Chapter 15
What’s next? Future challenges and chances for gamification

Tracking and sustaining impact of games is a difficult and constant effort. Technological and material developments create new opportunities to deal with our future and grand innovation challenges.

We have covered a wide range of challenges for innovators and entrepreneurs that can be addressed by means of gamification and games developed explicitly for this purpose. In this chapter we look ahead into the future. We point to some of the persisting challenges for gamification and speculate about the potential of games. We discuss how to validate the positive impact of games, and review some technology-based developments. We end like we started the book – by pointing to enduring innovation challenges for innovators and entrepreneurs and to those that are trending.

15.1 Tracking and sustaining impact

One key aspect of validating games is tracking their impact, that is, determining what exactly happens during the game so that new insights can inform future iterations in game design. Researchers will want to compare alternative designs or different combinations of design patterns in order to optimize a game for a particular innovation challenge. Researchers (and practitioners) will want to know, using qualitative and quantitative data, whether a gamified intervention has a positive impact. Experimental research could compare the quality of results produced by groups working with different ideation games. However, it is largely impossible to conduct a longitudinal study tracking the effects of a single activity in a complex innovation process. Instead we can focus on limited timeframes and look into pivotal moments of interaction when dialogue and content move in novel directions, create tension or result in radical new viewpoints. This makes it easier to detect a game’s impact in a particular context, and aggregate findings from different contexts. For instance, in a research setting one researcher focusses on their role as game facilitator while the other observes, with both switching roles during the game. The use of video allows live experiences and interpersonal interactions to be recorded – even micro-interactions that are happening simultaneously. Ethnography provides a suitable methodology for such an assessment.
As we saw in our first cases in chapter 1, we can focus on immediate ‘after-action’ responses to evaluate a game’s impact. Although this is impractical over long periods of time, immediate after-actions can often be observed, at least to a degree. After the *ACT Dilemma* game (chapter 5.3) was played in a FinTech company, the use of values was observed in everyday work conversations after the gamified intervention. When games focus on specific strategic actions, follow-up inquiries can reveal whether participants chose to follow new paths or not, and discover the reasoning behind these choices. For games designed for training purposes, the focus would be on how well the participants grasp the learning content of the game.

Table 15.1 describes four ways of capturing data from game activities. In-action data can be captured on video, if this is acceptable to all participants. It is the best way to have a second look at interactions and analyse the complex micro-interactions that occur in very short periods of time. Photos can be taken of all outcomes. Notes and a brief report should be written up immediately after the game. Focus group reflections provide participant feedback on the game, and follow-up interviews provide insights into what longer term impact the game has had.

Table 15.1: Four ways of capturing data from game activities.

<table>
<thead>
<tr>
<th>Type</th>
<th>Capturing complex interactions</th>
<th>Capturing outcomes</th>
<th>Capturing reflection on action immediately after game</th>
<th>Capturing reflection on action sometime after game</th>
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<tbody>
<tr>
<td>How</td>
<td>Using video cameras to capture interaction, dialogue and content</td>
<td>Using camera to capture visual outcomes and displays; taking notes on observations</td>
<td>Focus group session to discuss content and outcomes</td>
<td>In-depth interviews to determine long-term impact</td>
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<td>Why</td>
<td>Fine-grain analysis of interactions reveals attitudes and thought processes: root causes of problems and novel solutions</td>
<td>A timely brief illustrated report provides decision-makers with needed and fresh input.</td>
<td>Debriefing and a focus group session aid participants to reflect on their experiences</td>
<td>The impact of a gamification intervention can only be determined by its long-term impact</td>
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**15.2 Technological developments and embodiment**

As we have seen, games are a powerful device to engage stakeholders and provide new perspectives to explore different topics. Not surprisingly they have become a key resource for professional development, with a sizeable industry built around
designing games. One feature of this development is the application of innovation to games themselves. Whether it is the use of new technologies to enable new kinds of interaction and gameplay, the use of portable devices and interactive spaces to set out on radically new directions, or the development of novel game rules and procedures – there is plenty of activity along this moving frontier.

The widespread adoption of new technologies is changing the ways in which games are created and delivered. New augmented realities, advanced personal platforms and artificial intelligence applications create new application formats and new possibilities for future games. Online collaboration platforms (like Mural, Miro, Concept-board or Jamboard) combine visual overviews, simple navigation and interaction techniques which infuse play and game triggers. Other digital platforms are focused on game-based learning content for students and organizations with the goal of constructing a repository of options for users to customize their own games.

