

TM Forum Introductory Guide

Gamification and Continuous Communication with Customers Whitepaper

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Direct inquiries to the TM Forum office:

8 Campus Drive, #105

Parsippany, NJ 07054 USA

Tel No. +1 973 944 5100

Fax No. +1 973 998 7916

TM Forum Web Page: www.TM Forum.org

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Executive Summary

In an increasingly digital world, customers interact with various brands and services of interest in ways that were not foreseen in the past. Such interactions need to be personalized, agile, seamless and enabled at a large scale, in order to meet increasingly demanding and often fickle customer expectations. While customer experience in the past has focused on removing 'friction' in engagements, that in itself will not be sufficient under a digital paradigm. Customers increasingly expect interactions to be interest-provoking and incentive-driven besides catering to their personal needs, preferences and even fancies. Enter gamification, which aims to take the tedium out of a customer journey and generate, maintain and enhance customer interest in the product and services they seek.

Gamification has been successfully innovated and applied in several industries, refer to the [Gartner's Hype Cycle](#) in 2012. However, telecommunications has been somewhat behind the curve in terms of applying innovation to customer experience. Still, many of today's communications service providers (CSPs) are placing a priority on innovative, automated, analytics-driven customer experience as part of their digital transformation to digital service provider (DSP). To this end, the role of DSPs in CE2025 vision, has identified "Manage and Orchestrate Journey to Enhance the Experience" as one of its key functions.

The whitepaper provides an overview of gamification concepts and their application in various industries. It elaborates on how these concepts can be used to address continuous interaction challenges and enable customer stickiness and opportunity monetization.

It is essential for aspiring DSPs to quickly adapt and integrate the concepts into the existing telecom customer journey. This whitepaper provides scenarios and opportunities where gamification can bring value to existing customer journeys. It provides further elaboration on capabilities required to implement gamification in the telecommunications ecosystem from the following two perspectives:

- Existing capabilities that can be enhanced and reused to implement gamification.
- New capabilities required to implement gamification such as the gamification platform

This whitepaper is influenced by the TM Forum 2020 catalyst "Ready Telco One" which covers gamification aspects of customer interactions. The use case implemented by the catalyst is used as an example to illustrate how the topics covered in this whitepaper are aligned to fulfill gamification use case requirements.

Every DSP faces its own challenges stemming from geographic, social and regulatory constraints. A SWOT analysis framework of gamification is provided to help DSPs in decision-making while implementing the gamified customer engagement.

By adding gamified patterns to the customer journey, it will impact the experiences during the journey engagements and create new value. This value is not just depending on the gamified parameters. Organizational factors will influence the benefits and the DSP's different market positioning will deliver different values through gamified journeys.

In order to fully leverage the concepts outlined, it is recommended that a further detailed study be undertaken to develop the technical specifications for gamified customer journey implementation. This study will lead to the articulation of detailed process and platform requirements to further assist DSPs in developing their own prioritized gamification roadmap.

Introduction

Today's communication Services industry is evolving to embrace digital platform-based innovation and cross-industry application of such innovations to provide a smarter, safer and healthier society. TM Forum has been driving such innovations through work programs to provide frameworks, recommendations and innovative ideas across the lifecycle of digital services and customer engagement. Customer Centricity is one of these work programs providing innovative concepts, frameworks, metrics, use cases and customer specific process elements across the customer engagement lifecycle.

As part of the Customer Centricity program, TM Forum is continuously analyzing new customer behavior, service centricity requirements and next-generation experience expectation. Application of such analysis on recommended guidebooks and Frameworks assets is led by experts working in this program

There is a general agreement that CEM is one of the areas which needs holistic investigation by bringing together both the technology and business aspects of future service requirements.

TM Forum's CEM program presents a view of Experience 2025 by bringing together technology and business aspects with an analysis from various dimensions. Based on the various discussions and workshops, the following diagram was created to depict the challenges of Experience of 2025.



As shown in the diagram above, new business opportunities including IoT and smart cities will be further enhanced by 5G technologies. 5G will utilize various technology innovations such as SDN-NFV and Cloud. From business model perspective the focus will be on building an Ecosystem business model consisting of partners and customers. The key responsibility in the ecosystem business model will be to manage and orchestrate the customer journey.

The challenge of managing and enhancing the customer experience in the ecosystem business model will increase multi-fold. Businesses need to continuously innovate to keep customers motivated and derive new methods of customer engagement to address the challenges depicted in the above diagram. One possible solution to address this challenge is the gamification of the customer journey.

Gamification refers to the application of game principles in a non-game context. It includes tasks, activities and game design principles that can be used to solve a particular problem. A term originally introduced by Nick Pelling in 2002, gamification has gained quite a lot of prominence since 2010 ([Gartner's Hype Cycle](#) in 2012). Enterprises have adopted gamification principles to find novel ways for engaging with their customers, employees and partners.

The scope of this whitepaper is to present the relevance of gamifying customer journey, to address the challenges of Experience 2025, integrating it into existing customer journey flows using existing capabilities of BSS/OSS capabilities and defining the new capabilities required to achieve this.

1. Overview of Gamification: Current use and Next Gen Customer Engagement

1.1. Overview of Gamification and its current use

Gamification is not a new concept, it is already in use in many industries such as aviation etc. An example of gamification would be badges awarded by fitness tracking devices. The device tracks the user's fitness regime and awards badges based on the milestones achieved. Additionally, discounts are offered on fitness products based on the exercise regimes followed by the users. Another example is the case of a digital payment app, whereby there is process for recognizing and awarding the app users.

In its most general form, gamification is defined as ***an application or addition of element of game to a non-gaming context*** - in other words making an activity fun in a 'not necessarily enjoyable' context.

1.2. Application of gamification in customer engagement

The gamification of customer engagement is to apply the **game context** to customer engagement. The objective of gamified customer engagement is to make it fun for the customer by embedding game/fun element to it.

A few examples of gamified customer engagement are as follows:

1. **Gamified Discovery:** Gamified discovery is learning about new products and services that a DSP has to offer. A DSP can make the product search into a discovery game - replete with rewards or prizes.
2. **Gamified Campaigns & Promotions:** Recent regulations on privacy have seen an increase in the number of opt-outs by customers and prospects to campaigns. Advertisers and marketers are adopting game mechanics to increase the number of opt-ins (or reduce the number of opt-outs) and increase the level of engagement and advocacy in social media channels. Rewarding the completion of a profile increases the likelihood that the customer is still willing to participate in the game.
3. **Gamified Purchase:** Popular retail brands such as Nike have used immersive technologies to allow customers to try out their products before they bought them. Nike, while promoting their [React Flyknit running shoe](#), launched an interactive video game where the digital avatar of the customer navigates through the game's forest land, while the customer (in real life) is jogging on the treadmill. A CSP can adopt a similar process to let customers evaluate how the new communications service would fit in their digital lifestyle, integrated with other digital devices and products - be it smart home or car.
4. **Gamified Service Journeys:** DSPs are constantly challenged to reduce the cost to serve a customer by enabling customers to self-serve, and yet maintain a high level of customer satisfaction. Self-service journeys can surely be gamified, through interactive quizzes and visual assistance tools. These should be designed in a way that adds value to the customer by helping them gain a deeper understanding of the product and a sense of self-accomplishment.

1.3. Gamified Loyalty

Loyalty programs in digital service industries are often compared with gamified customer engagement as they track user activities and continuously recognize user actions through the loyalty program. But gamification of customer engagement is quite different from traditional loyalty program.

