation Management* 32, no. 6 (2015): 925–38, DOI: <https://doi.org/10.1111/jipim.12163>.

3 Gjoko Muratovski, “Paradigm Shift: Report on the New Role of Design in Business and Society,” *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 2 (2015): 118–39, DOI: <https://doi.org/10.1016/j.sheji.2015.11.002>.

4 Lisa Carlgren, Ingo Rauth, and Maria Elmquist, “Framing Design Thinking: The Concept in Idea and Enactment,” *Creativity and Innovation Management* 25, no. 2 (2016): 38–57, DOI: <https://doi.org/10.1111/caim.12153>.

5 Sam Bucolo, Cara Wrigley, and Judy Matthews, “Gaps in Organizational Leadership: Linking Strategic and Operational Activities through Design-Led Propositions,” *Design Management Journal* 7, no. 1 (2012): 18–28, DOI: <https://doi.org/10.1111/j.1948-7177.2012.00030.x>.

6 Erez Nusem, Cara Wrigley, and Judy Matthews, “Developing Design Capability in Nonprofit Organizations,” *Design Issues* 33, no. 1 (2017): 61–75, DOI: [https://doi.org/10.1162/DESI\\_a\\_00426](https://doi.org/10.1162/DESI_a_00426); Rohan Doherty, Cara Wrigley, Judy H. Matthews, and Sam Bucolo, “Climbing the Design Ladder: Step by Step,” in *Proceedings of the 19th DMI Academic Design Management Conference: Design Management in an Era of Disruption*, ed. Erik Bohemia et al. (Boston: Design Management Institute, 2014), 2578–2600, available at <http://www.dmi.org/?page=ADMC2014>; Peter

**Figure 1** Design-led innovation framework. Copyright © 2012 Sam Bucolo, Cara Wrigley, and Judy Matthews.



Townson, Judy Matthews, and Cara Wrigley, “Outcomes from Applying Design-Led Innovation in an Australian Manufacturing Firm,” *Technology Innovation Management Review* 6, no. 6 (2016): 49–58, available at <http://timreview.ca/article/997>.

7 Cara Wrigley, “Design Innovation Catalysts: Education and Impact,” *She Ji: The Journal of Design, Economics, and Innovation* 2, no. 2 (2016): 148–65, DOI: <https://doi.org/10.1016/j.sheji.2016.10.001>.

8 Caroline A. Bartel and Raghu Garud, “The Role of Narratives in Sustaining Organizational Innovation,” *Organization Science* 20, no. 1 (2009): 107–17, available at <http://www.jstor.org/stable/25614643>.

9 Francesco Zurlo and Cabirio Cautela, “Design Strategies in Different Narrative Frames,” *Design Issues* 30, no. 1 (2014): 19–35, DOI: [https://doi.org/10.1162/DESI\\_a\\_00246](https://doi.org/10.1162/DESI_a_00246).

10 Ortrun Zuber-Skerritt, ed., *Action Research for Sustainable Development in a Turbulent World* (Bingley: Emerald, 2012).

11 Wrigley, “Design Innovation Catalysts,” 148–65.

12 Muratovski, “Paradigm Shift,” 118–39.

13 Liedtka, “Perspective,” 925; Jeneane Rae, “Design Value Index Exemplars Outperform the S&P 500 Index (Again) and a New Crop of Design Leaders Emerge,” *Design Management Review* 27, no. 4 (2016): 4–11.

organization-wide design capabilities by promoting a holistic perspective regarding where and how design activities can occur. The framework incorporates the external and internal spaces of an organization intersected by operational and strategic activities. At a conceptual level, the framework enables a continuum of cross-contextual, cross-departmental activity bolstered by the central aim to build design capability that supports innovation at every level of the organization. This inherent movement across areas prompts practical considerations, such as how to manage temporality in context yet build rich relationships with stakeholders; how to explore new perspectives while integrating insights from each organizational context; and how to reflect on learning to date yet also plan future actions to further develop design capability. Bucolo, Wrigley, and Matthews<sup>17</sup> define three key phases in the framework where managing this movement requires particular support:

1. Gathering customer insights from customers and stakeholders that reveal deeper latent needs;
2. Proposing future orientated solutions that capture value from customer and stakeholder insights; and
3. Shaping strategy that leverages the value unlocked by future oriented propositions grounded in customer and stakeholder insights.

According to Wrigley, to overcome organizational barriers to adopting design and integrating design capability, a design researcher embedded within the organization can become a catalyst who demonstrates, coaches, and facilitates the implementation of design-led innovation, becoming the driver of change inside the organization.<sup>18</sup> Design capabilities are developed through prolonged collaborative engagement between the organization and the innovation catalyst, who learn about and apply design together.

## Narratives

The philosophical foundations of narratives are deeply rooted in the human condition. Alasdair MacIntyre notes that “[humans] in [their] actions and practice, as well as fictions, are essentially story telling animals.”<sup>19</sup> Donald Polkinghorne reinforces this position, arguing that the narrative is the “primary form by which human experience is made meaningful.”<sup>20</sup> The typical archetypal narrative involves a beginning that builds toward a dilemma before a resolution occurs. A fundamental problem within the narrative is resolved to the benefit of a community—typically,

protagonist overcomes antagonist. A narrative preserves cultural characteristics through time while also permitting cultural plurality, a phenomenon described by Roland Barthes.<sup>21</sup> Barthes' work on narratives is influential. He identified that both the narrator (the deliverer of the story) and narratee (recipient of story) are empowered through knowledge transferred during storytelling. A narratee receives a story at first, but in future may also retell a story. Thus the narratee is much more than an audience but part of the preservation and shaping of narratives overtime. In this way, storytelling ensures narratives surpass time and contextually sensitive factors. A narrative can still be relevant many years later and can be recounted in different geographic locations with no loss of relevance. For example, Chinese proverbs from antiquity are repurposed within contemporary management education.<sup>22</sup>

In the context of innovation, narratives and storytelling contribute to the realization of novel solutions in a number of ways. Andrew Brown, Patrick Stacey and Jo Nadhakumar argue that narratization (narrative-making) permits a collaborative approach to sensemaking that coordinates teams and individuals in ways that overcome occupational differences.<sup>23</sup> And as Caroline Bartel and Raghu Garud note, "innovation narratives are powerful mechanisms for translating ideas across the organization so that they are comprehensible."<sup>24</sup> Bartel and Garud also highlight that narratives support the growing social interaction required in organizations that sustain innovation. Carl Rhodes and Andrew Brown argue that storytelling frames ambiguity, complexity, and even paradoxical situations in an approachable way by visualizing possibilities.<sup>25</sup> Narratives remain open to ambiguous reading and allow narrator and narratee to fill gaps in detail by drawing upon their own imagination. These loose ends are part of what Roland Barthes describes as the hermeneutic code, requiring the narrator and narratee's further attention in order to explicate answers.<sup>26</sup> The hermeneutic code refers to unexplained elements of a story that act as an enigma for the reader. The reader or recipient of a story must imagine possibilities, thus intensifying engagement with the narrative itself.