With virtual and augmented reality (VR/AR) becoming more widely available, delivery technologies provide new experiences. The potential for interactive gameplay in virtual space is increasing as major players like Facebook reconfigure their business model around the ‘metaverse’ – a collective three-dimensional space where physical and virtual reality converge. New versions of existing games can be ‘ported’ into virtually enhanced environments, opening up new interactive possibilities. Massive multiplayer games like Warcraft have been around for some time, and Second Life demonstrated an early version of a metaverse in which online interaction – using avatars, virtual locations and such – took place in parallel with the real world. This trend is likely to accelerate and open up increasing opportunities for remote access to gaming worlds, raising the possibility for large and globally distributed organizations to build interactive communities. In the field of I&E this could lead to more cross-border collaboration, asynchronous participation, content generation and increasingly more realistic environments. Serious digital games have been around for a while, but they are still costly to develop. Online simulation software will bring down these costs and provide a platform allow the rapid creation and customization of games for specific needs – creating a digital sandbox where different shapes can be easily created.

The availability of simple tools to build apps and websites can be used as elements in building new games experiences. The 60-Minute MVP building game developed by an Experiential Entrepreneurship programme in the USA is a good example of such an approach. It uses online tools such as website builder templates and Facebook adverts in much the same way as LEGO bricks or Post-It notes play a role in today’s games toolbox.
Increasing use of personal and wearable platforms, devices equipped with new sensors, pedometer and location-based services, and the continuing rise of mobile gaming on hand-held devices boost the potential of ‘pocket’ games which can be quickly accessed and played in many different locations. In the I&E space, portable devices are increasingly used to generate game content and to quickly and easily document outcomes. They can also be used to quickly capture a scenario developed in-game, which can then be acted out or simulated from diverse and surprising perspectives. At the same time advances in machine learning and artificial intelligence are likely to mean that agent-based games become increasingly lifelike with interactions and outcomes driven by sophisticated and adaptive algorithms rather than the simple roll of a dice. The potential here is breath-taking: it was some ago that AlphaGo beat the best chess player in the world and it has now mastered the much more complex game of Go. The likelihood of simulated ROLES approximating the actions of real people is increasing. In many online simulations each choice and move made by the participants can be saved and stored, leading to datasheets that facilitate self-reflection and that allow comparison with the choices made by other participants, groups and even competing companies.

While these technological developments will increasingly create new forms of communication, the isolated ‘arenas’ during the covid-19 pandemic clearly show that reliance on online media entails a loss of social interaction and tangibility that severely reduces the possibility of reaching deep mutual understanding in cross-disciplinary settings. The future of innovation games must therefore also lead to the exploration and creation of tangible games where materials, space and roleplay are used as means to bring to the surface tacit knowledge and bring forward those perspectives and ideas that are not otherwise easily communicated. Many of the games described in this book embody affordances and build on the importance of highly tangible and visual boards and maps. For instance, Business Model Branching relies on a bigger ‘branch model’ where participants write on bricks and move them around. The Lego Serious Play approach has at its core tangible bricks that promote metaphorical, strategic thinking, while the Shift game also uses floor space to invite bodily movement and positioning. New frontiers for these tangible games include moving away from materials reliant on playing cards and tables to make use of the full location space, including the floor, walls and furniture. The use of embodiment, enactment and role-play are powerful ways to engage participants in games.

Alongside developments in technology and embodiment, we are likely to see a broader range of application contexts for games. Whereas games were often confined to classroom or workshop settings in the past, we have already seen an extension of their application to contexts where they can form part of the innovation agenda itself. Many of the games in part III operate in this fashion as part of the day-to-day work experience, facilitating exploration and innovation in ‘live’ organizational contexts.
15.3 Foundational challenges and trending application contexts for games

While it would clearly be impossible to make a complete list of future application contexts, we can have a brief look at those basic innovation-related business challenges that are particularly tough and won’t go away. Instead they are likely to become even more relevant in the near future. First we will outline three basic challenges, then three trending challenges.

Basic challenge 1: Organizational ambidexterity & rethinking organizational structures

Organizational ambidexterity as a response to the innovator’s dilemma continues to heavily influence how strategy and innovation processes are organized, launched and managed – in particular, who from the organization should participate in such processes. In today’s markets characterized by a high degree of complexity and temporary competitive advantages, it is a tough challenge for leaders to take on an ambidextrous mindset – one that spans on-going operations and innovation – and to establish it in the broader culture of the organisation. Games can play a significant role in pushing more employees and stakeholders to think beyond day-to-day operations and develop a range of future scenarios which help them tackle needed radical changes.