<u>Gamification</u>	<u>Traditional Loyalty</u>
Active: The customer is an active participant in the gamification	Passive: Customer involvement is mostly passive.
Visible and Shareable: Customer achievements and incentives are visible and shareable.	Visible to user: Achievements and incentives are visible to users and not shareable.
Personalization is easy.	Personalization is possible but difficult.
Continuous by its inherent nature.	Can be made Continuous
Proactive	Reactive

Gamification principles could be applied to a traditional loyalty programs to make it more attractive. In other word the application of gamification in loyalty programs could be seen as gamification of the loyalty program.

One such example of gamified loyalty is to gamify the customer loyalty status with the objective to encourage the customers to move from say a silver to a gold Status.

1.4. Stages of Gamified customer engagement

The following diagram illustrates the various stages of gamified customer engagement.



Figure 1 Diagram 2: Stages of gamified customer engagement

The various stages of the gamified journey are described in the below section. The description uses the use case inspired by the Ready One Telco catalyst to explain the actions at every lifecycle stage.

The use case scenario:

1. The customer is watching a live streaming of a match (any match between two teams) over an AR device.
2. The DSP has enabled the live streaming service through its partners of the ecosystem.
3. For any event during the match, the DSP interacts with the customer, e.g. when goals are scored or chance is missed etc. along with a link to watch replay from various angles.

1.4.1. Strategize

This stage involves creating strategy to engage with the customer in a gamified way. The focus of this stage is to understand the customer's likes and dislikes and based on that, game context is embedded into the customer engagement.

An important aspect of strategizing a gamified customer engagement is to define customer actions in the gamified engagement.

Some of the inputs which can be considered during defining the strategy are highlighted below:

- **Customer insight:** Gained through past involvement with the customer.
- **Current state of customer:** Knowing the current customer state, such as location or current action, that could infer that the customer is playing an online game etc.
- **Input from Partner and External sources:** Input received from the partner (in case partner is tracking some customer in isolation) or input from the customer's social media profile etc.
- **Business objective:** Enterprise business objective is one of the key drivers for a gamified journey. The strategy must consider the business objective to be fulfilled through gamified interaction.

Elaboration of strategy phase based on use case:

- The DSP knows the current state of the customer i.e. watching live match over an AR device.
- The DSP has the strategy to gamify the interaction with the customer that happens during event of the game.
- The DSP's business objective is to promote sales of partner merchandise through gamified interaction.
- Based on customer insight, the DSP knows that the customer is a fan of team A (Team A is example name).
- One of the partners of the DSP ecosystem sales the merchandise of customer choice or say merchandise of Team A.
- Customer actions are as follows:
 - Buy the merchandise.
 - Like / Share the merchandise offer with friends.

- Ignore the merchandise offer.

1.4.2. Approach

In this stage, the DSP approaches the customer with gamified engagement embedded within the customer interaction.

Elaboration of Approach stage based on use case:

- **Match Event:** A close chance of scoring goal is missed by Team A.
- **Interaction:** The DSP informs the customer about details of missed chance along with a link to watch replay from various angles, analysis of Team A Dominance.
- **Embedded gamified offer:** Book xyz merchandise from ABC seller and get 10% discount. Plus, opportunity to unlock additional discounts for every goal scored. The following actions can be performed by the customer:
 - Buy the merchandise.
 - Like
 - Share the offer.

1.4.3. Engage

Engaging with the customer involves tracking the customer progress against defined actions and encourage them to complete those actions.

This stage has two following objectives

- Track customer progress
- Motivate/encourage customer to complete the goal.

Tracking the customer involvement in the gamified journey helps in ensuring the progress of the customer in the desired direction and data collected helps in getting more insight of the customer. This information can be used in designing future engagements with customers.

Elaboration of Engage stage based on use case:

- The customer goes for the offer: Initiate and completes the sales process.
 - Asks customer to broadcast his recent purchase with other customers watching AR and are supporters of Team A.
 - Customer Like/ Share the offer: At this the customer has liked the offer but has not initiated the sales yet.
 - There is possibility of purchase hence continue with the offer at each event.
 - Possibility that its friends buys the offer.
 - The customer Ignores/no response
 - If the customer continues to ignore 2-3 times, then the DSP can plan for new offer or other sales opportunity.

1.4.4. Reward

Reward is an outcome of customer participation and goals achieved. Reward can be material or intrinsic in value (e.g. points system) but it must motivate customers to be part of ongoing and future engagements.

Elaboration of Reward stage based on use case.

The elaboration is done for the following scenario where a Team won the game

- The customer made the purchase.
 - Additional discounts based on every goal scored, and additional reward points.
 - A friend of the customer buys the merchandise at 10% discount
 - Reward point based on purchase made by friend whom he forwarded the offer. Not mandatory but can delight the customer.
 - The customer ignores the offer.
 - No reward

2. Gamification as an enabler for Continuous Engagement

Before going into the details of gamification implementation, it is important to identify its relevance in solving challenges of the experience 2025 and opportunity for the CSP/DSP.

2.1. Opportunity for CSP/DSP

In a recent market survey from Reportlinker (as reported by [PR Newswire](#)), the global gamification market was valued at \$6.8 billion in 2018 and is projected to grow at an impressive CAGR of 32% to reach \$40 billion by 2024. This (expected) growth can be attributed to growing demands for engaging customer and employee experiences. CSPs can take advantage of available gamification tools and technologies to drive the desired customer behavior in their journey that would develop a higher level of brand loyalty.

2.2. Continuous Engagement in CEM 2025

As highlighted in the Introduction section, one of the key roles for a DSP in CEM 2025 is to manage and orchestrate the journey with a focus on enhancing the experience of both the partner and the customer.

Further elaboration on some of the challenges identified in the CEM 2025 depiction is presented in the below diagram.

The objective of the elaboration is done to identify the key challenge that needs to be addressed in the context of CEM2025.

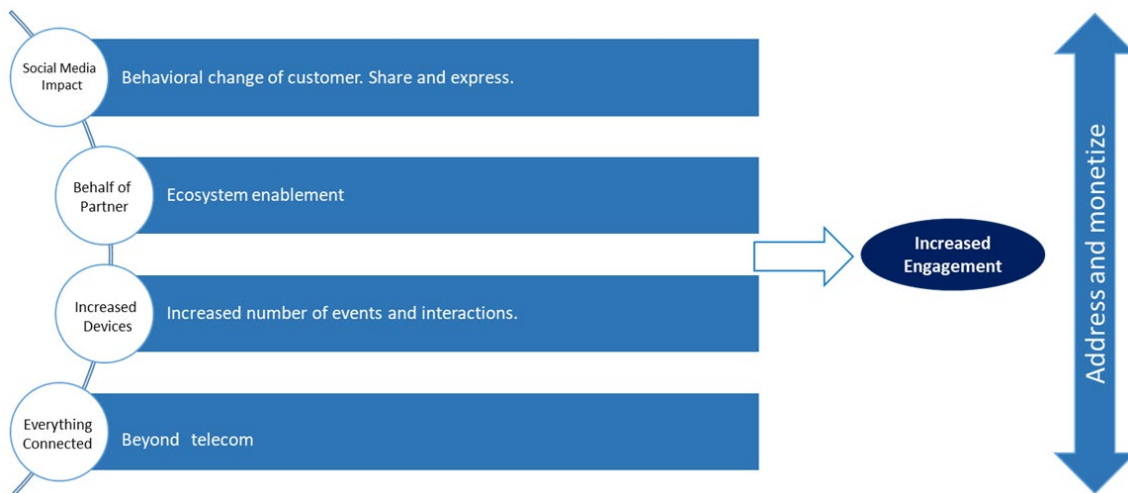


Figure 2 Diagram 3: Increased engagement with customer

As shown in the above diagram, one of the key challenges to address in CEM2025 is to implement a solution for increased engagement with the customer.