In the design context, Francesco Zurlo and Cabirio Cautela<sup>27</sup> note that narratives serve as innovation carriers and place the designer as the expert manipulator of signs and texts in the design process, saying

"The narrative acts as a tool that the company uses to implement innovation processes. In the current competitive context dominated by open innovation, where the companies become permeable to spurs, ideas, technologies, and relationships, the ability to structure the narrative becomes fundamental in attracting the resources and relationships necessary for the company's competitive and innovative goals."<sup>28</sup>

Zurlo and Cautela developed four narrative frames that can help designers delimit and drive innovation initiatives within organizations. These frames explore subject matter in terms of user-centered preoccupations, company exploration and exploitation, and new technologies. Each narrative frame has a set of processes defined by the following features: design orientation, creative sources, knowledge and tools, core capabilities, prototyping role, and stopping rule.<sup>29</sup> An intersection with the work of Guido Stompff and Frido Smulders is comparable.<sup>30</sup> As Stompff and Smulders identify, when a design artifact (prototype or sketch) has the right visual quality for its intended audience, an acceleration of innovation processes occurs. These qualities pertain to the fidelity, preoccupation, level of abstraction, and function played by a design artifact in given scenarios. Therefore, the tangible visual quality of an artifact and the intangible storytelling qualities of narratives contribute to successful innovation. Consideration of how design narratives support the implementation of design-led innovation remains an area for further exploration.

14 Jon Kolko, "Design Thinking Comes of Age: The Approach, once Used Primarily in Product Design, Is Now Infusing Corporate Culture," *Harvard Business Review* 93, no. 9 (2015): 66–71, available at [https://enterpriseproject.com/sites/default/files/design\\_thinking\\_comes\\_of\\_age.pdf](https://enterpriseproject.com/sites/default/files/design_thinking_comes_of_age.pdf).

15 Steven Kyffin and Paul Gardien, "Navigating the Innovation Matrix: An Approach to Design-Led Innovation," *International Journal of Design* 3, no. 1 (2009), available at <http://ijdesign.org/index.php/IJDesign/article/view/305>.

16 Sam Bucolo and Cara Wrigley, "Creativity and Design," *Innovation and Entrepreneurship: Creating New Value*, ed. Danny Samson and Marianne Gloet (Oxford: Oxford University Press, 2015), 126–63.

17 Bucolo, Wrigley, and Matthews, "Gaps in Organizational Leadership," 19.

18 Wrigley, "Design Innovation Catalysts."

19 Alasdair MacIntyre, *After Virtue: A Study in Moral Theory* (South Bend: University of Notre Dame Press, 1981), 201.

20 Donald E. Polkinghorne, *Narrative Knowing and the Human Sciences* (Albany: State University of New York, 1988), 1.

21 Roland Barthes, *S/Z: An Essay*, trans. Richard Miller (NY: Farrar, Straus and Giroux, Inc., 1974).

22 Priscilla Chu and Olivia Tse, "The Art of War and Strategic Management," *Journal of Management Education* 16, no. 4s (1992): 43–53, DOI: <https://doi.org/10.1177/1052562992016004041>.

23 Andrew D. Brown, Patrick Stacey, and Joe Nadhakumar, "Making Sense of Sense-making Narratives," *Human Relations* 61, no. 8 (2008): 1035–62, DOI: <https://doi.org/10.1177/0018726708094858>.

24 Bartel and Garud, "The Role of Narratives," 107.

25 Carl Rhodes and Andrew D. Brown, "Narrative, Organization and Research," *British Academy of Management* 7, no. 3 (2005): 167–88, DOI: <https://doi.org/10.1111/j.1468-2370.2005.00112.x>.

26 Barthes, *S/Z*.

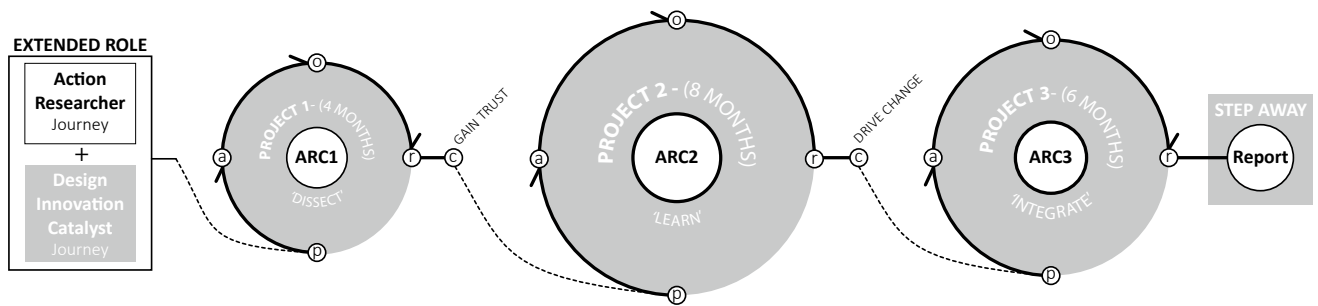


Figure 2 Extended role of action researcher as Design Innovation Catalyst. Copyright © 2018 Rebecca Price, Cara Wrigley, and Judy Matthews.

27 Francesco Zurlo and Cabirio Cautela, "Design Strategies in Different Narrative Frames," *Design Issues* 30, no. 1 (2014): 19–35, DOI: [https://doi.org/10.1162/DESI\\_a\\_00246](https://doi.org/10.1162/DESI_a_00246).

