# Gamification 2.0 – A Concept

A brief introduction to games followed by a journey through human motivation, behavioural psychology, the concept of flow, ultimately to the realisation of Gamification 1.0 with its structural and content mechanisms. From there this short book promulgates the notion of Gamification 2.0 highlighting the idea of "**Convergence**" with BigData & Analytics to capture real-time information in order to monetize the motivations of game players.
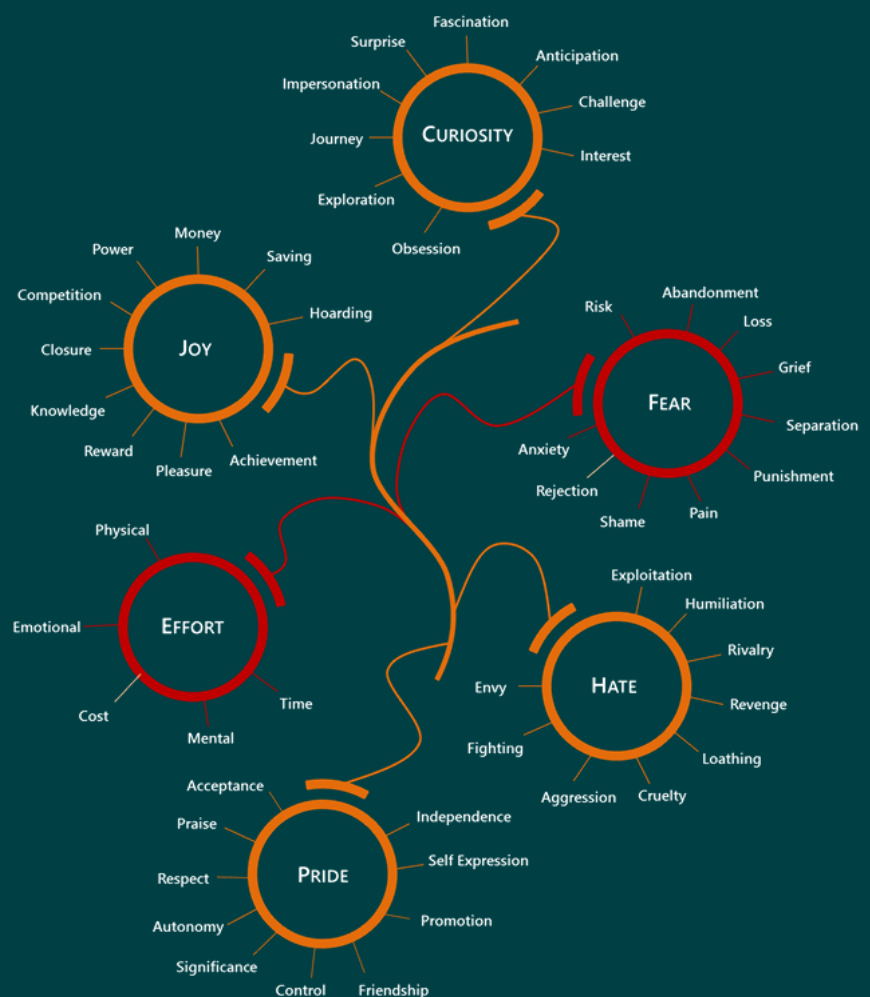
By Eamonn Killian

Dedicated to Jo, Amy, Eryn & Ethan who put up with my near constant hours of studying and writing.

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ABSTRACT

The purpose of this coffee shop read is to attempt to highlight the criticality to our society from the rise of the concept of Gamification as its place as a component of the "**Convergence**" of some amazing technologies (in particular: Cloud, Gaming/MMOG, Gamification and BigData) that is clear to many inside the IT world. I am not a deep technical "guru" I am a businessman that seeks to understand these technologies in order to find a means by which they can be leveraged ultimately for commercial gain.

This short book is the output from my investigation of Gamification and Analytics and is written in lay persons' terms to try to take other business, non-IT, and non-programming literate readers on the journey I took which resulted in a deepening of my understanding of why games and game mechanics have become part of the bedrock for our future exploitation of computer processing as a whole.

In doing so it is hoped this short book has answered some seemingly simple questions during the journey, namely:

  i.   What is Gamification?

  ii.   How does Gamification link to human psychology?

  iii.   Why is Gamification important?

  iv.   How can a business use Gamification 1.0 today? and

  v.   Where is Gamification going, how is it evolving and what could be the ultimate result of its exploitation?

For much more on the **Convergence** of these technologies please review my website:

www.eamonnkillian.com

1. INTRODUCTION TO GAMIFICATION

By our very nature human beings engage in games of all types. We like games. We may not all like the same type or style of game but we as a species like games. Early archaeology has unearthed rudimentary dice as old as 3000BC in the Americas and elegantly carved board game pieces in Turkey from 2900BC, so clearly this penchant for games was alive and well many moons ago. More recently games were used by military tacticians to develop the skills of officer recruits from 1780 onward with Helwig then Von Reisswitz and the introduction of Kreigsspiel in the 19th century. Stepping forward in time, by 1956 businesses and the US Airforce utilised programmes such as Top Management Decision Simulation and the US military started to use a modified version of the computer game Doom in 1998. To this day both are stalwart supporters of the efficacy of computer games and gaming as part of military training. In education by the 1960s the concept of Computer Assisted Instruction (CAI) was coined and this drill and practice approach matured over subsequent decades to become adventure formatted games with titles from Lucas Learning and The Learning Company. Research and revenues point to a decline in the Edutainment industry during the 1990s, perhaps in part due to the word "game" having and continuing to have a negative connotation. Nevertheless this is now to a degree rebounding, not least influenced by the ubiquity of handheld devices and is likely to see significant growth. An introduction to the more recent inculcations of gaming and in particular, from an IT perspective, the rise of the Massively Multiplayer Online Game (MMOG) is provided on the MMOG pages of this website.

1.1   Sources & Further Reading:

Other links to excellent introductions to gamification, gaming and edutainment are:

http://www.news.nationalgeographic.com/news/2010/12/101210-dice-gaming-gambling-native-american-indian-casinos-science/

http://www.hyperallergic.com/80050/archeologists-uncover-5000-year-old-game-board-pieces

http://www.eduquery.com/jaet/JAET4-1_Dondlinger.pdf

http://weisenfeldj.wordpress.com/2011/07/28/marzano-r-j-2010-developing-expert-teachers-in-r-j-marzano-ed-excellence-in-teaching-10th-ed-bloomington-in-solution-tree-press/

http://talpalink.co.uk/resources/games+technologies+for+learning$2C+more+than+just+toys.pdf

http://hypertext.rmit.edu.au/dac/papers/McGonigal.pdf

Marczewski, Andrzej 'Gamification: A Simple Introduction' (eBook available Amazon, iTunes 2013)

Egenfeldt-Nielson, Simon 'Beyond Edutainment: Exploring the Educational Potential of Computer Games' (lulu.com, 2011)

2. SO WHAT IS GAMIFICATION?

The best evidence suggests that the term "gamification" joined our vernacular some time during 2004 but did not become popular as a word to describe the underlying concept until 2010. Clearly this section of the website is aligned to the study and investigation of "gamification" and if you've navigated to this area then there is a high probability that you are also interested in this concept. As one of the four areas of convergence it is contended that this concept is, and will continue, to drive a revolutionary shift in perception for businesspersons, politicians, educators, scholars, researchers, scientists and just about everyone over the coming decade.

In short, it is about harnessing the hugely powerful human emotions and psychological phenomena evidenced in game playing to drive increased engagement, performance and productivity. In length, it is the application of game design, game methodologies, game approaches, and game mechanics to non-game situations for a multiplicity of purposes of, including but not limited to:

- Customer engagement, development and retention

- Employee & student behaviour modification, development and productivity/performance improvement

- Brand building, enhancement, recognition, consistency and loyalty

- Channel & Partner commitment, incentivising and experience enrichment

- Government publicity, outreach and population re-enfranchisement

While the end goals for those who integrate gamification into their technological and operational processes differ, for instance in:

- business terms, the underlying goal is often driven by the need to build longer-term lasting relationships, to achieve 'fanversion' (the conversion of customers into fans and evangelists) thereby achieving higher revenues through a maximised Lifetime Customer Value (LCV); and

- government terms, the goal at a local level is often to build a deeper sense of community, to unify disparate groups through encouraging the more social aspects of technological interaction with the offices of county, state or central government and through this to address significant socially divisive issues, such as democratic deficit and population disillusion

the mechanisms for realisation remain ostensibly the same. Clearly the breadth of audience for how and where gamification can be used is enormous. The core point though is that embarking on a gamification initiative means carefully determining the specific "success measure" and understanding the particular "use cases" which are applicable. From the evidence to date, nothing is surer than if used in the wrong context gamification is far from a panacea and may have unfortunate negative consequences.

2.1 Sources & Further Reading:

http://www.gamification.org/wiki/Gamification

http://articles.latimes.com/2011/oct/19/local/la-me-1019-lopez-disney-20111018

http://www.allvoices.com/contributed-news/15796427-has-gamification-peaked-already

3. A BRIEF INTRODUCTION TO MOTIVATION

It was identified earlier that gamification is about harnessing the hugely powerful human emotions and psychological phenomena evidenced in game playing to drive increased engagement, performance and productivity. At the outset of a gamification programme the question arises as to what are these powerful emotions and why are they significant? This point goes to the heart of the matter and underpins every aspect of the design effort. The greater the emotional involvement elicited in the player the greater the enjoyment factor of the player and, in theory, the greater the outcome for the programme.