One of the solutions to address this is to create a platform fulfilling the need for the continuous engagement with the customer. While the focus is to have continuous engagement

with the customer, it should be done on behalf of the ecosystem incorporating various partners of the ecosystem together.

It is important to lay down the foundation of the continuous engagement by clearly identifying the goals and objectives of such engagement.

Definition:

Continuous engagement is knowing the customer and creating meaningful, productive interaction with the customers.

Goals and Objective

The goal of continuous customer engagement is to create value for the customer, DSP and partners in the ecosystem by interacting with them quite often.

The target of continuous customer engagement is to create value for all participating entities i.e. Customer, Partner and the DSP itself.

- **Value for Customer:** Anything of customer interest, choice or demand.
- **Value for Partner:** Increase the user base, promotion service etc.
- **Value for DSP:** Positive engagement with ecosystem etc.

2.3. Gamification: Solution for continuous engagement

As discussed, earlier gamification is a generic concept and can be applied to any customer journey.

Gamification is not the only solution for continuous engagement nor is addressing the need of continuous engagement the sole focus of gamification. But the inherent nature of gamification with added innovation in defining the gamified offer will certainly help in addressing the need for continuous engagement.

- Embedded fun/reward to keep the customer motivated and engaged. The value of such fun/rewards can be further enhanced by taking into account customer interest/choices.
- Almost all dimensions of customer phases and related customer journeys can be gamified. For example, internal training program of an organization can be gamified to get better outcome.
- Provides opportunity to combine diverse offers under one gamified journey. Hence, ensuring the value for every partner of the ecosystem.
- Tracking the customer actions during the gamified customer journey help in gathering more insights of customers which can be analyzed to continuously create gamified offers based on customer choice/interest.

3. Integrating Gamification to the Customer Journey

As discussed, earlier gamification could be embedded into any phase of the customer journey. It supports existing customer journey by bringing game context to it. It can be applied to both reactive and proactive customer journeys as presented below:

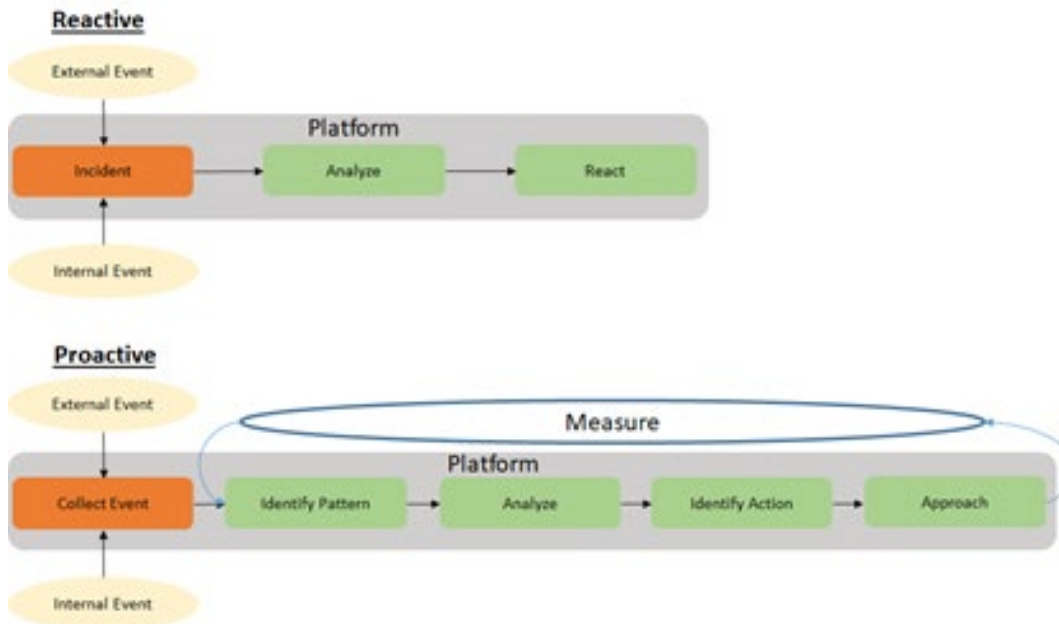


Figure 3 Diagram 4: Reactive and Proactive customer journey

- **Reactive customer journey:**

A reactive customer journey is triggered by a customer incident where the customer approaches the DSP and based on the customer demand, the DSP reacts. It can be applied to any lifecycle phase of the customer journey.

- **Proactive customer journey:**

In the proactive approach, the DSP approaches the customer first. This too can be associated with any lifecycle phase of customer engagement. In the proactive approach, the DSP collects the external and internal events and based on pattern analysis, it identifies the actions and approaches the customer.

3.1. Elements of Game design and its application in gamified journey design

Like every game design, applying/designing of the gamified customer engagement should follow the elements of game principles as mentioned below:

1. Plot outline
2. Goal/Success Criteria
3. Rule

4. Progress tracking
5. Reward

3.1.1. Plot Outline

The customer engagement serves as a plot outline. The game story should be built around the phase of the customer lifecycle.

3.1.2. Goal/Success criteria

The goals/success criteria of the gamified customer journey/engagement must cover the following two perspectives:

- **Direct** - Objectives of the game embedded within the customer journey. It covers the aspects of goals of the participant. In the gamified journey, the customer is the participant. This part of the rule is clearly articulated in the gamified offer embedded in the customer journey.
- **Indirect** - Business objectives to be fulfilled by this customer engagement. It is internal to organization and is used to measure the objectives fulfilled by the customer engagement.

3.1.3. Rules

Rules defined in the gamified customer engagement serves the following two perspectives.

- **Criteria for participation:** This can be used as one of the criteria to identify the potential customer.
- **Constraints:** Rules to be followed by the participant while engaging in the gamified customer journey.

3.1.4. Progress tracking

The source for progress tracking is customer events generated by customer actions during the customer's participation in the gamified journey. Events/actions can hugely differ based on the gamified offer such as a walking event, running event, watching event etc. While creating the gamified offer, it is important to clearly identify the actions to be tracked to measure the progress/success of both customer and organization goals.

3.1.5. Reward

Rewards are key for keeping the customer motivated. It is not necessary to associate monetary value to it. For example, it can be just a fun part like some badges etc. Rewards are part of the gamified offer design and should be stated clearly when the offer is communicated to the customer.

3.2. Integrating gamification

In order to build a successful business model relying on gamification, an enterprise must first identify the specific process, customer journey or the interaction touch points which would need to be gamified: what are the goals and what value it would add to the participating players. An enterprise should clearly identify the customer segment (players) who are going to participate in the game, their profile and archetypes, their behavior and actions that can be gamified. The bottom line for any gamification is to ensure that it provides value to the players.