28 *Ibid.*, 34.

29 *Ibid.*, 27.

30 Guido Stomppf and Frido Smulders, "The Right Fidelity: Representations That Speed Up Innovation Processes," *Design Management Journal* 10, no. 1 (2015): 14–26, DOI: <https://doi.org/10.1111/dmj.12019>.

31 Hilary Bradbury, "Introduction: How to Situate and Define Action Research," *The SAGE Handbook of Action Research*, ed. Hilary Bradbury (London: SAGE Publications, 2015), 1.

32 Howard Silverman, "Designerly Ways for Action Research," in *The SAGE Handbook of Action Research*, ed. Hilary Bradbury (London: SAGE Publications, 2015), 716.

33 Wrigley, "Design Innovation Catalysts," 153.

34 Paul Chivers, "Why More Businesses Need to Emulate High Reliability Organizations," *Governance Directions* 66, no. 1 (2014): 16–20.

35 Nawal K. Taneja, *Airline Industry: Poised for Disruptive Innovation?* (Abingdon: Routledge, 2017).

## Research Design and Methodology

### Action Research

Action research is a democratic and participatory approach to knowledge creation that occurs in cycles of planning and action.<sup>31</sup> Design and action research have a conceptual affinity given their shared rationale to improve the situations they encounter.<sup>32</sup>

The research team applied three cycles of action research to implement design-led innovation in an Australian Airport Corporation over a period of eighteen months. Each cycle of action research corresponds to the tasks set out by Wrigley as crucial to the role of the Design Innovation Catalyst (visualized in Figure 2).<sup>33</sup> Wrigley states the catalyst must dissect (understand the organization); coach design-led innovation, enabling employees to learn design; and integrate design-led innovation before concluding the embedded period within the organization. Therefore, action research cycle one sought to dissect the Airport Corporation context; action research cycle two sought to coach stakeholders and learn design-led innovation with them; and action research cycle three sought to integrate design-led innovation as an accepted way of working across the Airport Corporation.

### Case Study Context

An Australian Airport Corporation provides a novel and worthy context for the exploration of design-led innovation, as operational challenges can present considerable threats and opportunities given the airport's high-reliability status within society.<sup>34</sup> The emerging opportunities and consequent challenges associated with digital diversification,<sup>35</sup> globalization, capacity demands, and a progressive shift toward an aerotropolis business model are testing current value creation methodologies at the Airport Corporation. The corporation also operates in a vast network of stakeholders, which places pressure on governance structures and decision making. During this research, the innovation catalyst observed that the Airport Corporation undertook new product and service development through a stage gate process. Participants within the Airport Corporation also described the approach to innovation as one of "smartly following" industry leaders – drawing similarities to the organizational paradigm for innovation described by Fariborz Damanpour and Daniel Wischnevsky.<sup>36</sup> This approach, while beneficial, meant that the Airport Corporation relied heavily on external partners and outsourcing for creativity and design capability. This is the context and rationale for implementing design-led innovation within the organization.

## Industry Projects

Within contemporary business, projects are unique activities that bring together the temporary organization of people in order to collectively execute a plan. Each cycle of Action Research provided the platform to implement design-led innovation through industry projects and interface with various stakeholders, and provided the opportunity to deploy methods of design to diverge, converge, and shift from problem to solution state with stakeholders. Each project shared a central focus on both improving customer experience as part of the Airport Corporation's vision and supporting the core operation of the airport – the arrival and departure of flights. The three industry projects are described as Action Research cycles in greater detail in [Table 1](#).

36 Fariborz Damanpour and J. Daniel Wischnevsky, "Research on Innovation in Organizations: Distinguishing Innovation-Generating from Innovation-Adopting Organization," *Journal of Engineering and Technology Management* 23, no. 4 (2006): 269–91, DOI: <https://doi.org/10.1016/j.jengtecman.2006.08.002>.

**Table 1. Industry projects.**

Project Name	Action Research Cycle and Duration	Project Aim and Outcome	Methods Applied	Stakeholders Involved
<b>Retail engagement</b>	1 6 months	Aim: gather deep customer insights regarding retail behavior of passengers  Outcome: a new point of sales strategy, launched by a Retail Partner across Australian airports	<ul style="list-style-type: none"> <li>• Business model canvas</li> <li>• Persona design</li> <li>• Touchpoint timeline</li> <li>• Narratives</li> <li>• SWOT analysis</li> <li>• Shadowing</li> <li>• Reframing</li> <li>• Co-creation</li> </ul>	<ul style="list-style-type: none"> <li>• 3 internal AAC departments</li> <li>• Innovation Catalyst</li> <li>• Retail partner</li> </ul>
<b>Digital strategy</b>	2 14 months	Aim: enrich passenger experience through digital channels  Outcome: launch of two new mobile applications and a digital departure card; implementation of an organization wide digital strategy	<ul style="list-style-type: none"> <li>• Reframing</li> <li>• Persona design</li> <li>• Narratives</li> <li>• Three horizons model</li> <li>• Shadowing</li> <li>• SWOT analysis</li> <li>• Touchpoint timeline</li> </ul>	<ul style="list-style-type: none"> <li>• 9 internal AAC departments</li> <li>• Innovation catalyst</li> <li>• Digital consultant</li> </ul>
<b>Seamless transfers</b>	3 8 months	Aim: design a smooth transfer process to improve passenger experience and support efficiency  Outcome: under construction.	<ul style="list-style-type: none"> <li>• Narratives</li> <li>• Customer-journey mapping</li> <li>• Reframing</li> <li>• Persona design</li> <li>• Co-creation</li> <li>• Shadowing</li> </ul>	<ul style="list-style-type: none"> <li>• 7 internal AAC stakeholders</li> <li>• Innovation catalyst</li> <li>• Developer</li> </ul>

## Data Generation and Collection

During action research, data are generated through action then collected and reused in the following action research cycles. We collected qualitative data using four research methods: semi-structured interviews, focus group discussions, field notes, and the catalyst's reflective journal. [Table 2](#) shows specific foci, duration, and other details related to data collection. The innovation catalyst documented the reflective journal and field notes entries. Semi-structured interviews and focus group discussions were audio recorded with consent from participants present, and the catalyst made a full transcription. Twenty-two participants, representing nine internal departments at the Airport Corporation – from senior management to operational coordinators – took part in interviews and focus groups. Participants were involved in the implementation of design-led innovation to varying degrees, from high involvement in design-led projects to little or no involvement. We triangulated the four data collection methods, to strengthen the integrity of the study.