This area of research is founded in psychology and in particular in our (as yet nascent) understanding of motivation. There have been many research projects in academia to investigate the underlying motivators of behaviour, whether they are by nature or by nurture, with often surprising and unexpected results:

- starting with the famous William Blake and his 1890 instinct theory which identified a number of physical and mental instincts which by nature are embedded within us from nature;

- then to the drive reduction theory of motivation which sought to link biological 'needs' to behaviour instigators;

- the studies of Kurt Lewin on nature vs. nurture and his famed equation of B=f(P,E), behaviour is a function of the person and their environment;

- the research of B F Skinner who followed on from the work of Edward Thorndike and incentive theory which proposes to explain motivation through the prism of promised outcomes – his famous experiments (1948) with operant conditioning highlighted 'proof' of a kind for some of the incentive based behaviours;

- in parallel though Skinner's experiments though were eclipsed (certainly in psychological circles notoriety, arguably with hindsight in infamy) by those of John Broadus Watson whose famous conditioning of a 9-month old child also yielded behavioural modifications – in this case the inducement of a rat phobia;

- to the almost ubiquitously famous (particularly in business schools) Maslow's Hierarchy of Needs theory, named after its creator Abraham Maslow and presented in a seminal paper in 1943 entitled "A Theory of Human Motivation" and expressed again including curiosity in his 1954 book "Motivation and Personality";

- there are also the lesser renowned experiments of Harry Harlow in the 1940s whose rhesus monkeys appear to have displayed a 'curiosity' motivator rather than any underlying biological or instinctual motivator (i.e. food, sex, etc.) delivered a new term to behavioural psychology – that of intrinsic motivation;
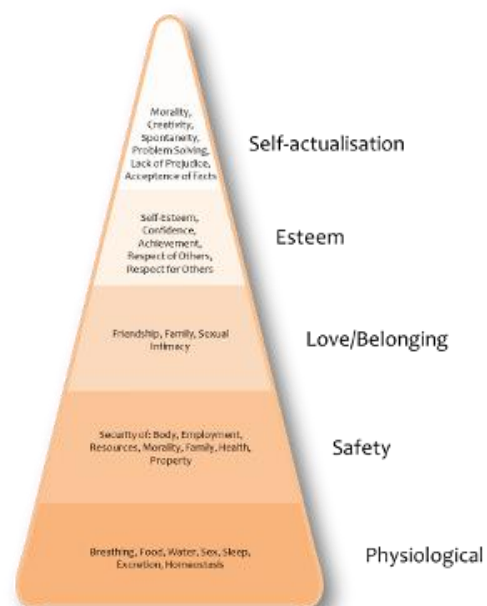
- the interesting behaviour experiments of Stanley Milgram whose experiments on obedience with (pretended) electric shocks delivered under instruction by participating students to those failing to answer queries correctly resulted in a 65% acceptance rate of delivering a notional fatal shock, highlighted to Milgram that it is less the kind of person you are as it is the situation you find yourself in that drives a certain behaviour;

- the studies of Victor Vroom and the Expectancy Theory of motivation which proposes that an individual will decide to behave in a particular way founded on a preference of one behaviour over another on the basis of an expectation of greater gain in the outcome. This is summarised as M=ExIxV (motivation = expectancy x instrumentality x valence);

- to the studies of Edward Deci and Richard Ryan in 1969 whose surprising findings revealed that in certain circumstances extrinsic motivators or outside influencers, for instance monetary rewards, could have negative consequences for motivation and that humans also had an "inherent tendency to seek out novelty and challenges". Their Self-Determination Theory provides a basis of motivation formulated on autonomy, relatedness and competence;

- the chilling, arguably extreme outcomes, from the famous experiments of Philip Zimbardo at Stanford University which laid bare the some astounding insights into both the fragility and nastiness of human behaviours under certain circumstances – often called the "Lucifer Effect"; and

- finally to the work of B F Fogg on creating habits, automating behaviour change and the Motivation Wave which provides a framework approach to understand and influence online behaviours.

This learning (and much more) over many decades delivers insights in the nature of human motivation and its linkage to behaviour. Fostering as much of a grounding as possible in these psychological sciences is critical for both game and gamification designers. At a minimum, designers should be well versed in:

- Intrinsic motivation – refers to a class of motivators that are exhibited through native interest, curiosity or enjoyment of the (in our case) game itself. This type of motivation is extant within the player and does not require recourse to external influences It can be considered a natural motivational tendency within players who will likely engage in gameplay willingly either for its own sake, for learning reasons, for curiosity reasons or for reasons which the player perceives as a benefit to them;

- Extrinsic motivation - refers to the playing of a game in order to achieve or attain an external outcome. This motivation class is externally influenced by money, rewards, badges, grade enhancement, punishments, competition, etc. and can occur in conjunction with intrinsic motivation.


3.1 Bartles Player Types – Brief Overview

It is worth a note in conjunction with motivational instincts mentioning the work of Richard Bartle who examined the players of Multi-user Dungeons (MUDs) a precursor to today's Massively Multi-user Online Games (MMOGs) wrote a paper to answer the seemingly simple question "What do people want out of MUDs?"

Through painstaking research of thousands of bulletin board pages Bartle isolated four main reasons as being typical for those who enjoyed the game: achievement in the game, exploration

of the game space, socializing with others, and imposing upon others. This is visually represented below:
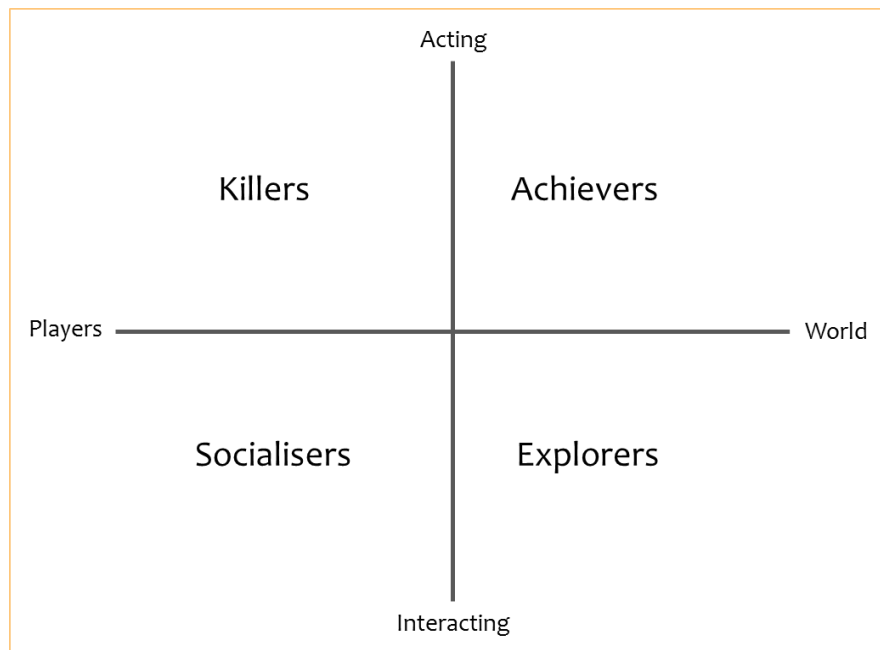
Bartles players highlighted specific motivational criteria, for instance:

- Achievers – played the game with a focus on doing things in the MUD becoming entirely immersed in the games universe. They sought to achieve things and build their own status;

- Socialisers – played the game to interact with other players in the game. Today this is analogous to using the "chat" aspect or "message" aspect in the game. They tend to want to meet with people within the game universe;

- Killers – played the game to carry out acts on other people, to do things to other players, ultimately to kill other players' characters within the game universe;

- Explorers – played the game primarily to explore the space and to be surprised by things within that space. They derived a sense of wonder and amazement from roaming the game universe.

This excellent research paper provides a direct insight into the minds and motivations of players and helps in a gamification sense to highlight that motivations are diverse and numerous, and that "reward" as a concept means entirely different things to different people.


3.2   The Motivation Wave

Another more recent theory on motivation (mentioned above) was provided by DR B F Fogg of Stanford University who posited the notion of a motivation wave. From a gamification perspective this wave provides an insight and a model, formed on the basis of his research at Stanford and with commercial enterprises, for:

i)   Identifying peoples motivation;

ii)   Triggering a change in that motivation; and

iii)   Monitoring progress through motivational change

The model can be visualized as:
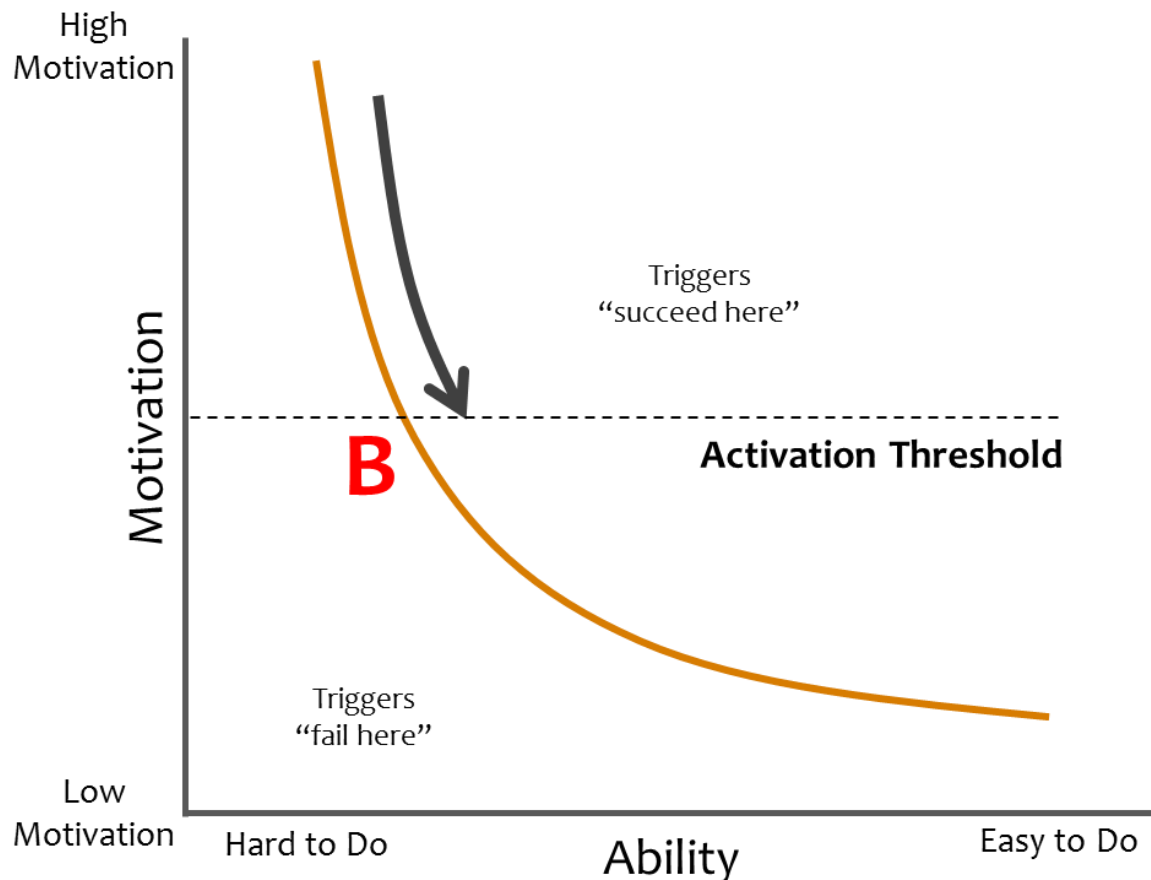
Essentially the Fogg Behavioural Model (FBM) postulates that there is a point "B" for every individual where their motivation is high enough, their ability is sufficient and there is a trigger. At this point for this individual the required Behaviour happens. In this case:

Behaviour = Motivation x Ability x Trigger

3.3   Sources & Further Reading:

http://psychcentral.com/encyclopedia/2008/drive-reduction-theory-of-motivation/

http://prezi.com/9jcqxt2h6cfk/theories-of-motivation/

http://psychology.about.com/od/profilesofmajorthinkers/p/jamesbio.htm

http://psychology.about.com/od/psychologytopics/tp/theories-of-motivation.htm

http://en.wikipedia.org/wiki/Motivation#Incentive_theory

http://en.wikipedia.org/wiki/B._F._Skinner

http://explorable.com/incentive-theory-of-motivation

http://en.wikipedia.org/wiki/Kurt_Lewin

http://en.wikipedia.org/wiki/Expectancy_theory

http://www.selfdeterminationtheory.org/

http://en.wikipedia.org/wiki/Self-determination_theory

http://en.wikipedia.org/wiki/Stanley_Milgram

http://www.youtube.com/watch?v=yr5cjyokVUs

http://www.youtube.com/watch?v=sZwfNs1pqG0

http://www.bjfogg.com/

http://www.mud.co.uk/richard/hcds.htm

http://marczewski.me.uk/2012/12/31/an-interview-with-richard-bartle-about-gamification/

Pink, Daniel 'Drive: The Surprising Truth about What Motivates Us' (Canongate Books, 2011)

Chatfield, Tom 'Fun Inc' (Random House Group, 2010)

4. INTRODUCING THE CONCEPT OF FLOW

The final piece of the motivational jigsaw in understanding the concept of gamification is to understand the notion of flow. In 1990 Mihaly Csikszentmihalyi introduced the world to his theory of 'Flow'. From a gamification perspective this theory helps prospective designers to understand a means for optimising the player experience. So what is flow? Flow is defined by Csikszentmihalyi as those times when you are "being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you're using your skills to the utmost." The theory itself is based on over 20 years of his research into what makes people happy, and at a high level the outcome is akin to when professional sports people talk of their hot hand in basketball, or being in the zone in tennis. What they are describing is certainly very real for them and while yet objective evidence would suggest it is illusory.

The Flow Theory provides for eight bases or components to the flow:

- A challenging activity requiring skill – optimum playing experiences (or broader) occur most frequently within activities that are goal oriented, bounded by rules, require investment or attention and skills;

- A merging of action and awareness – a ubiquitous feature of the research revealed that being in the Flow means awareness of self dissipates and action becomes autonomic, spontaneous and without thought;

- Clear goals – the delineation of goals are required to be clear and known;

- Direct immediate feedback - a recognition or feedback mechanism is also crucial to enjoyment;

- Concentration on the task at hand – Flow exhibits the characteristic of obliviousness to surroundings and situation. Only the focus at hand is distinguishable in the thoughts of the person in flow;

- A sense of control – paradoxically, in light of the above, the sense of control is enhanced in the player and there is no comprehension of losing control of the play;

- A loss of self-consciousness – those in Flow relate an experience absent of self as if only the game exists;

- An altered sense of time – it is commonly recorded that time appears to slow and passes in an unusually decelerated manner.

In addiiton Csikszentmihalyi defined a visual model for when flow occurs:

A Modified Model of Flow
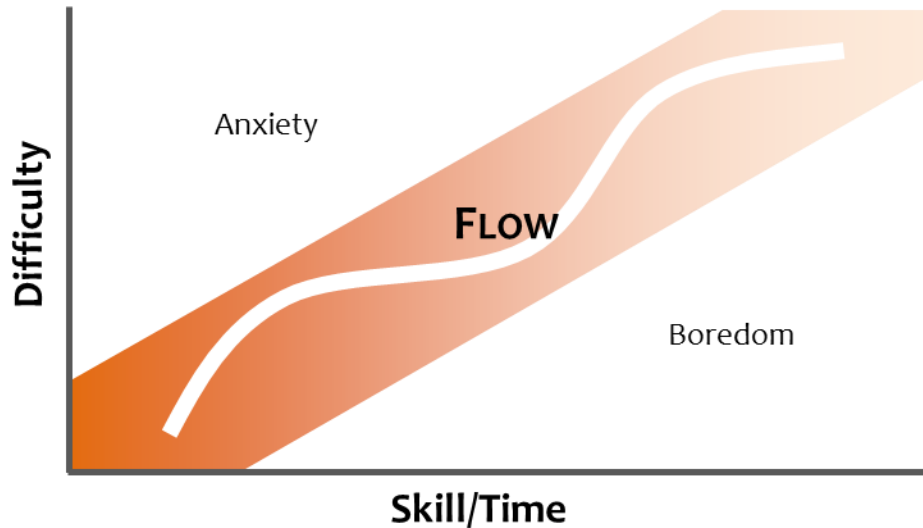
This model has been slightly modified from Csikszentmihalyi's model for the purposes of simplification but does provide an excellent high-level guide for game and gamification designers to develop and test scenarios of game play. For instance, if we design the evolution of player skill within the game and model this in a typical stepwise manner for two gradation plans thus:
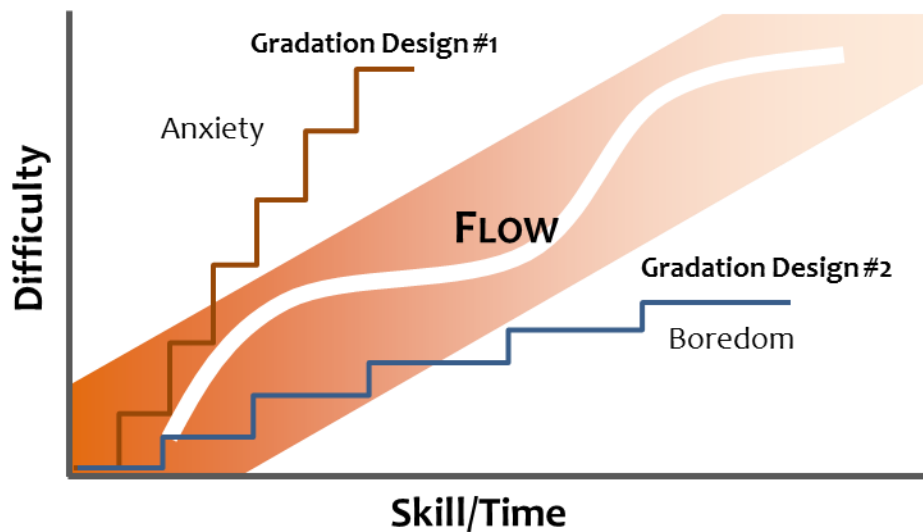
Gradation Model Scenarios
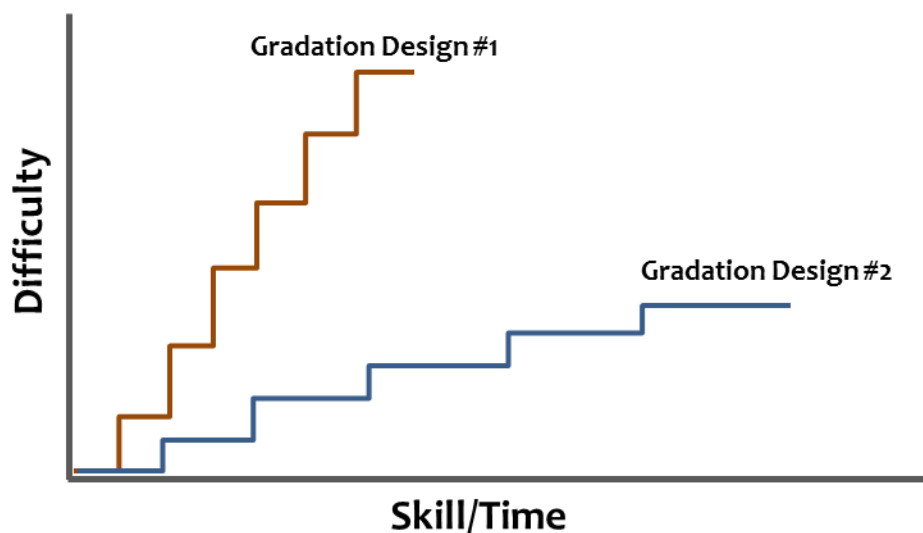
and we overlay this onto a Flow model for the same game we can we can discern that in this instance the game level gradation in Scenario #1 is too step which leads to player frustration and anxiety and that of Scenario #2 is too moderate leading to boredom.

Flow of Gradation Scenarios

The goal of game and gamification designers is to develop the optimal level of difficulties, sufficient to maintain interest, development and excitement without becoming too difficult or too boring. The aim is to develop "Goldilocks" game play or (in the case of gamification) game mechanisms. For further deeper insight into this please see Marczewski's excellent introduction to gamification pages 137 to 155.