We just need to stretch our imagination a little bit to take the next step here – to rethink the organization as a serious game that blurs the boundaries between the safe space of the game and the unsafe adventure of taking consequential decisions in the real world. Innovation markets already point in that direction when the bets of participants on different product and service design options are taken as stage-gate decisions that determine which option receives further funding.

Basic challenge 2: Aligning culture & strategy

‘Culture eats strategy for breakfast’, the famous slogan of Peter Drucker formulates another enduring challenge that is highly relevant for innovators and entrepreneurs. Actions speak louder than words and plans. But both strategic plans and the values constituting an organization’s culture are subject to re-interpretation. New viewpoints can be explored in gamified excursions off the beaten track and otherwise overlooked team members and stakeholders can find their voice. The safe space games provide makes it easier for participants to speak up, to articulate their interpretations and to consider more or less appropriate actions to take. This can
help everyone reach a shared understanding. By engaging and acting in alternative worlds, by working their way through scenarios, dilemmas and stories, players become familiar with what influences their actions, and what the consequences are. Playful encounters leave them better prepared to align corporate strategy with organizational culture.

**Basic challenge 3: Managing values for innovation**

Revising and realizing organisational values are often difficult to handle in a repeatable, engaging and action-oriented manner. Games are an excellent way to raise awareness of this challenge and to support these activities. They can be used to explore the systems of priorities that values represent, making implicit values explicit, determining the values of different stakeholder groups, and finding individual and organizational ways to translate them into action and repeatable practices. Easily accessible and scalable formats enable large numbers of diverse stakeholders to contribute to this integration process. Digital tools (like the one IBM used for its values and innovation jams) and gamification can be used to crowdsource and aggregate contributions for values-based innovation management.

**Trending challenge 1: Sustainability & circularity**

While politicians and policymakers are increasingly prioritizing sustainability and circularity in their agendas, innovation managers are looking for approaches that would help them reach the triple-bottom line of economic, social and environmental value creation. Gamification and games already play a role here. However, they can and need to do better, for instance to encourage a creativity as a counter to common sense solutions that foreclose the very potential for innovation they set out to explore. An example of this is found in a critical analysis of social imaginaries in six serious computer games addressing the energy transition – which revealed a fundamentally reductionist design approach. The overarching narratives, the mechanics and the audio-visual design all treated renewable energy as an add-on to the current fossil fuel system, and prioritized technological developments over the potentials of social change, thereby stifling the development of radically new ideas. The challenge we see for game design is how to incorporate niches for true innovation and radical change in the imaginaries (and player actions and decision-making) so that games do not reproduce outdated socio-technical regimes.
Trending challenge 2: Entrepreneurial skill development

Beyond the immediate benefits of establishing a culture of innovation and entrepreneurship, gamified formats can enhance an experience-based development of 21st century skills such as managing non-routine interpersonal tasks, and intrapreneurship or entrepreneurship. Games play an important role where conventional language and concepts are unavailable or unhelpful. They provide access to tacit knowledge and allow the exploration of concepts without calling on formal or explicit knowledge. Instead they offer an experiential route to learning and entrepreneurial skill development. A case in point would be working with refugee entrepreneurs where the potential for providing a sense of identity as well as a livelihood is significant. Training the skills of entrepreneurship using conventional tools like books and spreadsheets may not be possible or appropriate but game-based simulations and other learning experiences can communicate the key concepts and help develop needed skills. Other contexts include early year school programmes and skills development for people without business backgrounds – for example, arts-based entrepreneurship and social entrepreneurship.

Trending challenge 3: Democratizing innovation and sustaining democracy

Games can contribute to ‘democratizing innovation’ by making complex issues accessible to a broad range of stakeholders in and outside organisations. Gamification has the potential to provide a unique approach to non-formal education, motivating young people and engaging diverse stakeholders in the future development of products, services, business models, work processes and new firms. Conversely, democratic institutions themselves can be strengthened through gamified applications such as election support systems which help voters with their decision-making and make complex information easily accessible – also in thought-provoking ways. In countries like Germany, interactive tools like Wahl-o-mat have already become an essential source of information for voters before elections, and for civic education.

For both basic and trending innovation challenges, there are endless opportunities to develop game formats that are enriching for all of us and pave the way to a desirable future. Now it’s up to you to accept the challenge and go for it!