**Table 2. Data collection.**

Method	Quantity	Participants	AR Cycle	Time	Foci	Authorities
Semi-structured interviews	40	P1 - P22	1, 2, and 3	1-1.5 hours	Gather data regarding outcomes and opportunities of methods of design	Agostinone-Wilson, 2012 <sup>a</sup>
Focus group discussions	2	P2, P3, P4, P5, P6, and P22	1 and 3	1.5 hours	Understand the impact of visual methods on innovation processes as part of design-led innovation	Basch, 1987 <sup>b</sup>
Field notes captured daily by design innovation catalyst	160 × A5 journal pages	n/a	Continuous	NA	Observe and document internal dynamics and reception of design-led innovation framework during projects	Zieman, 2012 <sup>c</sup>
Reflective journal recorded by design innovation catalyst	Approx. 5000 words	n/a	Continuous	NA	Organize thoughts during reflection; create greater awareness of project experiences; articulate ideas about the relationship between the design-led innovation framework and design methods	Parker and Goodwin, 1987 <sup>d</sup>

<sup>a</sup> Faith Agostinone-Wilson, "Interviews," in *Action Research Methods: Plain and Simple*, ed. Sheri Klein (New York: Palgrave Macmillan, 2012), 21–48.

<sup>b</sup> Charles E. Basch, "Focus Group Interview: An Underutilized Research Technique for Improving Theory and Practice in Health Education," *Health Education & Behavior* 14, no. 4 (1987): 411–48, DOI: <https://doi.org/10.1177/109019818701400404>.

<sup>c</sup> Gail A. Zieman, "Participant Observation," in *Action Research Methods: Plain and Simple*, ed. Sheri Klein (New York: Palgrave Macmillan, 2012), 49–68.

<sup>d</sup> Robert P. Parker and Vera Goodkin, *The Consequences of Writing: Enhancing Learning in the Disciplines* (Upper Montclair, NJ.: Boynton/Cook, 1987).

**37 Julie M. Davis, "Writing an Action Research Thesis: One Researcher's Resolution of the Problematic Form and Process,"** in *Performing Educational Research: Theories, Methods and Practices*, ed. Erica McWilliam, Susan Danby, and John Knight (Flaxton: Post Pressed, 2004), 15–30.

**38 Douglas Ezzy, *Qualitative Analysis: Practice and Innovation*** (Adingdon: Routledge, 2002).

**39 Bucolo, Wrigley, and Matthews, "Gaps in Organizational Leadership,"** 18–28.

### Data Analysis

Julie Davis notes that action research demands a more fluid and continuous approach to analysis in order to shape change. Of importance is the unique nature of action research as an unfolding story of change.<sup>37</sup> We therefore applied the first phase of data analysis during each action research cycle to build an increased understanding of the outcomes and opportunities of design-led innovation. Analysis occurred through open coding as a form of familiarization, given the longitudinal nature of the research. This indicative analysis created learning that informed actions that we undertook in the following action research cycles. At the completion of every cycle, we applied the thematic analysis approach described by Douglas Ezzy.<sup>38</sup> This second analytical phase involved open coding, axial coding, selective coding, and a final write up. The research team members also coded each cycle separately using the analysis process. Treating each action research cycle independently before identifying an underpinning story of change is an important consideration in action research. We completed analyses using NVivo software to aid the storage, management and security of the data.

### Findings

Our findings reveal that narrative techniques supported the implementation of design-led innovation in a number of ways. Described in the following sections are three narrative techniques that supported specific phases of design-led innovation:<sup>39</sup> low-fidelity narratives, realistic narratives, and strategy narratives. Notably,



these techniques supported the dynamic nature of design-led innovation, and allowed the innovation catalyst to extend engagement across the Airport Corporation – interfacing with strategic and operational stakeholders and undertaking activities in internal and external areas of the business.

### ***Gathering Deep Customer Insights with Low-Fidelity Narratives***

Low-fidelity, or low-fi, is a term appropriated from sound production to describe an imperfect recording or sound prototype. Lo-fi recordings enable listeners to test preconceived ideas and assumptions about possible future directions. Similarly, these narrative visualizations were generated quickly, without a great deal of detail, which led to their “low-fidelity” label.

To create the lo-fi narratives, the innovation catalyst began by exploring the Airport Corporation stakeholders’ assumptions regarding the passenger experience. The stakeholders tended to base their notions about customers’ needs and wants on market research and suppositions they had derived from their own experiences; for example, it was not uncommon to hear, “I travel like this ... and I think most people do too.” Often, the subsequent remedies they proposed sought to address these personal challenges.

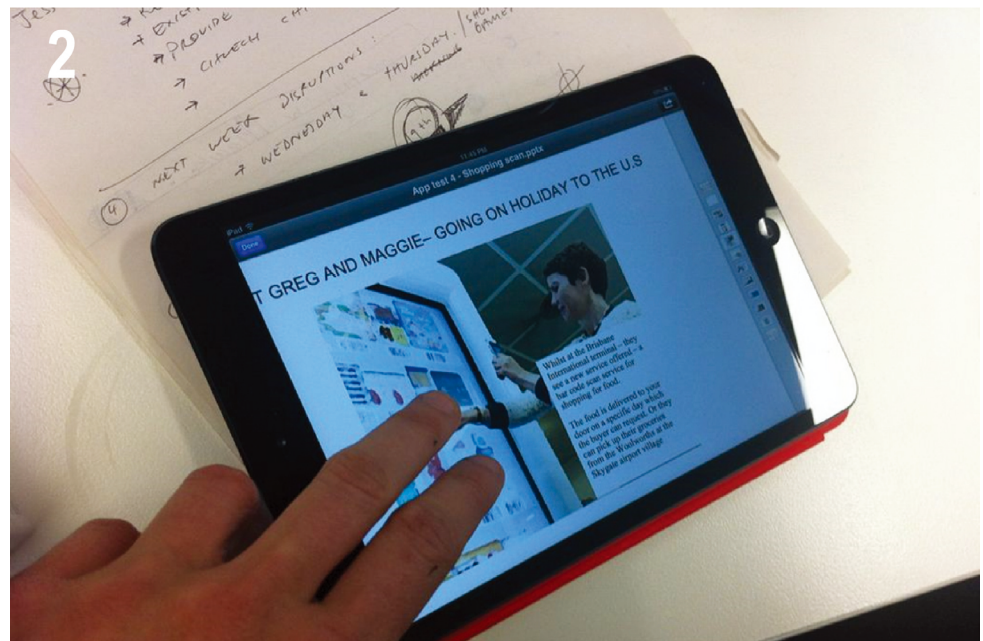
Nevertheless, the catalyst used their ideas to create a set of personas and a script for each – a “day in the life” of various airport customers – which also included a contextual problem to be solved. To visualize the script, the catalyst chose abstracted imagery gathered from public resources, and in some cases created rough sketches to bring the narrative to life. The resulting low-fi narratives – stakeholder-informed, scripted stories about the personas, illustrated with simple imagery – were then presented to airport customers to explore how solving that problem would create value for different actors across the Airport Corporation.