4.1   Sources & Further Reading:

http://www.ted.com/talks/mihaly_csikszentmihalyi_on_flow.html

http://psychology.about.com/od/profilesal/p/mihaly-csikszentmihalyi-biography.htm

http://www.slideshare.net/ismaniyar/bbva-innovation-edge-gamification

http://psych.cornell.edu/sites/default/files/Gilo.Vallone.Tversky.pdf

Csikszentmihalyi, Mihaly 'Flow: The Psychology of Optimal Experience' (Harper and Row, 1990)

5. GAMIFICATION 1.0

In a sense gamification is not new, since (albeit in a rudimentary form) the turn of the century commercial organisations have realised the intrinsic value of loyalty programs (Sweet Home Laundry in the 1800s), frequent flyer miles (United Airlines 1972), cereal box toys (Kellogs 1090), baseball player cards (Peck & Snyder 1868), employee-of-the-month schemes, and many more inculcations. The rise of the Internet and computing has ushered in a modern twist and enabled new cleverer and more appealing, models and structures to be invented with companies such as Bunchball, Foursquare, Badgeville and Gamification Co. leading the charge.

These new models are exemplified by the story of Foursquare which provided a simple mechanism for mobile users to "check-in" or post their location into a mobile application in return for points or rewards. The hook created is the more "check-ins", the more points, the more points the higher gradation to "Mayor" status with associated "Badges". By integrating with Facebook and Twitter this generated fervour for badge acquisition and status graduation. This was a highly successful example of gamification and provided huge stimulus and invigoration for gamification around the globe. In parallel probably the best known traditional gamification schemes in the UK is that of the Tesco Clubcard which was introduced in 1995 which awards points for purchases. There are thousands of such schemes around the world where members can effectively gain discounts off future purchases by continuous fealty to the issuer. Another example would be that of In-Game Points or statuses awarded in online games, mobile apps or MMOGs which enable the player to purchase additional capabilities or objects with this virtual currency.

All of these contrivances exhibit the use of game mechanics as part of their underpinnings. They are very simple to spot in video games but the mechanisms exist in loyalty cards too. In the most simple of terms provided by Marczewski (Page 128) "a distinct set of rules that dictate the outcome of interactions within the system. They have input, a process and an output" with the player or customer or user responding to collections of these mechanisms. The main aspect of commonality for them all though, irrespective of the real world or virtual mechanisms employed, is that of incentive for the purveyor. Their incentive is to positively effect Lifetime Customer Value(LCV) to achieve higher average revenues per customer, user, player, etc. They do this and are doing this by converging two major concepts:

1) Gamification "for the hook"
2) BigData Analytics "for the analysis and improvement"

Before computers it wasn't physically possible to understand the patterns of user, customer or player behaviour in the way we can now. Indeed, even today we are merely at the edge of the abyss of data that can now be churned to truly understand behaviours. Gamification 1.0 for those employing it has been about harnessing, acquisition and rudimentary analysis (it is noted that this analysis is far better refined than in the 1960s, 70s, 80s, 90s and 00s and improving fast – but it pales into insignificance under the weight of "Exascale" analysis) to try to better align sales messages through:

- Customer trend analysis
- Targeted (even individual) incentive communications
- Improved negotiation basis
- Product placement
- Brand enhancement
- Site (physical and virtual) location

- Seasonality awareness and supply chain optimisation

- Revenue growth strategy development

and many more (see section "5.2 Game Analysis" below). There are detractors to the gamification promise and recent reports it must be acknowledged have pointed to its demise on the basis that the current inculcation has a skew focus towards extrinsic motivations. In this regard Gamification 1.0 has been and could be referred to as "competition-isation" and on the whole, for many early implementations, this would not be a wholly unfair comment. That noted, this was Gamification 1.0 where early use cases and conceptualisations were implemented exhibited all the trademarks of something new with the usual mix of technological and operational teething pains abounding. Every concept matures and gamification is no different. The gamification market is now growing fast and is estimated to achieve a global revenue of $2.8 Billion by 2016, almost doubling now on an annual basis:

Global Gamification Market Growth Projection
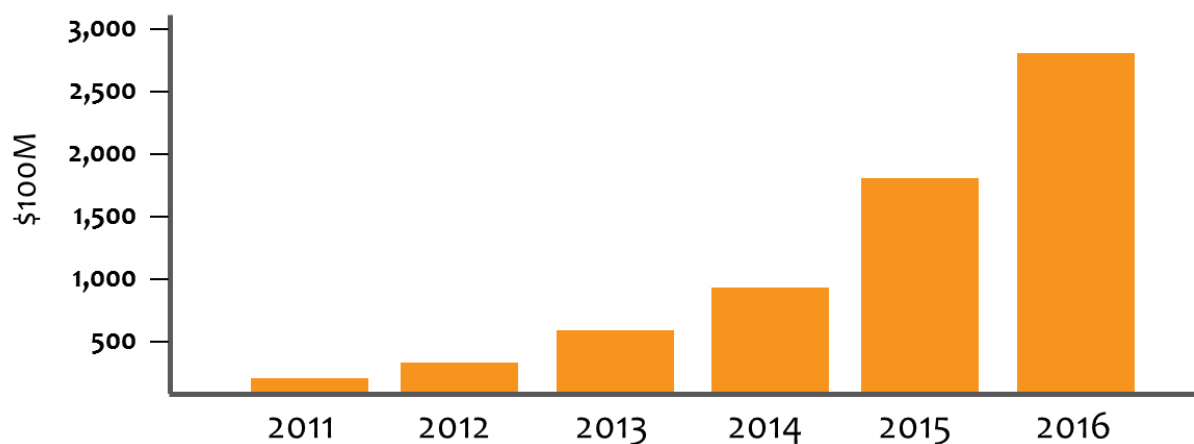
5.1   Structural & Content Gamification

A couple of final areas of definition require coverage before moving forward to an outline of Gamification 2.0. The first of these is the necessity to understand the nuances of structural and content driven gamification based on the work of Kapp et al. These definitions help when designers are making decisions on the type of game mechanisms to deploy and employ within the game construct.

Structural gamification can be viewed as the deployment around the game space of game mechanisms which can create player momentum but which do not directly change the content of the game itself. On the other hand content gamification involves the deployment within the game space of game mechanisms, game components and game strategies which requires a change (sometimes a comprehensive rethink or redesign) of the game itself.

Structural Gamification Element	Description	Mechanism for Deployment
Goals	Clearly articulated and transparent presentment of the desired goal or outcome of the game to the customer,	Clearly displayed and described:

Structural Gamification Element	Description	Mechanism for Deployment
	player or user. The obvious example in educational or simulation games is the achievement of the certification, examination or other objective measurement of success. In MMOGs or video games this is often the "end point" or "final quest" and in real world scenarios this can be the accumulation of sufficient "points" to acquire a free flight (air miles) or stay in a particular hotel (hotel reward points). There can be sub-goals or incremental achievements, often evidenced as mini-tests or attainments of particular items within the game space which help structurally to propel or incentivise the customer, player or user momentum.	1) Rules, including conduct expectations, appeals mechanism, support contacts, legal and HR requirements, etc. 2) Tutorials and helpful notes 3) Frequently Asked Questions (FAQs) 4) Helpful hints on expected time per level or progression step 5) Helpful hints on paths and approach
Progression	To maintain momentum, interest and motivation the technique or mechanism of progression is employed to highlight to the customer, player or user their specific position in terms of progression to the end goal. This is usually provided as a level indicator or a visual stimulus bar which makes clear the completion status, for instance 33%, or 3/10, noting a promotion to Professional from Amateur.	Clearly displayed and described: 1) Rewards 2) Rewards Schedules 3) Bonuses 4) Points 5) Badges 6) Levels 7) Currencies 8) Leader board 9) Rankings 10) Status 11) Countdowns 12) Discovery quests 13) Cascaded information
Challenge	The game itself and the design of the progression should stimulate but should also challenge. Customers, players or users will not "value" the achievement if it was far too simple and easy. The design of the structure, path,	Clearly displayed and described: 1) Status 2) Ranking

Structural Gamification Element	Description	Mechanism for Deployment
	progression and associated levels should be sufficient to lead to the end goal but not too simple as to generate the boredom we reviewed as part of "flow above.	3) Position on leader board 4) Social media tie-ins (Facebook, Twitter, etc.)
Transparency	Of significant importance in social or casual games the notion is to make clear to all players the progression of others through the game as this stimulates rivalry perhaps even envy and drives performance. A note of caution though – in workplace training it may not be appropriate to be as transparent with the scores of colleagues as in the casual games environment. It also relates (as identified above) to being absolutely open and clear about how points, rewards, levels etc. are earned.	Clearly displayed and described: 1) Status 2) Ranking 3) Position on leader board 4) Social media tie-ins (Facebook, Twitter, etc.)
Status	The Facebook generation is very status oriented and social media linkages are expounded well in many gamification implementations (see Foursquare above). It is often the case that "bragging rights" can help motivate and propel performance within many groups or communities. In this regard the acquisition of badges or mini-awards, certifications, etc. and their posting publicly is denoted as a status mechanism.	Clearly displayed and described: 1) Status 2) Ranking 3) Position on leader board 4) Social media tie-ins (Facebook, Twitter, etc.)
Time	The use of time needs to be given deep consideration. The key is to maintain interest and momentum without producing a feeling of immediacy to completion – the idea in the customer, player or user of just "getting it out of the way" or "getting it over with". Good gamification (especially if being developed within a business training context) uses time to show a consistency of approach to the specific audience with a modular release of content over an expected term. In open "infinite space" style MMOG or	Clearly displayed and described: 1) Modules 2) Helpful hints on expected time per level or progression step 3) Helpful hints on paths and approach

Structural Gamification Element	Description	Mechanism for Deployment
	videogames, and with casual games, this is less of a consideration as players will play for as long as it takes to achieve the incremental or final goal. In these situations time is also a key consideration for designers. The key then is to make the progression (in time terms) sufficient to retain interest without inhibiting progress to the point of wash out or quitting.	
Feedback	Designs need to incorporate clear feedback to the customer, player or user. This feedback should be direct and if feasible real-time. In education or simulation games this is an absolute from the point of view of directing corrective actions or re-examinations as part of progression. Often mini-tests or quests or trials are configured to highlight the score during the activity so the customer, player or user can make the necessary corrections during the activity. This greatly reduces the annoyance factor related to completion and then receiving a fail grade or score.	Clearly displayed and described: 1) Status 2) Ranking 3) Position on leader board 4) Helpful hints 5) Follow up communications 6) Attempts remaining