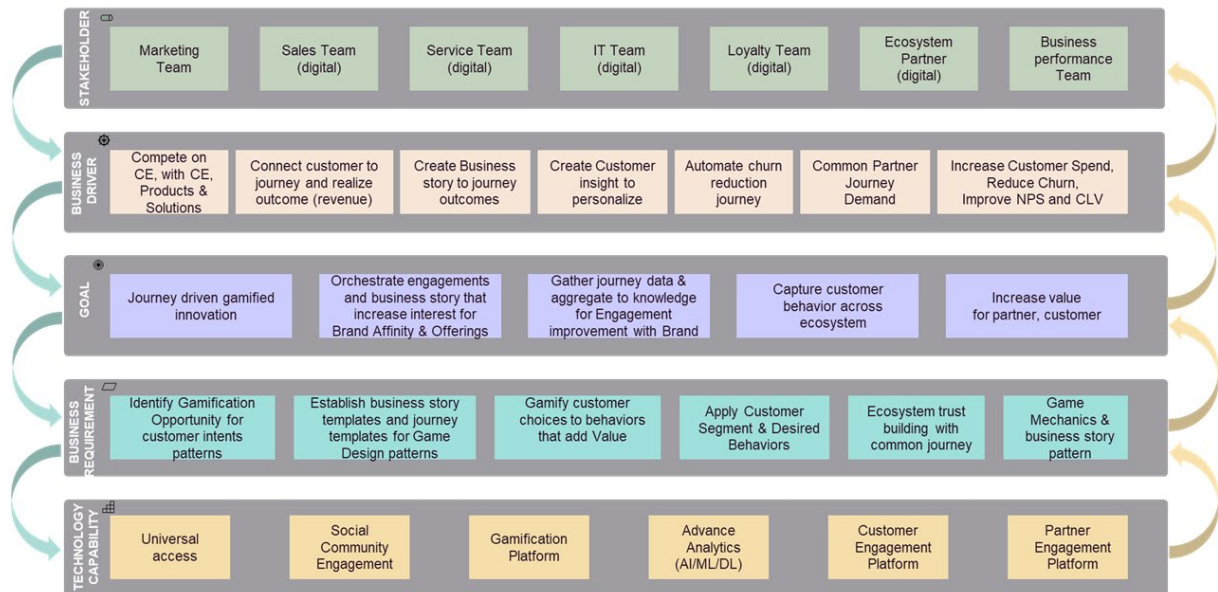


Figure 4 Diagram 5: Integrating gamification

It is important to understand that gamification does not necessarily equate to games in business, but rather involves implementing concepts of game-playing to a business process. The above diagram depicts the detailed map of the technology capabilities, business requirements, goals, driver and the stakeholders for implementing the gamification concepts. Businesses can take either of the two approaches, bottom-up or top-down, to integrate gamification to the customer journey but it is important to take into account the various dimensions the capabilities depicted in the above matrix. Gamification of a business process needs to include game mechanics with a specific goal of influencing relevant behavioral elements of participants (players) that would ultimately add value to them. These decisions and choices are critical during the design process and need to be data-driven. Examples include data from past activities, service usage and behavioral patterns. A data-driven approach will help an enterprise sculpt games to best suit different customer segments at the appropriate levels.

Enterprises often struggle to balance the elements of exploration and curiosity from players while avoiding frustration. Awards and recognitions, such as loyalty cards from retail stores or frequent flier rewards from airlines, are essential to drive higher levels of engagement, keeping the 'fire' of exploration alive. However, merely sprinkling points and badges across a journey will not achieve desired results. Rewards should function as motivational triggers and be given only when the desired behavior or achievement level is reached.

Motivation to stay engaged in a game is dependent on seeing immediate and meaningful results. In today's world, it also means capabilities to share your rewards and continued progress with your friends, family or coworkers. In other words, a sense of community among the players is important. This not only fosters the network effects of higher adoption of the game, but also imbibes the notion of multi-player games. The recent surge of [Netflix Party](#), during the 2020 pandemic, highlights the importance of group behavioral dynamics on how all of us would want to consume services.

A compelling and immersive User Experience for the player is the single most critical element to ensure success in gamification. Common game features, such as creating a personal "avatar" would attract more players to participate in a game. The Experience layer (most likely an app) should also provide a full 360 view of the game journey, but also provide a means to connect with other members of the community.

4. Capabilities Required to Fulfill Gamification Business Requirements

As discussed in the earlier, the gamified customer journey goes through the stages as shown in the diagram below:



Figure 5 Diagram 2: Stages of gamified customer engagement

Based on scope, the implementation might vary, but in general, every gamified journey need capabilities to support the above-mentioned lifecycle stages.

In addition to the above mentioned lifecycle stages of gamification, the key requirements which need to be addressed by underlying technical/platform capabilities are listed below.

- Progress and Stage of the Game Journey highlighting achievements, levels/rank and badges earned
- Leaderboard (if applicable) to show where other players stand (without violating privacy)
- Feedback and response to actions and activities
- Clear steps to move up the level or status within the community
- Capability to share achievements with peers in the community
- Capability to collaborate - working with others to achieve a goal and helping others to achieve their goal

4.1. Key capabilities mapped to lifecycle stages

4.1.1. Strategize

This is the first stage of gamified customer journey. In this stage the DSP creates a strategy to engage with the customer using the gamified offers etc. The strategy development may be implementation or use case specific e.g. the gamified engagement may promote certain services and offers. In the use case for creating awareness and to increase uses of self-care applications. In addition, customer behavioral data, past engagement etc. plays important role in defining the strategy.

- **Aggregated behavioral data:** Aggregated customer behavioral data will help in creating personalized customer offers with maximum probability to engage with customer. This also includes the outcome of customers past gamified engagement.
- **Personalized offer:** In gamified journey the personalized offer based on customer likes and dislikes plays an important role. Hence, capability to create a personalized offer is important for gamified interaction.
- **Location information/Device Information/Current Service usage information:** Capability to identify the current location, device information or the current service/application used by the customer can help further in refining the strategy.
- **Customer Achievement Events and Rewards:** In addition to a personalized offer configuration, it is also important to define the achievement events and rewards to bring the essence of gamification.
 - **Achievement Events** are the events which customer will complete during engagement. There could be different types of events based on the gamified offer. Further to this, one or more than one event can be part of one or more gamified offer.
 - **Rewards** plays an important role in motivating and keeping the customer engaged. The rewards can be associated with one or more than one gamified offers. Rewards are not always required. In many scenarios, a fun part in the customer engagement is sufficient to keep the customer moving and engaged. It is important to create value for the customer during the engagement and this can be achieved through rewards or through a fun element embedded within the customer journey.

4.1.2. Approach

This is the first stage of gamified customer journey. In this stage the DSP approaches the customer with a **gamified offer**. While the gamified offer will depend on the use case and innovation that a DSP can bring, creating gamified offer requires the following regardless of the use case or business scenarios:

- **Channel orchestration and management :** Capability required to identify the right channel for approaching the customer and to enable omni channel experience for the customer.
- **Customer journey management :** To manage and orchestrate the customer journey from approaching the customer and all related subsequent interactions with customer.

4.1.3. Engage

In the gamified customer journey, it is important for the DSP to stay engaged with customer. There are two aspects which are fulfilled by DSP through such continuous engagement.

- Capture of customer actions against the defined event or progress tracking.
- Encouragement of customer to complete the events defined.

The key capability required at this stage is the capture the customer actions or the generated customer events:

- **Capture and store Events generated by customers:** Capability to capture the events generated by customer through its action during the gamified journey. There is also possibility that Events can be captured by partner and then transferred to DSP.
- **Validation and Verification of Events:** Capability to validate and verify the collected events

- **Event consolidation and correlation:** Event consolidation and correlation capability is required to track the customer engagement with the gamified offer.
- **Customer interaction:** Capability to interact with customer to motivate or guide to complete the achievements defined as part of gamified offers.

4.1.4. Reward

Reward is essential for any game implementation, including the gamified customer engagement. It helps in keeping customer motivated and ensures customer participation in future engagement. Rewards are defined as part of gamified offer and are calculated based on customer participation. They can also be decided based on customer continuous participation in a related gamified journey.