This total process of investigating, formulating personas, constructing the narratives, and identifying the current pains and future gains for customers took one to two weeks, from creation to testing and delivering feedback to the Airport Corporation. [Figure 3](#) provides an example of a narrative applied to gather deep customer insights.

For example, the catalyst (as narrator) would verbally tell the story of a persona to a passenger in the airport terminal, and ask probing questions to establish dialogue about similar kinds of challenges the passenger had encountered when travelling. The narrator would often start, “I’m going to tell you a story, and along the way, I will invite you to fill in the gaps with your own experiences and ideas.” In this way, the relevance of preconceived assumptions and ideas generated by Airport Corporation stakeholders’ could be evaluated in terms of customers’ and external stakeholders’ feedback – thereby revealing imprecise or indeed accurate assumptions held within the organization. The secondary role of the narratives was to elicit customers’ and external stakeholders’ imaginations, and fill in the gaps in each story – these exchanged formed an inclusive collaboration between narrator and narratee where possibilities and opportunities could emerge. These short collaborative engagements (lasting from fifteen to twenty minutes) enabled the participants to shift well beyond identifying current problems with the Airport’s operations toward discussing emotions, desires, hopes, and dreams. The Airport Corporation was then able to absorb deeper customer insights as new possibilities and sources of innovation.

Feedback from Airport Corporation stakeholders noted the strength of this technique. “I thought the tools were very clever in that they allowed us to approach passengers in a new way that was less direct or personally intrusive, but still engage them,” said one. Of the outcomes, one noted, “We were able to uncover so many issues, emotions, reasons that we will be able to tap into.... It has given us so much more direct insight from our passengers that we will be able to action accordingly.”

**Figure 3** (1) An example of a low-fidelity narrative visualization; (2) a tablet displaying the narrative was shown to passengers at the airport terminal. Copyright © 2018 Rebecca Price, Cara Wrigley, and Judy Matthews.



Another stakeholder explained how the corporation used the insights, saying “We start from the customer and try to understand what they value or want to see in a solution. We use that information to build up the scope of the project.” Some stakeholders noted the novelty of the technique. One remarked, “It was [a] completely new concept for me, using research to build reasons and detail, not straight up solutions. It took me a little while to see that the link was the depth and amount of reasons that then framed an answer.” Another said, “Passengers are very relaxed when you talk to them this way.” Low-fidelity narratives allowed stakeholders working within the internal and strategic areas of the business to gather insights from the external world – to move thinking beyond the walls of headquarters.

Low-fidelity narratives quickly engaged both customers and stakeholders in a process of testing assumptions and communicating feedback to the organization. Importantly, this narrative technique provided Airport Corporation stakeholders with a positive experience of design leading to further interest in developing design capability.

### ***Building Proposals with Realistic Narratives***

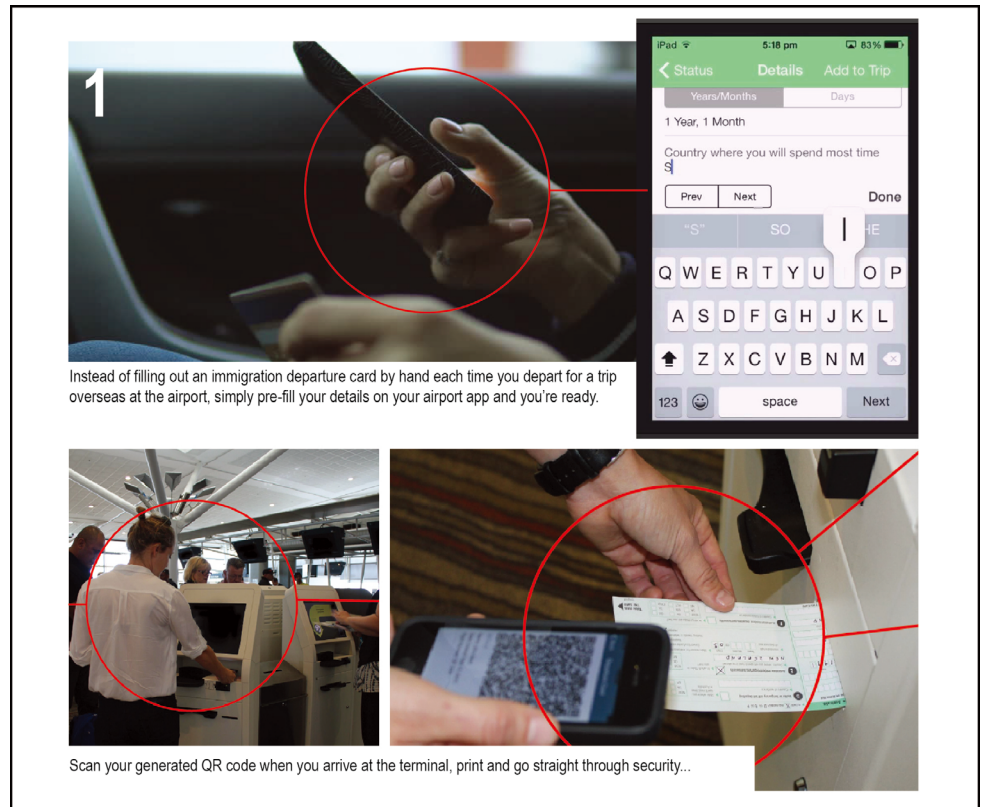
The second narrative technique supported the design-led innovation phase of building and sharing propositions with key decision makers. While narratives illustrated with basic imagery were suitable for quick cycles of gathering customer insight, the prospect of a corporate audience of senior management prompted the research team to reconsider the use of low-fi.