Content Gamification Element	Description	Mechanism for Deployment
Story	Clearly articulated storyline for the game. This is critical to attaining interest in the first place before the customer, player or user even commits to becoming part of the game. Story-telling is an ancient tradition and a "good yarn" is much more memorable than a set of factual dates, times, locations etc. Many memory guru's outline the benefits of using visualisation and association to help perform incredible feats of memory. Clearly in MMOG or videogames the storyline can be an incredible quest,	Clearly displayed and described: 1) Overall storyline 2) Module storyline 3) Task, quest, trial, etc. storyline 4) Epic meaning storyline 5) Community collaboration storyline

Content Gamification Element	Description	Mechanism for Deployment
	space adventure, war, etc. but employee training purposes or classroom gamification much more imagination must be put into abstracting the areas to learn and forming them into a cohesive and compelling story which can then be broken down into the specific game mechanisms.	
Curiosity	The ability to derive and engender curiosity is used well within MMOG and videogames. Presenting decision junctures for customers, players and users where they can choose to "fight or flight", or chose to roam and explore the game space is critical.	1) Decision junctures/choices 2) Infinite spaces 3) Alternate paths 4) Discovery quests
Challenge	A core element of engaging the customer, player or user. Presenting the problem or task or battle in a manner that engages from the outset. Make clear the challenge ahead and the goals to achieve in response to the challenge. Challenges can also be used to foster collaboration with certain tasks better achieved with others, perhaps only feasible as a group or team.	1) Challenge storyline 2) Objectives 3) Rewards, bonuses, currencies, etc. 4) Level 5) Virality i.e. team collaborative tasks
Characterisation	Many companies have realised (both real world and virtual) the sticky nature of being able to customise their character or card. Having an American Express Black is a symbol of wealth and status, equally having the right sword or shield or weapon. Many of these can be rewards for tasks but also capable of purchase with the game currency. Note: The ability to customise is also a fundamental element of monetisation.	1) In game stores 2) Custom loyalty cards 3) Rewards choices
Freedom to Fail	No one likes to fail but failing in a game situation when you can instantly retake or retry the module, quest, trial, etc. is easier for a customer, player or users to stomach. In this way the content should be configured and structured in a	1) Well described 2) Retries 3) Re-takes 4) Death

Content Gamification Element	Description	Mechanism for Deployment
	fashion that leverages the innate ability in games to "have another go". In many ways tracking the failure attempts is an excellent gauge as to the engagement effectiveness of the game.	5) Save junctures or points
Interaction	This fundamentally differentiates games from rote learning, research or study. Content gamification delivers the customer, player or user with the ability to "do things". This in and of itself generates a degree of curiosity but also nurtures a feeling of empowerment and independence.	1) Character movement 2) A game space 3) Quizzes, tests, etc. 4) Quests, trials, etc. 5) Simulations 6) Behavioural momentum 7) Countdowns 8) Dexterity challenges

5.2   Game Analytics

The final aspect of Gamification 1.0 to understand is that of game analytics and in particular the business intelligence aspects of game analysis. The analysis of customers, players and users in Gamification 1.0 is often deployed in an ad-hoc fashion and while the various functional owners' involved (game designers, Sales, marketing, human resources, operations, IT, service providers, and no doubt many more) employ specific point capabilities they rarely integrate to the degree necessary to evolve a total view of the customer lifecycle. There are several good reasons for this; the level of IT integration involved, the newness or novelty of gamification itself, the required processing capability, and the real-time requirement of that capability; and several bad reasons the speed to market takes precedence, the need to have something, the lack of a single point of ownership and the silo nature of development. Nevertheless a significant evolution in capability to derive the necessary underlying data is being developed in the domain of game analysis, particularly in MMOG, online and videogames which casts a light forwards to what will be feasible in Gamification 2.0. This section will focus on those advancements for two reasons:

1) To outline at a high level what can be delivered today within the confines of Gamification 1.0; and

2) To provide a primer for the description of Gamification 2.0 and what we can expect to see being delivered in the near future (18 to 24 months)
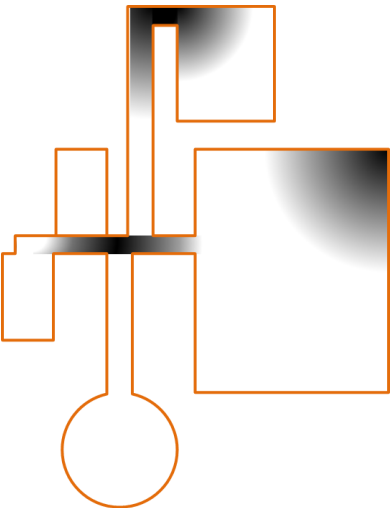
Notwithstanding the tremendous efforts, incredible innovations and dedication of many information technology professionals and data scientists it would be a fair assessment of the field of game analytics today (2013) to say it is a nascent and emergent technology or competence. Its origins were determined by game design necessity and the need by designers to understand game interaction which would enable better prototyping and feature/function testing.

Without getting bogged down into the vortex of computer science and programming specifics (which is far beyond this authors abilities) this need evolved very early on into areas such as
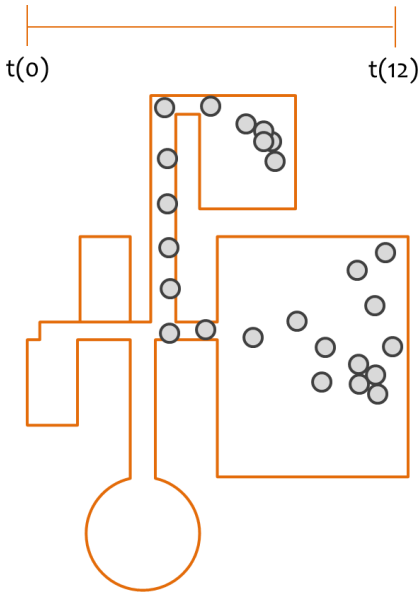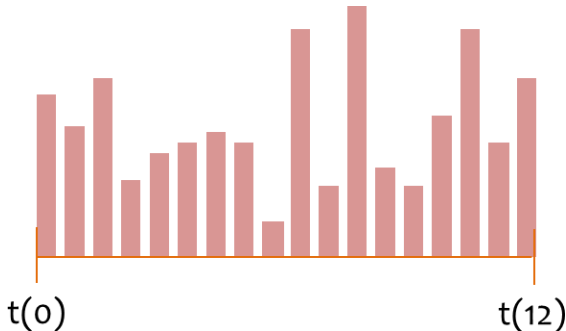
game telemetry which reports in game data over a distance, state machine logging services which track state data of the characters (system response, actions, etc), player data stores which hold metrics concerning the progress (achievements, levels, etc.), player characteristics data stores which hold characteristics on the avatars themselves (hair, dress, etc.), objects data stores which hold attributes of game objects (places, NPCs, descriptions, etc.), and even affinity data stores which hold records of "like" or "common" items (behaviours, objects, choices, etc.). This game specific data is supplemented by data coming in from and being gather for transmission to innumerable other sources/receivers, for instance profile data from social media networks (Facebook, Twitter), micro-transaction data from in-game purchases, advertising tie-ins for in-game adverts, payment system integration to accept payments, actual geo-location data, CRM integration and data feeds, and even psychographic IAO (interest, activity, opinion) variables data.

This data can then be fed into different Extraction, Transformation and Loading (ETL) processes which decant data into online analytic processing (OLAP) systems for the critical process of analysis. The analysis is where the 'magic' happens, where the raw data can be used by new processes which transform it into useable information of various forms. Business Intelligence (BI) processes takeover at this point and are used by the game provider, the service provider and others to gain commercially advantageous answers from patterns within the data. An introduction to BigData and analytics is covered in more detail on those pages of www.eamonnkillian.com The following table provides examples of specific game analytics areas:
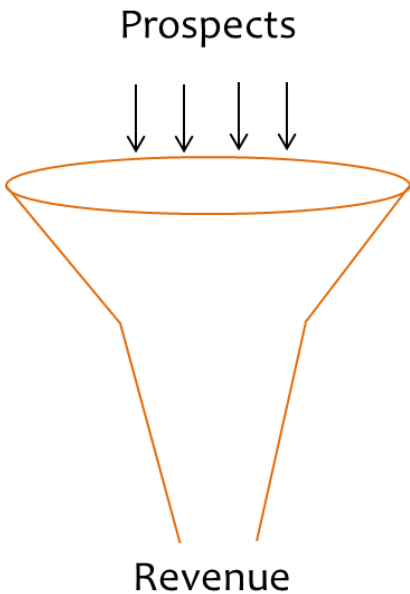
Analytics Visual Representation	Analytics Description
	Heatmaps are an excellent way of analysing where game play has taken place. Different types of heatmaps can be produced to identify: ▪ Player density maps ▪ Kill maps ▪ Balance maps ▪ Performance maps ▪ Purchase maps ▪ Quit maps ▪ And many more …
	Financial Analysis of many key dimensions of the customer, player or user are produced: ▪ Monthly average users (MAU) ▪ Daily average users (DAU) ▪ Average revenue per user (ARPU) ▪ Average Revenue Per Paying User (ARPPU) ▪ User acquisition cost (UAC)

Analytics Visual Representation	Analytics Description
	▪ Lifetime Value (LTV) ▪ Conversion Rate (CVR) ▪ Entry Event Distribution (EED) ▪ And many more …
t(0) t(12) 	**Spatiotemporal Maps** for analysing the positions and movements over-time in the game space. Track and follow the movements of individual or groups of customers, players and users during their period in the game: ▪ How do people play the game? ▪ How do the travel within the game space? ▪ How do they move in 3D space? ▪ Do players congregate or cluster together anywhere? ▪ Do they fully exploit the game space? ▪ Are there bugs? ▪ Are there exploitation spots? ▪ Are there outliers?
 t(0) t(12)	**Time Series Analysis** helps to understand temporal changes over bounded periods in: ▪ Play behaviour ▪ Resource choices ▪ Usage (MAU/DAU) ▪ Performance ▪ Achievements ▪ Resources used

Analytics Visual Representation	Analytics Description
Prospects Revenue	**Funnel Analysis** is used to help determine the average path to revenue cycle for customers, players, and users. This provides an ability to quantify the number of players through the trajectory of awareness of the product (visits), through interest (are they registering), to desire (actual activation and use), to action (real revenues from in-game or subscription fees), for instance: ▪ Visits per hour, day, week ▪ Registrations ▪ Activations ▪ First purchase

Other types of analysis and information visualisation techniques that can be carried out using this data are:

▪ **Affinity Analytics** – do items, challenges or actions naturally cluster together?