- **Correlate events to achievements:** The capability to correlate the events based on the rules defined for achievements and derive the awards or points.
- **Store the customer Reward and badges:** Capability to store the customer reward, badges or points earned by the customers through its participation in the gamified journey.
- **Measure Outcome of Gamified Engagement:** Capability to measure the success of gamified engagement with customer. There is no set dimensions to measure this, often the parameter varies based on the use case or the offer. Few examples are as follows:
 - **Impact on individual customer:** Measured through value created for the customer
 - **Impact on Group of customer/ in the social media:** Measured through impact on a group of customers connected to the target individual or negative/positive sentiments created in the social media

4.2. Technical/platform capabilities

It is evident that not all capabilities mentioned above are to be built from scratch. While gamification implementation will utilize the existing OSS/BSS capabilities either by improving the existing capabilities or by reusing it in the existing state. But few technical capabilities are new and should be built specifically for gamification implementation.

The following section provides the list of technical capabilities/platform to be built specifically for gamification or to be reused from the existing OSS/BSS stack.

Note: The list is based on the current study hence might not be exhaustive

Technical Capability/Platform	State	Remarks
Gamification Platform	New	Gamification platform will play the role of anchor for implementing the gamified customer journey across all the four lifecycle stages. The other platform/technical capabilities will play the supporting role. 1. Achievement Events and Rewards management

Technical Capability/Platform	State	Remarks
		<ol style="list-style-type: none"> 2. Capture and store Events generated by customers 3. Capability to validate and verify the collected events 4. Event consolidation and correlation 5. Correlate events to achievements 6. Derive customer rewards 7. Measure Outcome of Gamified Engagement 8. Next Best Action
Customer Engagement Platform	Existing	Reuse of existing Customer Engagement platform capabilities.
AI/ML	Existing	AI/ML capabilities to bring value to the gamification platform including AI/ML based Next Best Action
Partner Management	Existing	<p>Partner Management platform will require additional capabilities like follows:</p> <ol style="list-style-type: none"> 1. Enable partner to define Achievement Events and Rewards 2. Enable partner to share the customer Achievement event records.
Channel Management and Orchestration	Existing	Reuse of existing Channel Management and Orchestration capabilities to interact to customer during gamified interaction.
Loyalty Management	Existing	<p>Loyalty Management can be reused to manage the badges, reward points earned by customers. The existing loyalty management will require enhancements to support additional functionalities required for gamification journey like</p> <ol style="list-style-type: none"> 1. Managing multiple different badges earned by customer 2. Managing points earned under various categories. 3. A single customer can be ranked based on different dimensions. The existing Gold, Silver ranking etc. might not be sufficient for gamified customer journey.

Technical Capability/Platform	State	Remarks
Event Collection and Processing Engine	Existing	The existing event collection and management capability can be reused to collect the customer generated events etc. But significant increase in number of events generated will require performance enhancement of existing capability.

In summary, a customer engagement platform with embedded gamification capabilities is essential to serve as the engine to provide these capabilities and to design, execute and monitor these gamified journeys. Machine learning models will be critical to predict the success of a gamification journey against specified metrics.

5. Use Case

5.1. Gamification catalyst use case - Ready Telco One

Contribution Credentials

	Name	Company	Date
Original Contribution by	Ready Telco One	Catalyst Team	Aug-25-2020
Additions and updates by	TMF-CEM Team	TMF-Collaboration	Sept-01-2020
Reviewed by	TMF-CEM Team	TMF-Collaboration	Sept-01-2020
Approved by	TMF-CEM Team	TMF-Collaboration	TBD

Attributes

Attribute	Description
ID	C-CEM-PEM-054
Name	Gamified User Experience for a Market Place
Hierarchy	NA
Motivation	<ul style="list-style-type: none"> Engaging with the customer in more exciting and valuable motivations. Collaborative approach to promote partner engagement. Reward the customer continuous customer journey Revenue sharing with partners
CxLC Stage(s)	<ul style="list-style-type: none"> Be Aware Observe, Learn, React (like, dislike) Interact Inquire, Request Detail, Reserve Choose Select, Place, Receive Consume Use, Review Use, Evaluate Value Manage (Manage Profile/Service, Get Help, Request to Resolve) Pay (Receive Notification, Verify or dispute, Pay) Renew (Enhance Selection, Re-contract) Recommend (Refer Product/Service, Gain Loyalty) Leave (Feedback, Discontinue)
Actors	Customer, Market Place Owned by DSP and Partners (Telco and Non Telco)

Entry conditions	Customer is part of marketplace ecosystem created by DSP along with its partner. And hence the customer has agreed to share its insight with the Marketplace and its partners.
External References	
Customer Experience Metrics:	Refer the GB962-A;
Other metrics:	
Data Sources	Customer behavioral data Customer Interaction Customer Rewards and Points earned Market Place Offerings Customer achievements and events Customer Information Data

Business Model Canvas of the Use Case	Provide a business model canvas about this use case. Use this canvas to develop and create a business case for this use case and identify if there is a business reason to proceed.
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Customer	Segment	Channel	Relationship	Experience
	<ul style="list-style-type: none"> Existing CSP Subscribers Transient Customer Prospective Digital Service Subscribers Interest-Specific Segments	<ol style="list-style-type: none"> Mobile Application Marketplace Point of sale Device capability based applications like Virtual reality 	Gamified Customer Experience	<ul style="list-style-type: none"> Gamified customer experience will keep customer engaged. Next Best Action based on customer behavioral data. Rewards Offers from diverse partner based on customer

					likes & dislikes.
Value Proposition	<ul style="list-style-type: none"> • Revenue share from partner products • Gamified services • Personalized bundles across multiple partner services • New postpaid subscribers, new app users 				
Cost Structure	Revenue Sharing				
Revenue Streams	<ol style="list-style-type: none"> 1. Revenue share from partner products 2. Innovative gamified offer 3. Personalized bundles across multiple partner services 				
Key Activities	Key Resources	Key Partners			
<ul style="list-style-type: none"> • Partner onboarding • Offering configuration • Achievement configuration • Reward configuration • Order management • Gamified customer interaction management • Partner products/services • Traditional Telco services • Digital gamified services • Customer insights • Customer achievements/rewards 		<ol style="list-style-type: none"> 1. CSP 2. DSP 3. Device Provider 4. Event Organizer 5. Non Telco Infrastructure Provider 			

Attribute	Description
Story:	<p>As a Digital Service Provider</p> <p>I need to Enhance the customer experience in digital ecosystem using the new paradigm of gamification</p> <p>So that I can Increase ARPU</p> <p>To do this I need to</p> <ol style="list-style-type: none"> 1. Engage continuously with customers of Digital Ecosystem

Attribute	Description
	<ol style="list-style-type: none"> 2. Create personalized offerings and achievements based on customer interest. 3. Onboard relevant partners. 4. Incentive for partner based on involvement. 5. Establish a dynamic partner ecosystem that evolves with the market. <p>I know I am successful when</p> <ol style="list-style-type: none"> 1. I create a gamified interaction with the customer and am able to monetize the gamified experience. 2. Generate dynamic and personalize offers, with the help of partners onboarded services, that increases ARPU. 3. Keep customer and partner engaged.
Actions and processes	<ul style="list-style-type: none"> • Partner onboarding <ul style="list-style-type: none"> ○ Partners are onboarded along with their product and services. ○ Partners are allowed to define achievement events. • Customer onboarding <ul style="list-style-type: none"> ○ Customer downloads and installs the App provided by DSP. • Customer management <ul style="list-style-type: none"> ○ DSP take customer consent for sharing information across partner. ○ DSP manages the ecosystem customer • Customer Interaction <ul style="list-style-type: none"> ○ Customer interaction is orchestrated by DSP. ○ Actions of customer are collected as event data. ○ Partner too can collect data of customer actions if ○ Customer behavioral data along with its present and past interactions . • Offer creation <ul style="list-style-type: none"> ○ DSP creates gamified offer to customer based on customer behavioral data and past actions. • Customer engagement and progress tracking <ul style="list-style-type: none"> ○ DSP engages with customer to track the customer progress and motivate customer to complete the achievements presented through gamified offer.