To spark interest among internal and strategically inclined Airport Corporation stakeholders, and create momentum for innovation, the catalyst used still photographs to visualize new products and services. This narrative technique was intentionally applied to support the critical task of gaining necessary financial and legal approvals that would allow a project to proceed. Usually such approval would require a white paper report or business case discussing viability and feasibility. Instead, realistic narratives told the story of how future products and services would be not only strategically viable and technically feasible, but also desirable for passengers and other airport stakeholders. These narratives used the robust, persuasive realism of the still photography to better withstand the scrutiny that innovation proposals typically receive in risk sensitive environments such as that found at Airport Corporation.

Recounting a realistic narrative often began with a verbal invitation: “Let me tell you about a proposed change to our current operations that will vastly improve how we do business...” or “I am going to propose a new service to you today that was inspired by observing and hearing stories from our own passengers’ difficulties.” In both cases, the narrator assigns shared ownership to the proposition by using the possessive “our.” Internally at Airport Corporation, the design-led innovation catalyst was often the narrator, and management the narratee. While the storyline concerned how a new product or service benefitted a passenger’s journey, the Airport Corporation stakeholders would often reflect on what would be required of them or their departments to achieve such proposed operational change. For example, “If we are going to realize that solution, my department has to make these changes to the way we do business...” External stakeholders in the airport value chain also held audience during several realistic narrative presentations. The Airport Corporation, through members of its management, then became the narrator and external stakeholders became the narratees. The “day in the life” passenger storylines acted as the shared focal point between the two parties.

In the case of Action Research Project 2, approval to prototype the solution required sign off from the Australian Government agencies related to immigration and security. Not only was approval achieved, the research team observed that external stakeholders from the government agencies were already discussing their roles and responsibilities in order to go “live” with the prototype. This synchronizing of external stakeholders toward a collective goal was not expected in the first meeting, but nevertheless it laid the foundation for the project to proceed. More broadly, this occurrence demonstrates that narratives communicated with the help of realistic techniques have the potential to accelerate innovation. Further, the government agencies and external stakeholders involved acknowledged the leadership of the Airport Corporation in prompting innovation in a highly regulated, risk opposed industry. [Figure 4](#) shows an extract of a realistic narrative presented to external stakeholders during Project 2.

**Figure 4 (1)** Images from a realistic narrative presented to Australian Government agencies, and (2) the eventual design prototype implemented once approvals were granted. Copyright © 2018 Rebecca Price, Cara Wrigley, and Judy Matthews.



Feedback from the Airport Corporation regarding the outcomes generated by the realistic narratives was positive. Participants noted, “If you apply that narrative it becomes visual and powerful.” Further, “The Senior management team were like ‘wow – that’s fantastic.’” One participant described a realistic narrative presented to the government during Project 2 as follows, “The departure card presentation to the [Australian Government] in Canberra was attended by seven different agencies. Yes, everyone understands the departure card and the process.... The passenger narrative puts [our concept] into reality – it makes sense of it.” Overall, the research team observed that the realistic narrative technique provided stakeholders with the confidence needed to propose new products and services to strategically inclined Airport Corporation management.

### *Shaping Strategy with Strategy Narratives*

The third narrative technique supported the design-led innovation phase of shaping strategy. In this phase, propositions underpinned by deeper customer insights were translated into company-wide strategies for growth. Previous strategy documents within the Airport Corporation were lengthy reports with little visual representation of information. These reports seemed to generate temporary impact before being filed away. As one participant noted, “The narratives – they are really useful. Much better than writing a detailed, ten-page scope. I think people understand it more. Most people turn off after starting to read a report.” The strategy narrative technique contrasts this static, textual format by visualizing the strategy’s core concept, in an effort to avoid disengagement – the turning off. Instead, the aim when developing the strategy narratives was to immediately inspire stakeholders into co-creating and implementing company-wide strategies.

Shaping a company-wide strategy requires leadership to advocate for a specific vision – for example how the Airport Corporation will embrace future digitization challenges in a unified way. A company-wide strategy must also represent the interests of the entire company. In the case of Project 2, the innovation catalyst and an internal Airport Corporation unit (Business Development) were the leading parties assigned to develop a digital strategy. In order to understand the drivers for and interests of each department – for example how varying departments created digital products and services – the catalyst and Business Development unit needed to work across the organization and enlist the efforts of several departments. They used verbal storytelling to gather strategic insights during this process. [Figure 5](#) provides insight into the type of visual material included in a strategy narrative. These narratives were often introduced with these words:

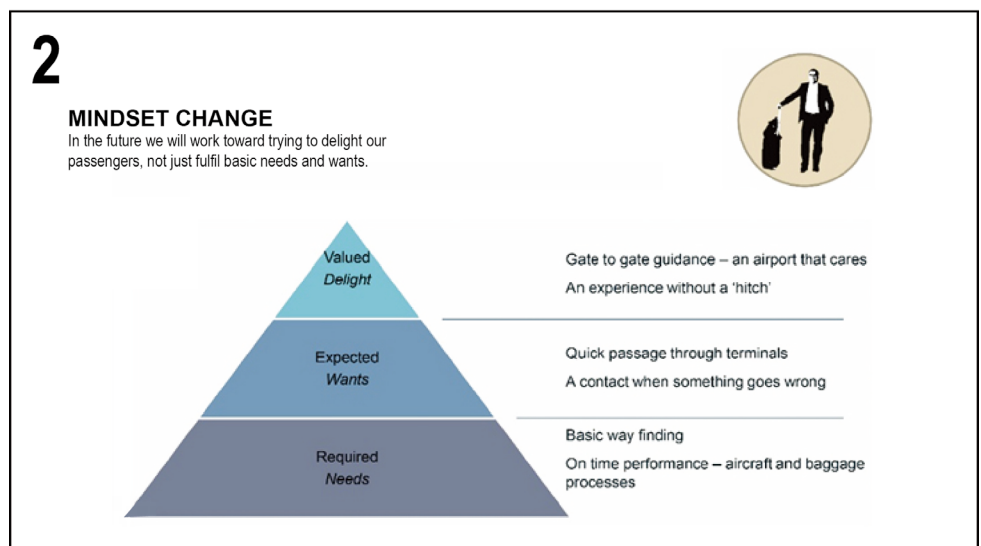
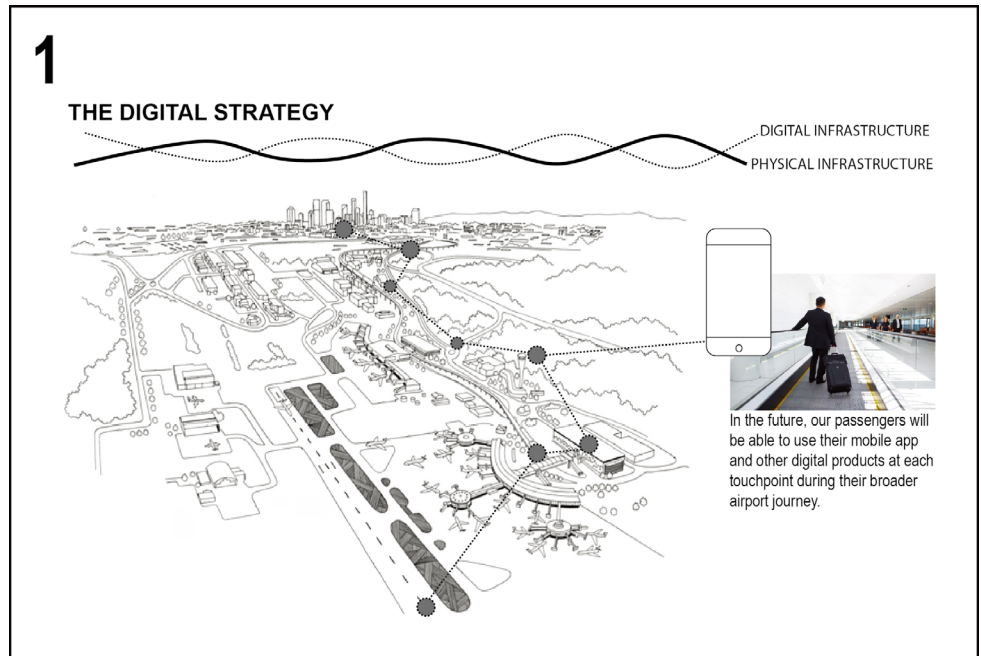
“In the past, our company has developed a variety of digital products and services, but they all have a different look and feel.... In the future, we will have a coherent digital strategy where digital and physical infrastructure will weave together to support each other. What does that mean to you and your department?”

Similar to the realistic narratives, the emergent strategy narratives also involved a collective storyline – “we” and “our” figured prominently in these narratives to assign shared ownership to the cause of shaping strategy. Time signals – “in the past,” and “in the future” – served to flesh out a context that supported critical discussion.

Internal stakeholders from the Business Development unit acted as narrators, and other internal departments were the narratees. The question (“What does that mean to you and your department?”) signaled the point when the narrator handed over the responsibility to “fill in the gaps” to the narratees. A reply would often begin, “This means our department must do the following things...” or “Our department has had success using digital services like this.... That can inform the digital strategy.” Insights from across the organization were captured and funneled into the final digital strategy narrative.

Once created, the Airport Corporation used the digital strategy narrative during project briefing with external consultants. The corporation would narrate a vision for a future to the external consultant while showing visual material during a presentation: “In the future, we want our customers to be able to use digital services to support problem-solving and task completion at specific touchpoints at our airport. Conceptually, it looks like a weaving of physical and digital infrastructure.” After one briefing supported by the narrative (see [Figure 5](#)), an external digital consultancy representative noted the novelty of the approach, saying, “I have never been briefed like this before. It is effective because I have a clear understanding of what you want to achieve.”

Figure 5 (1) Strategy Narrative visualization; (2) a supporting slide from the strategy narrative presentation describing the mindset change required to achieve the outlined digital strategy. Copyright © 2018 Rebecca Price, Cara Wrigley, and Judy Matthews.



As narrative supported the Airport Corporation’s shift toward customer-centric strategic outcomes. On company stakeholder noted how the previous phase of design-led innovation had led to the formation of strategy, “A big thing at the core the digital strategy is knowing about our customers. We need to start by collecting data, and then building that understanding of [passengers] with [which] we can innovate.” During a different project, another company stakeholder described a vision for a strategic shift toward integrating customer experience as a core key performance indicator alongside operational efficiency, “People talk about customer experience, but they are really interested in operations. If something goes wrong they need to fix it up. So they are not really focused on the customer so much, they are more about measuring times and [key performance indicators]” and, “The more we can do to push people out of that way of thinking, that is where I think that might be valuable.”

Prior to formation of a unified digital strategy, several internal departments at Airport Corporation had developed different varieties of digital innovation, and each had a unique look and feel. There was uncertainty regarding what to “do” with digital technologies until a competitor or leader in the industry took visible action.

As one participant explained, “We like to smartly follow industry competitors – to see their success then do things our own way.” Making a strategic shift of this scope was described by a participant as “turning a big ship around.” The digital business strategy now underpins daily value creation. In the eighteen months since the embedded action research period ended, the Airport Corporation has launched multiple products and services that align with their digital business strategy, and has won several industry awards, including the local City Council’s Digital Strategy Innovation Award for digital strategy leadership (2015); Best Airport in Australia/Pacific at the Skytrax World Airports Awards (2016); and Best in Class at the Global Interactive Media Awards (2015).

## Discussion

The purpose of this article has been to explore how narrative techniques can support the implementation of design-led innovation. The design-led innovation framework implies movement between organizational contexts during innovation activities while sustaining engagement and action to build design capability.<sup>40</sup> Although Bucolo and his colleagues have clarified the key phases of the framework,<sup>41</sup> and Rebecca Price and her colleagues have identified a number of suitable methods for its implementation,<sup>42</sup> an underlying need to develop techniques that support the dynamic nature of design-led innovation remains.