▪ **Progression Analytics** – are players performing and progressing according to expectations?

▪ **Prediction Analytics** – anticipating the actions of a player in the future?

▪ **Optimisation Analytics** – optimize operational delivery aspects – minimise cost; maximise revenues

▪ **Decision Support Systems** – make better decisions on marketing mix, channel partners, etc; and

▪ Many more.

In conclusion, there are two key points here:

1) Firstly it is clear from the foregoing that there are innumerable forms of analytics carried out in Gamification 1.0 today. However, they are often siloed in approach, focused on specific areas to answer specific questions, and using specific types or purpose built underlying source data warehouses. (Please note: the following example provided is admittedly entirely simplistic and purposely exaggerated to illustrate the point) This leads to a situation today where marketing could have what they believe to be a 360o degree picture of the customer or user based primarily on micro-transactional data, Click Through Rates (CTR) to external advertisements, and metrics such as user timings with some external supporting information from social media which predicts a further yield of X%, but the customer drops out entirely the next day. If there had been a more holistic view of the customer incorporating (a hit/miss ratio of 1/10, weapons used = stock initial

weapon) then it is likely that the predictive analysis would have yielded a warning flag as to the potential "walk away" of the customer due to their lack of knowledge on how to change weapons. Perhaps some behavioural factors such as inability to move beyond the starting compound was available which again would highlight a lack of knowledge of the game and that even though the user had bought more weapons and a comprehensive map they still dropped out possible due to frustration; and

2) While many of the "outcome" visualisations and informational reports provide an ability to impute, presuppose or predict the motivations of the customer, player or user they are very rarely (if ever) designed specifically from a starting point of motivation. This paper purposefully began with motivation to highlight specifically the anticipated metamorphosis in almost every facet of our lives over the next two decades due to the incredible abilities of BigData and analytics, not least in gamification where designing, architecting and delivering the underlying technologies and operational constructs for game providers will in the near future begin with a much deeper vision of the desired motivations to elicit in the target segment or audience.

5.3   Sources & Further Reading

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6. GAMIFICATION 2.0 – A CONCEPT

To understand what is about to happen in our universe designers need to build a framework for understanding (or at least attempting to understand) a number of the core tenets of motivation in order to construct game mechanisms that can augment, heighten, manipulate or otherwise externally influence those facets in pursuit of yield generation. This is no mean feat and hitherto without the availability of Exascale (and beyond) computing power required to perform BigData and Analytics could not be achieved in the timeframe required to 'pique' the desired action. In this regard, "Gamification 2.0" will require more innovation in BigData before it is even feasible. For more information on BigData please refer to those pages on this website and the external research links provided.

From a Gamification 2.0 perspective the framework provided here is a mere trivia and is presented to help those new to gamification and gaming to understand how behavior, motivation and computer science are merging. It is also trivia compared to where BigData can take us in the future and is suggested merely as a starting point for layman discourse rather than an all-consuming theory. It is also important to note at the outset that this framework is not offered as a theory of motivation or ascribable to any of the rigorously and scientifically tested theories and that its development is motivated by commercial reality rather than any altruistic goal. Its purpose is to portray a conceptual means to readers by which designers are better harnessing the core motivations of human beings coupled with the necessary information technology building blocks to optimise the experiential interactions of customers, players and users in pursuit of greater yields. Conceptually there is little doubt that Gamification 2.0 will be about individualisation, hyper-customisation, real-time analytics, order of magnitude enhancements in predictive, behavioural and decision support algorithms, and massive scale surveillance, storage and usage of data to derive information far beyond what we see today. For instance Rajat Taneja (CTO of Electronic Arts) revealed that 50TB of structured data is delivered from gamers today through in-game metrics. This will be comprehensively eclipsed in Gamification 2.0 where innumerable external sources of unstructured data will be added to the in-game metrics and both tracked to deliver a far broader view of the motivations and desires of customers, players and users.

To build a conceptual Gamification 2.0 framework two base premises require a finer-grained definition:

1) A reduction and isolation of the number of determinants of motivation to a manageable size; and

2) A consistent measurement scale across each of the determinants of #1

Notwithstanding the age old tenet that we know whatever choices we make for #1 and #2 above will (over time) prove to be wrong and are insufficient or lacking in some dimension, a stake must be put in the ground in order to drive forward in a coherent manner.

With that as a basis, this Conceptual Gamification 2.0 Framework can be visualised as:
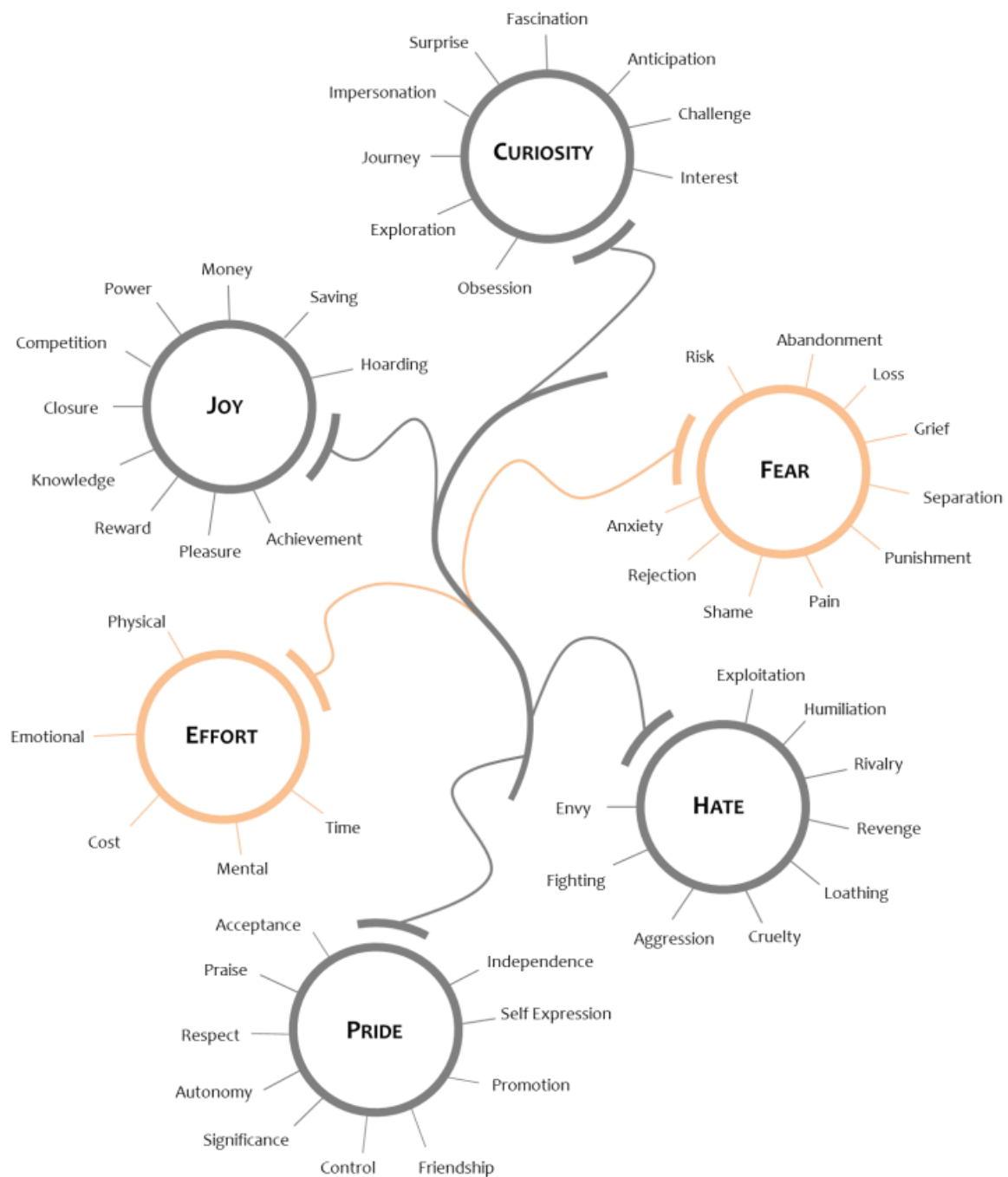
As can be seen this conceptual model proposes to reduce the "primary" determinants of data collection to six core areas, each of which then has a number of "secondary" motivational characteristics. For this particular framework those primary determinants are:

- Positive Factors:
  - Curiosity
  - Joy

- Pride
  - Hate
- Negative Factors:
  - Effort
  - Fear
- Voluntariness

Each of the secondary components is broken down in the table below with a high-level description of how each is mechanized in Gamification 1.0 (if at all) and how they could be tracked and mechanized in Gamification 2.0. The aim of the table is to present and to clarify in sufficient detail the core areas of focus for the concept and collaterally to aid those setting out on a gamification design initiative to understand how beginning with human motivational elements can help with the derivation of a gamification initiative.