Attribute	Description
	<ul style="list-style-type: none"> ○ DSP collects the achievements events of customer. ○ Partner collects the customer achievement events through its channel and share it with DSP. ● Customer engagement and progress tracking <ul style="list-style-type: none"> ○ DSP engages with customer to track the customer progress and motivate customer to complete the achievements presented through gamified offer. ○ DSP collects the achievements events of customer. ○ Partner collects the customer achievement events through its channel and share it with DSP. ● Reward calculation and sharing <ul style="list-style-type: none"> ○ Based on the criteria and rules defined for the gamified offer, DSP calculates the reward for the customer. ○ The reward details are shared with customer. ● Revenue share <ul style="list-style-type: none"> ○ DSP shares the revenue with the partner based on the agreed model. ● Measure Outcome of Gamified Engagement <ul style="list-style-type: none"> ○ DSP Measuring the outcome of the past gamified engagement with customer. ○ DSP shares the outcome and customer insights with partner as per the agreement. ● Above continues running in a loop to give continuity to customer engagement.
<p>Building Block(s)</p>	<ul style="list-style-type: none"> ● Gamification Platform ● Customer Engagement Platform, focus on customer journey management ● AI/ML capabilities ● Partner Management ● Channel Management and Orchestration ● Loyalty Management ● Event Collection and Management ● App for customer interface

Attribute	Description
Privacy Risk Score	<p>It applies to BDA Use Cases.</p> <p>Above 40: High, should act on advice.</p> <p>Customer insight sharing is covered by the customer consent during the app installation by customer. But customer privacy is one of the important dimensions in the ecosystem business model hence the score is high.</p>
Feasibility Parameters	NA

5.2. Gamification of the Customer Self Service Usage/Option

Contribution Credentials

	Name	Company	Date
Original Contribution by	Shailesh Shrivastava	Ericsson Inc	06 Jul 2020
Additions and updates by	TMF-CEM Team	TMF-Collaboration	Sept-01-2020
Reviewed by	TMF-CEM Team	TMF-Collaboration	Sept-01-2020
Approved by	TMF-CEM Team	TMF-Collaboration	TBD

Attribute	Description
ID	C-CEM- CSA-055
Name	Gamification of the Customer Self Service Usage/Option
Hierarchy	NA
Motivation	<p>One of the business problem CSPs have on how to promote the self-services options for consumers and keep them engaged with new offerings/ value added services without adding additional cost.</p> <p>There is a huge Opex cost for CSP on</p> <ol style="list-style-type: none"> 1) Customer care team on serving customers 2) Advertisements (Online/ offline) on making customer aware about new product/ services/ promotions

Attribute	Description
	<p>Motivation of this use case here to explain use of gamification techniques for more active engagements from customers and incentives on using new offerings.</p> <p>In simplistic meaning "Gamification" means using motivational techniques like those the video game industry has put to such effective use.</p>
CxLC Stage(s)	<p>Each of the below stages would result in Customer Rewards in form of Points, Stars, engagement levels or other customer specific i.e.</p> <ul style="list-style-type: none"> • Be Aware Observe, Learn, React (like, dislike) • Interact Inquire, Request Detail, Reserve • Choose Select, Place, Receive • Consume Use, Review Use, Evaluate Value • Manage (Manage Profile/Service, Get Help, Request to Resolve) • Pay (Receive Notification, Verify or dispute, Pay) • Renew (Enhance Selection, Re-contract) • Recommend (Refer Product/Service, Gain Loyalty) • Leave (Feedback, Discontinue)
Actors	<p>Entities involved in the use case, Primary Actor(s) Consumer, Supporting Actor(s) Customer care, /Customer experience team, Retail teams</p>
Entry conditions	<p>Conventional self-care options using web or mobiles are very static and provide limited options/ experience for customers. Entry criteria here is to motivate customer to log into Mobile app for CSP more frequently . The presented solutions are made for organizations that at least fulfill below conditions.</p> <ol style="list-style-type: none"> 1) Basic self-service options exist and integration available with Smart phone on major mobile operating system Platforms. 2) Have ways to uniquely identify customer and store interactions & customer preference across multiple touch points. 3) Partnership with 3PP on Incentivization the customer interaction through rewards program is preferred. 4) Consumer agreement and social networking profile
External References	<p>TMF Framework</p> <ul style="list-style-type: none"> • eTOM • TAM

Attribute	Description
	<ul style="list-style-type: none"> • SID
Customer Experience Metrics:	<p>A list of the customer experience metrics that this use case impacts. The metrics used to describe each use case are those defined in the TM Forum Customer Experience Management Lifecycle Metrics specification GB962-A</p> <ul style="list-style-type: none"> • Number of Avg time spent on Mobile app / month • % of customers served by care team vs Mobile app • % <i>First Contact Resolutions</i>.
Other metrics:	<Redeem pattern>, <Reward points> etc.
Data Sources	<p>A list of every data source that is essential to the success of the use case implementation, ordered by relevance. The following are examples and are not meant to be an exhaustive list.</p> <ul style="list-style-type: none"> • Reward customer id • Device (Capability and Usability) • Activity Type • Advertising Channel ID • App Version • Attribute • Location • Loyalty Program ID • Market Channel Type • Referring Customer ID • Region ID • Response Channel ID • Social Network ID • Source ID • Start Time • Survey ID • Target IP Address • Time of Day

Business Model Canvas of the Use Case	Provide a business model canvas about this use case. Use this canvas to develop and create a business case for this use case and identify if there is a business reason to proceed.
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Customer	Segment	Channel	Relationship	Experience
	Customer segmentation based on Age, Preference, engagement level, Potential revenue	Self-service options through Web and Mobile app channel	Customer profile	Learning from customer preference from online activities and offering engaging games to try new services, promotions, devices. Also provide games, quizzes and other interactive experiences to improve customer awareness
Value Proposition	Improved customer loyalty, incentive to bring friends and families, Reduction in call to customer care, visit to retail stores			
Cost Structure	The most important costs incurred by this business model is related to cost for maintaining customer preference data, reward program partnership can be used to recover some of the cost.			
Revenue Streams	Cost saving, increased revenue from cross sell/up sell opportunities			

Attribute	Description
Story:	<p>There are ways in which a DSP/CSP promotes the usage of self-care application. The focus is mainly on creating awareness of self-care application usage.</p> <p>With gamification DSP/CSP can add element of fun and reward to increase active participation of customers. This will help in increasing the usage of self-care applications.</p> <ol style="list-style-type: none"> 1) Consumer provided offer/promotions for initial sign up optional bonus incentives. 2) Customer agrees to T&C and sign up for self-service options and link social profile