In the context of innovation, narratives and storytelling contribute to the realization of novel solutions. Each of the three narrative techniques described within the findings of this article supported a distinct phase of design-led innovation. Low-fidelity narratives supported gathering deep customer insights by surfacing and testing assumptions held within the Airport Corporation with customers and external stakeholders. Realistic narratives provided a technique for proposing and gaining necessary approval for new services and products. Strategy narratives supported the process of co-creating and implementing company-wide strategy.

These three narrative techniques engaged stakeholders and prompted action. Notably, they inspired and invited the narratee participants to fill the gaps in detail with their own experiences, drivers, ideas, and beliefs – triggering what Roland Barthes calls the hermeneutic code.<sup>43</sup> This finding was consistent, regardless of structural variations in narrator and narratee. For example, during the eighteen month period, the identity of the narrator for the design-led innovation narratives shifted from the Design Innovation Catalyst to the business unit and, at times, the entire Airport Corporation. The narratee shifted from passenger to internal stakeholders, and eventually to external stakeholders such as government agencies and digital consultancies. Regardless of these changes, the hermeneutic code could be activated allowing experiences and ideas to surface that could contribute to successful implementation of design-led innovation.

One factor contributing to the success of the project overall was managing stakeholder engagement during design-led innovation activities. To achieve operational change in a complex network such as an airport requires the input of various stakeholders. When a group of stakeholders were asked to fill the gaps together, they synchronistically identified individual and collective critical tasks required to allow a project to proceed – similar to the kind of coordination that Andrew Brown and his colleagues and Bartel and Garud describe.<sup>44</sup> Yet as we identify, the speed of this synchronization was an unexpected benefit. Stakeholders were activated together with the shared pursuit of challenging and overcoming legacy operations and government regulations preventing innovation. Some regulations and associated airport operations had not been altered in over thirty years. The shared pursuit was a function of the focal point of each narrative. Each narrative technique featured a

40 Bucolo, Wrigley, and Matthews, “Gaps in Organizational Leadership,” 18.

41 *Ibid*, 18–28.

42 Price, Wrigley, and Straker, “Not Just What They Want.”

43 Barthes, *S/Z*.

44 Brown, Stacey, and Nandhakumar, “Making Sense of Sensemaking Narratives,” 1035; Bartel and Garud, “The Role of Narratives,” 107.

45 Barthes, S/Z.

46 Francesco and Cautela, "Design Strategies in Different Narrative Frames," 19.

47 Stompff and Smulders, "The Right Fidelity," 14.

48 Based on a set of synthesized criteria developed from Zurlo and Cautela (2014) and Stompff and Smulders (2015).

49 Linked to the work of Bartel and Garud (2009).

50 Bucolo, Wrigley, and Matthews, "Gaps in Organizational Leadership," 18.

passenger visualization as the focal point of the storyline to allow for what Barthes describes as cultural plurality – a shared interpretation regardless of the particular drivers or interests that any one stakeholder brought to the table.<sup>45</sup>

Assembling and conveying narratives during the implementation of design-led innovation became a unique force, attracting the resources and building the necessary relationships to progress projects from concept to realization.<sup>46</sup> Highly descriptive visual representations took the place of formal processes of report writing that were the norm at Airport Corporation, demonstrating that visual representation at an appropriate fidelity can accelerate communication and comprehension of emerging ideas,<sup>47</sup> and understanding of the complexities associated with implementing them. The research team saw how this kind of momentum can contribute to project progress during Project 2, where seven agencies of the Australian Government united within a single meeting to support proposed operational changes to legacy airport processes.

Table 3 contains a synthesis of the attributes<sup>48</sup> of each narrative technique we describe in this article. The three narrative techniques vary in terms of creative source, level of abstraction, prototyping function, and stopping rule. The role of these narrative techniques as a boundary object between parties is also defined.<sup>49</sup> Each narrative supports a particular phase of design-led innovation implementation,<sup>50</sup> a pattern we observed across the period of eighteen months and during three industry projects. The criteria within Table 3 provide practical guidance for developing and applying narrative techniques in research and practice.

**Table 3. Summary of findings.**

Criteria	Low-Fidelity Narratives	Realistic Narratives	Strategy Narratives
<b>Design-led innovation phase</b>	Gathering deep customer insights	Building propositions	Shaping strategy
<b>Creative sources</b>	Persona design, customer journey mapping, technology or trend developments	Customer insights gathered in the previous phase of design-led innovation, stated strategic ambitions of the organization	Broader innovation agenda, horizon model, stretch goals, technology and trend developments; customer or end user needs
<b>Level of abstraction</b>	Filtered	Realistic	Conceptual
<b>Prototyping function</b>	Diverging	Converging	Transforming
<b>Stopping rule</b>	Dependent on depth of insights gathered	Gauged by interest, agreement, and approvals attained	Reliant on consensus
<b>Boundary object locus</b>	Organization / external stakeholders and customers	Organization / external stakeholders allowing for synchronization during efforts to prototype and launch solutions	Among internal stakeholders during co-creation of strategy; external stakeholders after the strategy has been implemented

### Limitations

Developing and applying narratives during each stage of the design-led innovation implementation process (across multiple projects), supported by the expertise of an innovation catalyst, clearly offered a number of benefits in this context. We do acknowledge, however, that further research regarding narratives in other research contexts and processes would generate a clearer view of their potential to influence organizational innovation.



## **Conclusion**

Design-led innovation provides a framework to systematically develop design capability. The purpose of this article has been to understand how narrative techniques can support key phases of design-led innovation implementation. Our findings reveal that narrative techniques stimulate engagement and action while overcoming the challenges inherent to design-led innovation, a framework which requires dynamic movement among stakeholders, between contexts, and along various project timelines. The three narrative techniques we tested in three separate stages of action research supported key stages in the framework implementation process. The narratives enabled the surfacing and testing of internally held assumptions and beliefs with external customers and stakeholders; and the synchronizing of various stakeholders (external and external) during innovation project development. Narratives also helped in obtaining crucial permissions from external authorities that eventually led to innovation implementation, and were a pivotal part of designing and implementing a company-wide digital technology strategy. While this article presents three narrative techniques that supported phases of design-led innovation, future research should explore the application of these narrative techniques in different design methodologies and organizational contexts.