6.1   Curiosity

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
Curiosity	**Fascination** – often cited and experienced as a powerful means of persuading or influencing the behaviour of the target audience (customers, players, users). Closely linked to trust, belief and respect addressing this component can help with engagement, captivation for a term and retention.	Low level aspect generally non-integrated to audience history with pre-set presentment through universal: 1) Visuals & sound stimuli 2) "Storyline" 3) "Game-spaces" 4) Primitive CRM technology integration Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	Improved aspect with integration between a hugely expanded audience/historical play or CRM databases and real-time analytics (predictive modelling and in-game decision support systems) utilising historical engagement & play patterns to deliver effective predictive and customised experiential play within the game space: 1) Extensive customisable 3D visuals 2) Extensive customisable sound stimuli 3) Individual storyline capability 4) Infinite game-space with 'on-the-fly' linkages to alternate storylines or extension simulations 5) Enhanced AI based NPC presentment for delivery of individualised messaging and randomised questing based on previous engagement history 6) In real world scenarios the extended use of and delivery of special "closed sales", "secret club events", "the private sale" or "exclusive sale event", etc. Measurement Metrics: Real-time tracking & historic record of: • Screen/character movement interaction

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			(if feasible even mouse interactions) • Click rates effective Click Through Rate (eCTR), Cost Per Click (eCPC), Cost Per Mile (eCPM), etc. • Flow metric • Days/Months Active Use (DAU & MAU) • Lifetime Network Value (LTNV) • Entry Event Distribution (EED) • Exit Event Distribution (XED) • Revenues In App Purchases (IAP), Average Revenue Per User (ARPU), Average Revenue Per Paying User (ARPPU), etc • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Social Media Postings & Content as Outbound Messages Rate (OMR) • Completion rates • Items usage rates
	Surprise – the ability to change the frame of reference of the audience in an unexpected or seemingly random manner leads to surprise. This is closely linked to the generation of humour,	When exhibited this tends to be: 1) Static but randomised reward oriented "bonuses" or "points" 2) A "Free Lunch" 3) A "Lottery" win	The increased capability to trace each audience members' characteristics such as historical: Knowledge, Interest, Journey, Exploration, Challenges, Quests, Rivalries, etc. enables a customised progression algorithm to integrate

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	fun and a sense of freshness.	4) An "Epic Meaning" challenge 5) CRM technology integration 6) Data warehousing systems 7) Data cleansing systems 8) Middleware implementations Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	random new components, into the game space directed at known areas of interest of the audience members. This generates surprise through: 1) Novelty quests in entirely new game spaces – externalised from the existing space where the audience character aspect transitions beyond the boundaries of the existing space 2) Discovery challenges beyond expected boundaries – as above 3) Randomised Praise 4) Out of the blue "Big Boss" link – an externalised link to real-time chat, audio/video conference to a briefed Senior Director of the company 5) In real-world the out-of-the-blue special invitation to an event 6) An invitation to be a special "card" holder – usually denoted another colour of card Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction (if feasible even mouse interactions) • eCTR, eCPC, eCPM, etc.

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • External space friend relationships & virality
	Anticipation – creating a sense of anticipation leads to far greater attention in the audience. The ability to create a scene, a storyline that engages and portrays sufficient nuggets of information to maintain that attention means a decomposition of the messages and (often) altering their flow to generate an aura of mystery.	When exhibited this tends to be: 1) Introduction of new storyline 2) Staggered build ups with "Cascading Information" 3) Sometimes using "Countdowns" as part of challenges (see below) 4) CRM technology integration 5) Data warehousing systems 6) Data cleansing systems 7) Middleware implementations Measurement Metrics: Not generally measured or tracked as a specific quantity or	A step change in capability introduces the ability to vastly expand storylines and to both customise and randomise those storylines in real-time for audience members based on their choices, actions, movements and explorations. This will generate anticipation through: 1) Random "Who dunnit?" type challenges 2) Customised "mysteries" in a known tangential area of the audience members interest 3) AI NPC use to present a puzzling situation

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		set of quantities.	4) In the real world mechanisms such as staggered "teaser" letters or emails providing scant information but aimed at a progressive build up 5) Other real world notions are "secret sale" exclusive appointment times Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction (if feasible even mouse interactions) • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Challenge/mystery outcomes
	Challenge – commonly used with audiences already, the notion is based on the premise	Extensively used with audiences provided through fixed pathways with challenges en-route through the game space:	Implementation of challenges will remain a significant element of Gamification 2.0. The

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	of building from small universally achievable challenges and to increment those upwards over the term of use to lock in the target audience into a game-like experience.	1) Introduction of new storyline 2) Staggered build ups with "Cascading Information" 3) "Quests", "Trials" & suchlike 4) CRM technology integration 5) Data warehousing systems 6) Data cleansing systems 7) Middleware implementations Measurement Metrics: Real-time tracking through: ▪ "Badges" ▪ "Virtual currencies" ▪ "Bonuses" ▪ "Combo's" ▪ "Progression Levels" ▪ "Promotions" ▪ "Points" ▪ "Direct Feedback"	advancement will come through an ability to customise those challenges to the specific audience and even down to the individual audience member in both real and virtual worlds. With greatly increased processing power analytics inputs specifically designed decision support, time series modelling, alternative modularised storylines and expanded historical usage reference information the capability will exist to: • Customize challenges • Randomise challenges • Tangential-ise storylines • Externalise challenges incorporating other previously unknown game spaces • Stagger build ups at a customised pace that can change in real-time • Offered choices of customised challenges Measurement Metrics: Real-time tracking & historic record of: • "Badges" • "Virtual currencies" • "Bonuses" • "Combo's"

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• "Progression Levels" • "Promotions" • "Points" • "Direct Feedback" • Response time to stimuli • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Challenge outcomes • Challenge choices
	Interest – each individual has an in-built interest quotient, commonly in areas well beyond the scope of the messages the gamifier wants to portray. Tapping those interests and	When considered this tends to be: 1) Reliant on a newer/augmented storyline 2) Staggered build ups with "Cascading Information"	Very similar to the implementation of challenges above. This will become a core focus of the analytics and BigData component of Gamification 2.0. The advancements that will come from the greatly increased processing,

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	using BigData to create linkages to your messages will become core to maintaining interest and engagement. This is a core facet of personalisation of presentment.	3) CRM technology integration 4) Data warehousing systems 5) Data cleansing systems 6) Middleware implementations Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities. If measured some evidence could be extracted from "pop up" or mailed feedback surveys which tend to the mechanism employed.	analytics, algorithms, and BigData inputs will enable almost infinite customisation in real-time during play based on the choices and directions taken of the audience member. Fixed and rigid step-by-step progression will end and "Behavioural Momentum" broken resulting in a more flexible engaging experience provided through: 1) Customized and individualised challenges, quests, combo's 2) Randomised progressions 3) Tangential-ised storylines 4) Externalised challenges incorporating other previously unknown game spaces 5) Staggered build ups at a customised pace that can change in real-time 6) Offered choices of customised challenges Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			- DAU, MAU, LTNV, EED, XED - IAP, ARPU, ARPPU, etc. - New space exploration - Time spent & places within the space - Momentum - Degree of NPC engagement - Message Conversion Rates - Tweets, Posts, Blogs & Content as OMR - Completion rates - Items usage rates - Challenge outcomes - Challenge choices - Extra-game activities - Social interactions - Knowledge acquisition beyond set tasks
	Obsession – the ultimate goal of many game producers is to create obsessiveness in the audience, in revenue terms 5% of players accounting for 68% of revenues. The same behaviour in the real world accounts for the rise of 'fan-stomers' – customers who behave in an evangelist type role for their favoured products.	Well understood as an outcome factor within MMOG, console, online and mobile game environment. In terms of input variables with design criteria and game mechanics this tends to be: 1) Reliant on storyline 2) "Achievements" 3) "Community collaboration" 4) "Epic Meaning" trials or quests 5) "Infinite gameplay" 6) CRM technology integration 7) Data warehousing systems	The capability will exist to trace each audience members' in-game activities over a term to identify early their usage and trending patterns. Algorithms will examine in real-time the nature and intensity of play and highlight potential "obsessives" early in their in-game career/journey. This can then enable even more effective tuning of the experience to enhance and motivate their play. As with above a customised progression algorithm to integrate random new components; chosen specifically to

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		8) Data cleansing systems 9) Middleware implementations Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities. If measured some evidence could be extracted from "pop up" or mailed feedback surveys which tend to the mechanism employed.	excite the audience member; into the game space directed at known areas of interest of the audience member. This buttresses their obsession through: 1) Novelty quests in entirely new game spaces – externalised from the existing space where the audience character aspect transitions beyond the boundaries of the existing space 2) Discovery challenges beyond expected boundaries – as above 3) Randomised Praise 4) Progression to alternate aspects of the game space Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction • Choice variables and decisions of audience member • Game play statistics (running time, walking time, weapon or item used, use time, frequency distribution, accuracy, etc.) • Individualised "Badges", "Bonuses", "Progression Levels", "Promotions", "Points" & "Feedback"

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates
	Exploration – within games the very existence of a game space creates an automatic activity within the audience to begin exploring this new virtual realm. The same urge can be tapped into outside of games and is a facet to nurture as part of the gamification process.	Extensively used with audiences provided within the game space: 1) "Infinite game-space" 2) "Community collaboration" 3) "Discovery quests" 4) Part of "Player Progression" 5) CRM technology integration 6) Data warehousing systems 7) Data cleansing systems 8) Middleware implementations Measurement Metrics: Some tracking through: • Spatial telemetry history & real-time locale	The implementation of exploration and journeying will remain a significant element of the game experience but will be magnified to deliver a far broader spectrum of experience. Linkages to other connected elements within the framework such as certain 'Fear', 'Joy' and even 'Hate' elements will deepen the exploration/journey experience. Augmentation with juxtapositions to encompass simulator aspects will be possible with the entire experience individualised in accordance with audience member desires. capability will exist to: 1) Deliver new game-spaces

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	Journey – Similar to exploration in many ways but the generation of a facet of journeying whether internal mental or virtual interaction journeys that are perceived in the audience as forming a distinct path from one frame of reference or place to another can generate a powerful curiosity to "surf" and engage with the environment presented.	Extensively used as part of existing inculcations this is very similar to the Exploration but more planned for audiences through: 1) "Game-space" 2) "Storyline" 3) "Discovery quests" 4) Part of "Player Progression" 5) CRM technology integration 6) Data warehousing systems 7) Data cleansing systems 8) Middleware implementations Measurement Metrics: Some tracking through: • Spatial telemetry history & real-time locale	2) Alter in real-time the experience to incorporate "jumping" to and between other universes/spaces 3) Time dilate the interaction and enable forward and backward momentum on their own and external timelines 4) Externalise exploration incorporating other previously unknown game spaces and encourage "Community Collaboration" beyond the boundaries of the home environment 5) Offered real-time choices of customised challenges, quests, trials & enticements to explore and explore to new domains Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction • Choice variables and decisions of audience member • Game play statistics • Individualised "Badges", "Bonuses", "Progression Levels", "Promotions", "Points" & "Feedback" • Spatial telemetry history & real-time locale • eCTR, eCPC, eCPM, etc. • Flow metric