Attribute	Description
	<p>3) Customer's base profile is assigned a reward customer id based on Device, location, activity and other attributes</p> <p>4) Customer is given incentive for every or relevant interaction, purchase, trial</p> <p>5) Option for reward redemptions.</p>
<p>Actions and processes</p>	<ul style="list-style-type: none"> <p>• Offer Creation</p> <p>When consumer (or subscriber) signs up, system determines if an offer or promotion should be made. This could be based on a variety of factors including customers propensity to interact with system, value of customer to CSP, likely hood of customer churn, why CSP wants interaction with customer (e.g. retain customer, training such as new app/phone/automate help desk/...) etc. Customer ID's and other ID's across different channels, systems etc. should synchronize at this time.</p> <p>• Customer Interaction and Channel Management & Orchestration</p> <p>As consumer interacts with different applications across different channels, there is a system to capture these interactions. Interactions can vary from customer clicks, duration of using applications, determine interest level of customer for the application and which portions of the applications etc. These applications could be provided by the CSP or different vendors running on the "Customer Engagement Platform" (CEP). There also needs to be a mechanism to correlate the interactions between the different applications so that a 360 degree view of customer interaction can be created.</p> <p>• DA, AI and NBA</p> <p>The system will analyze the above data using analytics and AI to perform the following</p> <ul style="list-style-type: none"> <p>• Predict what a consumer with similar behavior is likely to do. This will be based on what when we know about behavior by others, the customers 360 degree view, applications the customer is using, previous behavior of the customer etc.</p> <p>• Determine what is needed to ensure that the consumer continues interacting with the applications on the CEP. This could include recommending another application, providing reward points etc. It is essential that this be done close to real time so some of these inferences may need to run at the edge</p> <p>• One of the ways is to determine appropriate Next Best Action (NBA) and offer it to the consumer. If the consumer accepts the offer and continues interaction, the appropriate AI and</p>

Attribute	Description
	<p>Analytics models with associated data are updated for future recommendations. If offer is not accepted, then alternative NBA's determine and offered to customer. If customer neither accepts nor rejects the offer, then system needs to hold transaction in limbo state for a while till a determination can be made on what response is or could be.</p> <ul style="list-style-type: none"> • Revenue calculation and Sharing <ul style="list-style-type: none"> ○ If transaction results in monetary transactions, the appropriate applications vendors need to be paid based on contractual agreements. • Continuous Engagement <ul style="list-style-type: none"> ○ Above continues running in a loop to give continuity to customer engagement.
Building Block(s)	<p>Following are the list of essential functional building blocks for Customer Engagement Platform</p> <ul style="list-style-type: none"> • CRM for customer information. Providing 360 degree view of customer including customer interactions which is constantly being updated • Application Onboarding from different vendors in an integrated fashion. • Data collection including customer events data and data from various external and internal sources such as Social Media, partners etc. • AI enabled data analysis and predications, for example Next Best Action (NBA) to predict and guide future customer behavior/engagement. • Transaction management. Providing full transparency across CSP and multiple partners for operational and commercial contracts settlement. For example, using Block chain technology for accuracy in accounting or for maintaining the integrity of the transactions. • Interaction Management. Mechanism to capture interactions across different applications and correlate data, including the customer event data generated by customer through gamified engagements.
Privacy Risk Score	<p>It applies to BDA Use Cases. Below 20: Superior privacy, little concern.</p>
Feasibility Parameters	NA

6. CSP Options for CE Value Delivery

The customer journey is considered an important concept for delivering experiences in customer engagements by adding gamified patterns to the journey that will impact the experiences during the journey engagements. The DSP might focus differently in the market with their products such as focus on network pipe versus an integrated DSP. All types of service providers have the use case “enable the customer to buy”. With the service providers chosen market positioning, they generate value differently. Also, the generated value is managed in different manners that lead to different resulting value levels. For example:

- Customer journey (sub-)processes are standardized
- RACI matrix, as an organizational asset, is applied for customer journey governance and operations
- Customer journeys are built through business & IT journey skilled employees across the two functions
- Applying digital (tool) capabilities for handling gamified journey patterns
- Performance result dashboard for gamified journey optimization direction.

The above examples suggest that the generated value of gamified journeys depend on the digital transformation capability of the organization. Gamified journey is a digital transformation process of the customer journey that adds value to each journey step. The gamified journey value gain depends on the chosen approach “how” an applied gamified pattern are implemented along with some business choices. The Gamified Journey “GJ’s value” ambition might be expressed as is shown in the diagram below.



The above diagram express in different ways the possibilities for delivering value & benefits with gamified journeys.

The gamified journey business value drive “impact = relevant + clear + believable”. Gamified journeys:

- drive, based on gamified patterns, interactive journey impact and evoke emotions
 - are tied to business performance (successful GJ’s deliver revenue, CE, brand value, cost reduction)
 - are using informed decisions based on customer behavior plus knowledge
 - create compelling outcomes automatically
1. DSP chooses "role & priorities" in the market, that might be for example:
 - DSP business has digital initiatives for creating new engagements with customer due to shop reduction, digital assistant, and automation

- DSP enters partner ecosystems with new bundled product initiatives that ask for standardized customer journey approach across the ecosystem partners
 - DSP improves the customer experience (relevant, clear, personalized) across the partners
 - DSP ensures data security and customer data privacy
 - DSP increases employee productivity and partner collaboration
 - DSP optimizes cost with automatically gamified journeys
 - DSP transforms how the company makes money with the gamified journey (on ecosystems).
1. DSP applies data and knowledge to assure gamified journey value to business performance, through:
 - new digital journeys: mobile first, digital assistant and proactive continuous journey
 - ecosystem relationships with partners, and consider one “ecosystem relationship” as more value with reduced administration factor
 - ecosystem success with common customer experience (relevant, clear, personalized)
 - protecting & re-using digital assets across the ecosystem
 - enhancing the employee capabilities across partner ecosystem
 - increasing common asset (marketplace, customer knowledge, brand value) utilization
 - adopting & managing a gamified journey revenue / bonus model
 1. DSP build informed gamified journey sample initiatives, through:
 - creating data objects and (apply) algorithms
 - creating common business rules for ecosystems
 - assuring personalized customer experience, sentiment analysis, continuous journeys across ecosystem
 - creating common business scripts to common business outcomes
 - selecting common business patterns for gamification
 - assuring behavior adaptive security and privacy with automation
 - analytics of intents & common outcome results, collaboration tools
 - dynamic inventories, real-time common risk monitoring
 - dynamic pricing, digital bundled subscription, predictive common journey support
 1. The DSP create digital metrics that support ecosystem gamified journey value, through:
 - revenue, profit margin and cost rate from new digital bundled products
 - assets that create common engagements for ecosystem bundle and value chain optimization
 - revenue/profit rate optimization due to improved customer experience
 - customer effectiveness (life improvement, enjoyment, worry less) increase with common ecosystem journey
 - adoption of digital productivity with self-service tools; analytics utilization

- process (cost) avoidance with gamified journey asset utilization
- digital enabled revenue & bonus ecosystem based on customer journey lifetime value

7. Conclusion

Gamification involves implementing concepts of game-playing in a business process. It is not a new concept but can certainly help DSPs to address the ecosystem business challenge for managing customer and partner experience addressing the challenges of CEM2025.

Logically it can be applied to any existing customer journey. However, simply putting rewards across a journey will not achieve the desired results. When implementing gamification, an organization must clearly identify the business process and customer segments in the gamification scope.

The success of the gamified customer journey hugely relies on striking the right chord with the customer. A deep understanding of customer behavior data is extremely helpful in achieving the desired success. In the ecosystem business model, sharing of customer insight may be a huge challenge as well as having complex regulatory compliance requirements.

The following section provides the SWOT analysis of gamification which will help an organization in taking decisions when implementing the gamified customer engagement.

7.1. SWOT Analysis

7.1.1. Strengths

- Enhanced customer experience

The main focus of gamified interaction is to enhance the customers' experience. This is achieved through use of game with added value of fun/rewards. The more the customer participates, the more customer insight data of is made available thus enabling enterprise to become more customer centric.

- Value for Ecosystem Partners

One of the challenges in the ecosystem business model is to create value for every partner involved. The ability to allow partner to define their own achievements, collectively work with diverse partner of the ecosystem and sharing of revenue based on customer participation will ensure value for each of the partners of the ecosystem.

- Unified customer interaction

From customer experience point of view, unified customer interactions is important. This will also help in reducing the customer interactions and bringing together different product offerings under single gamified offer communication.

7.1.2. Weaknesses

- DSP could be single point of failure for Customer Experience.

Like any centralized ecosystem, centralized implementation of critical functions becomes a bottleneck and cause for overall failure of the system. Here also customer experience is managed through DSP across the partners. Diverse offers are clubbed together hence failure will cause overall failure of complete offered package.

- Lack of standardization

Gamification is a new concept and there is no standard guidelines defined for its implementation. Lack of standard guidelines may result in increased implementation and management cost.

- Regulatory concerns

Privacy and security is one of the major regulatory concerns. Since gamification relies on sharing customer insight between partners of the ecosystem, it is important to handle security and privacy concerns of the customer according to regulatory guidelines of the geographic region.

7.1.3. Opportunities

- Source for revenue through cost savings and new revenue streams

Gamified interaction creates new revenue opportunities as well as helps in cost saving by encouraging customer to use automated services like self-care application etc. The fun/rewards associated with game like setup helps in creating self-motivation force for the customer thus saving resources and cost involved in keeping the customer engaged and motivated.

- Increase service reach for partners

While the primary objective of the gamified interaction is to enhance the customer experience, it also helps partner to increase its service reach to customers. It also creates unique opportunity for partners by bringing together diverse services from multiple partners under single gamified offer.

- Gain customer insights

The more the customer interact through gamified interaction the more event information gets generated. The gathered information eventually helps in getting more customer insights.

7.1.4. Threat

- Data security concern/Breaches

As data volumes increase, data management responsibilities become of paramount concern. The gamified interaction model adds a substantial level of data management to the entire ecosystem. This forces the service provider to continually develop new security mechanisms to mitigate the risk of data theft from cybercriminals. Creating and managing these mechanisms will be a costly component to the role, as the service provider will need to extend its risk management programs and processes to support information confidentiality and availability to include risks from the expanding partner channel. In other words, the gamified interaction implemented in ecosystem business model must always be prepared for unknown entities and attack methods, and be ready to withstand unexpected, high impact breach attempts.

- Failure of Revenue share model results in loss of ROI

One of the underlying benefits of the gamified interaction is the opportunity to gain a strong market position and reap the revenue upside through collaboration of partner's services and offers. However, there is a need to have a very robust revenue share model considering the rewards points earned by customer throughout the gamified journey. Lack of a robust revenue share model may result in overall loss in ROI for the partner or the ecosystem.

8. Next Steps

The document outlines various aspects of gamifications. It identifies the capabilities which are either to be developed from scratch or to be reused, to implement gamified customer journey in standardized way. But the information presented in the document is not detailed enough to clearly outline the technical or platform requirements. Further elaboration and detailed study is required to develop the technical specification for standardized implementation of gamified customer journey. Additionally, this is the first version of the document and there is scope of further enhancement/improvement based on wider community feedback and comments.

As a Next steps the following two actions are identified:

1. Version 2.0: Collect the comment/feedback on the version 1.0. Based on feedback revise the current version.
2. Technical Specification: Perform detailed study to develop Technical specification for standardization of gamification implementation.

9. Terms and Abbreviations Used within this Document

Abbreviation/ Acronym/Term	Abbreviation/ Acronym Spelled Out	Definition	TMF or External Source
CSP	Communication Service Provider		TMF071
DSP	Digital Service Provider		TM Forum
CE2025	Customer Experience 2025	A term used to define the Customer Experience demands by 2025	TM Forum
CEM	Customer Experience Management		TM Forum
IoT	Internet of Things		TMF071
SDN	Software Defined Network		TMF071
NFV	Network Functions Virtualization	Principle of separating network functions from the hardware they run on by using virtual hardware abstraction.	TMF071
CAGR	Compound annual growth rate		External
AI	Artificial Intelligence		
ML	Machine Learning		
DA	Data Analytics		
NBA	Next Best Action	Term used in Customer Journey Management to identify the best action/response to customer.	TM Forum
CEP	Customer Engagement Platform		

Abbreviation/ Acronym/Term	Abbreviation/ Acronym Spelled Out	Definition	TMF or External Source
CRM	Customer Relationship Management		
RACI	Responsible, Accountable, Consulted and Informed		

10. Administrative Appendix

10.1. Document History

10.1.1. Version History

Version Number	Date Modified	Modified by:	Description of changes
1.0.0	02-Oct-2020	Abinash Vishwakarma	Initial document

10.1.2. Release History

Release Status	Date Modified	Modified by:	Description of changes
Pre-production	02-Oct-2020	Abinash Vishwakarma	Initial document

11. Acknowledgements

11.1. TM Forum Members

This document was prepared by the members of the TM Forum Customer Experience Project team:

11.1.1. Whitepaper Lead & Author

Member	Title	Company	Email
Abinash Vishwakarma	Lead business analyst	Netcracker Technology	abinash.vishwakarma@netcracker.com

11.1.2. Whitepaper Main Contributors & Co-Authors

Member	Title	Company	Email
Arnold Buddenberg	Enterprise Business & IT digital transformation Architect	Orange	arnold.buddenberg@orange.com
Shankar Kasturirangan	Managing Principal	Nokia	shankar.kasturirangan@nokia.com
Utpal Mangla	VP and Global Partner – Telecom, Media & Entertainment Industry	IBM Corporation	utpal.mangla@ca.ibm.com
Dharmendra Misra	Industry Consultant	IBM Corporation	dhamisra@in.ibm.com
Shailesh Shrivastava	Program Director Analytics and Governance	Ericsson Inc.	shailesh.shrivastava@ericsson.com
Abhi Sur	Senior Director, Industry Solutions, Communications & Media Industry	Salesforce	asur@salesforce.com
Mathews Thomas	Executive Architect	IBM Corporation	matthom@us.ibm.com

11.1.3. Additional Inputs

Member	Title	Company	Email
Anuroop Awasthi	Industry Principal - CMT	Infosys	anuroop_awasthi@infosys.com
Mabel Castano	Solution Engineer	Salesforce	mcastano@salesforce.com
Derek Chen	AVP	PCCW Global	derek.sw.chen@pccw.com
Antonio Cuadra-Sanchez	Research Project Manager	Indra Sistemas S.A.	acuadra@indra.es
Norihiro Fukumoto	Research Engineer	KDDI Research, Inc.	fukumoto@kddi-research.jp
Manoj Ghag	Architect	Capgemini	manoj.ghag@capgemini.com
Abel Hernandez Rios	Solution Engineer	Salesforce	abel.hernandez@salesforce.com
Jonathan Hopkinson	Consultant	Huawei Technologies Co. Ltd	jonathan.hopkinson@huawei.com
Prashant Joshi	Principal Consultant	Tech Mahindra Limited	prashant.1.joshi@techmahindra.com
Melvin McNamara	Global Head of Innovation for communications industry	Salesforce	mmcnamara@salesforce.com
Paul Morrissey	Chairman	BolgiaTen Limited	pjm@bolgiaten.com
Harish Kumar N	Solution Architect	Excelacom, Inc.	harishkumar.n@excelacom.in
Neetu Singhal	E2E Solution Architect	Nokia	neetu.singhal@nokia.com

11.2. TM Forum Staff

TM Forum	Title	Company	Email
Aaron Richard Earl Boasman-Patel	Vice President, AI and Customer Experience	TM Forum	aboasman@tmforum.org
Jan Lowdon	Agile Project Manager	TM Forum	jlowdon@tmforum.org
Adrienne Walcott	Collaboration Coordinator	TM Forum	awalcott@tmforum.org