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates
	Impersonation – the final capability or mechanism to foster is that of creating the ability for the audience to abstract or abdicate themselves from the reality of who they actually are and to portray themselves as something they are not. Clearly, this aspect of the gamification requires careful control but constructed within a safety boundary can allow the audience to experiment in a very engaging way.	Well understood as a desirable facet within MMOG, console, online and mobile games environments. The ability to be anonymous within the game-space is a critical factor for many audience members. This is less a factor specific to game mechanics and is provided through: 1) Characterisation Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities – perhaps not capable of being tracked.	The ability will remain for any audience member to create, modify and build their custom avatar in a very similar way to that of today. Real enhancement will come with the ability to decant their characters abilities into different characters, to enable secondary in-game markets for abilities (noted that some already do), to transform to other creatures and enjoy the game space from a new perspective as a flying creature or underwater creature, to alter facets of the character intra-play and to have far more customisation options than exist today. Other features may include the ability to take their character (i.e. exportation) beyond the existing game space while retaining their

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			attributes – akin to taking a vampire character back to a WWII saga. Measurement Metrics: Real-time & historic tracking of: • Character attribute changes over time • Character manipulation • Traded components • Tailoring/customisation time

6.2   Joy

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
Joy	**Money** – we all understand that actual monetary incentives can be a powerful motivator. That said, overuse can lead to negative effects but the ability to 'coin operate' the audience has good short term acquisition effectiveness.	Monetary motivation will continue to play a significant factor in Gamification 2.0. Extensively used with audiences within the game space as an inducement to engage in: 1) "Challenges" 2) "Quests" 3) "Combo's" 4) Special membership awards 5) Money off tokens 6) CRM technology integration	Individualisation and the affordability of leveraging individual or customised prizes, awards and gifts. Gamification 2.0 will integrate within the entire technology back office capability to link currently diverse systems to create real-time views of audience usage, trends, predictions and much more. This BigData information capture across structured and unstructured

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		7) Data warehousing systems 8) Data cleansing systems 9) Middleware implementations Measurement Metrics: Real-time tracking through: • Winnings • "Points" • "Awards"	data will enable new highly sensitive algorithms to analyse the likelihood of uptake, use and benefit for the issuing organisation. In a similar vein the new BigData and analytics implementation will be able in real-time to generate content and linkages customised for the specific audience member that will link to other core motivators across the framework, i.e. rivalry, competition, autonomy, control, surprise, fascination to entice, excite and tempt. This will generate better engagement through:
	Savings – tapping into the modern day phenomenon of the 'coupon junkie' is a powerful stimulus. Today's retailers understand well the attractiveness of coupons and price accordingly with 'offers' not necessarily impacting gross margins in a disproportionately depressive way. Like monetary extrinsic motivations the innate attractiveness of a perceived deal in the eyes of the audience has a high short term impact to behaviour.	Similar in nature to the monetary motivation effect of money. The ability to achieve savings or discounts will continue to play a significant factor in Gamification 2.0. Extensively used with audiences within the game space and earned through standard game mechanics such as: 1) "Challenges" 2) "Quests" 3) "Combo's" 4) Special membership awards 5) Money off tokens 6) CRM technology integration 7) Data warehousing systems 8) Data cleansing systems 9) Middleware implementations	1) On-the-fly challenges, quests and combo type constructs individualised to the proclivities of the audience member 2) Special customised awards 3) Invitations to "new launches" 4) Awareness marketing for "new products" 5) Individualised newsletters and communications 6) Discovery challenges beyond

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		Measurement Metrics: Real-time tracking through: • "Coupons" • "Points" • "Combo's" • "Levels" • "Rewards"	expected boundaries 7) Individualised competitions 8) Suggest collaborations with other competitors 9) Real-time storyline enhancements aligned to likely audience "needs" 10) Focused audience surveys Measurement Metrics: Real-time tracking & historic record of:
	Achievement – well utilised in Gamification 1.0 this mechanism continues to have a place in the next generation. Badges, tokens and points of achievement continue to hold sway in audiences. The ability of the audience to engage on achievement tasks showing persistence and vigour in pursuit of virtual achievement constructs' remains a deep reservoir of motivation.	This component will continue to play a significant factor in Gamification 2.0. Extensively used with audiences within the game space as an outcome from engagement in: 1) "Challenges" 2) "Quests" 3) "Combo's" 4) Special membership awards 5) Money off tokens 6) CRM technology integration 7) Data warehousing systems 8) Data cleansing systems 9) Middleware implementations Measurement Metrics: Real-time tracking through:	• "Badges" • "Virtual currencies" • "Bonuses" • "Combo's" • "Progression Levels" • "Promotions" • "Points" • "Other rewards" • "Direct Feedback" • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		• Winnings • "Points" • "Awards"	• DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Challenge outcomes • Challenge choices
	Competition – the ability of human beings to natively evaluate themselves in comparison to others is renowned motivator. Exhaustively used in Gamification 1.0 and portrayed as rankings this engenders desires in the audience to "out-do" or "one-up" over the perceived competition. Unfortunate side-effects are noted in "employee of the month" type situations which are to be avoided – but the underlying construct remains valid and promoting friendly competition between audience members builds participation and longevity of engagement.	Very closely associated with money, saving, hoarding and reward above. Extensively used (probably the most renowned aspect of Gamification 1.0) with audiences within the game space familiar with: 1) "Challenges" 2) "Quests" 3) "Discovery" 4) "Trials" 5) "Surveys" 6) "Appointments" 7) "Community Collaboration" 8) "Countdowns" 9) "Epic Meaning" Measurement Metrics: Real-time tracking through: ▪ "Badges" ▪ "Levels" ▪ "Leader board status" ▪ "Virtual currencies" ▪ "Bonuses"	

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		"Combo's" "Progression Levels" "Promotions" "Points" "Direct Feedback"	
	Reward – in Gamification 1.0 these were exemplified above by badges etc. on achievement of certain tasks or goals in accordance with a published fixed or variable reward schedule. In Gamification 2.0 this goes much deeper to the root of reward beyond extrinsic motivators to tap into the intrinsic notion of self-enhancement and self-expression. Creating spontaneous individual rewards outside of the common systemic constructs to cultivate greater and deeper belonging within the audience.	Very closely associated with money, savings and hoarding above. Extensively used with audiences within the game space as an inducement to engage in: 1) "Challenges" 2) "Quests" 3) "Discovery" 4) "Trials" 5) "Surveys" 6) "Epic Meaning" Measurement Metrics: Real-time tracking through: "Badges" "Levels" "Leader board status" "Virtual currencies" "Bonuses" "Combo's" "Progression Levels" "Promotions"	

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		▪ "Points" ▪ "Direct Feedback"	
	Hoarding – the ability to engender a link within the audience experience to the behaviour of many to hoard or store for later use presents many opportunities for the gamification designer to occupy the audience for longer periods of time. In a virtual world the notion of enabling hoarding has yet to be tapped for its full potential with early inculcations in games being mainly directed at tool or item collection. This can be expanded dramatically at almost zero incremental cost to providers enabling far greater 'stickiness'.	When it is exhibited this tends to be: 1) Air mile banking 2) Available personal space 3) Point banking 4) Tool acquisition 5) Special membership awards 6) Money off tokens 7) CRM technology integration 8) Data warehousing systems 9) Data cleansing systems 10) Middleware implementations Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities with the exception of a real-time balance for: • Space used • Miles banked • Points banked • Tools acquired	Gamification 2.0 will see a vast expansion by organisations into customer ownership through adjacent giveaways not normally associated with their core business. The experiential factors for this will promote usage well beyond the existing boundaries to engage (some would say lock in) customers everyday usage. By offering storage space to hoard or collect far more than the existing banked items, currencies or miles the integration to external sites and business will enable the audience member to store useful items retrieved or gained in external (yet associated/partnered) sites. Also pictures, emails, documents, etc. All manner of items could be enabled and allowed. This also provides significant benefits for the provider to examine and leverage this often unstructured data for even deeper insights into the nature and tendencies of the audience member. Improved technology and mechanisms such as:

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			1) Traditional "Air mile", "points" and "coupon" banking 2) Expanded personal space with external integration to partner businesses/game-spaces 3) Individualised "special offers" for likely hoarding goods 4) Expansion on demand Measurement Metrics: Real-time tracking & historic record of: • "Miles" • "Virtual currencies" • "Points" • "Tools" • Space utilised • Characteristics of collections
	Knowledge – the audience likes to learn, in fact they can be induced to dramatically increase usage and time spent if there are constructs and mechanisms dedicated to an ability to learn, to grow cognitively in areas outside that of the base premise for being "on the site" or "in the store". Once again in the real world Apple have put this into great effect with "geek squads" and developed the notion of a community atmosphere. Also in the real world	Often a focus for Gamification 1.0 implementations within educational or training initiatives. Extensively used in those scenarios through: 1) "Challenges" 2) "Quests" 3) "Combo's" 4) "Discovery"	Offering a capability to learn within the game or simulation mechanism will increase exponentially. Linkages to external simulations which provide MMOG style "first person" environments for knowledge acquisition beyond the specifics of the original intent. While seemingly guiding the audience away from the core focus this is controlled through real-time

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	we all know the great sales person shows an interest, an empathy with the customers outside interests to continue engagement. In the virtual world linkages to clubs and societies abound. BigData helps to capture these associated tendencies in the audience and to leverage them as part of their unique experience.	5) "Exploration" Measurement Metrics: Real-time tracking through: ▪ "Examinations" ▪ "Tests"	algorithms to affect the extent to which to allow this tangent. The intent of the Gamification 2.0 initiative will be to increase engagement time and to capture the imagination of the audience with associated areas of learning where they have shown an interest. Closely coupling this with other framework aspects such as competition, power, achievement, fascination, etc. will enable the technology to deliver: 1) Custom and individual storylines encompassing alternate and incremental areas of learning 2) Individual on-the-fly choice stimuli offering the audience member new avenues of exploration 3) External linkage to character transition to simulation experiences – driving. Flying, building, etc. Measurement Metrics: Real-time tracking & historic record of: • "Examinations"

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• "Tests" • Usage • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content • Game spaces explored • Decisions made • Topics attempted through to mastered
	Closure – providing a sense of closure is a powerful motivator. Providing a sense through game mechanisms of a rounded circle, of a removal of ambiguity and uncertainty. Closure can be used in a game manner by purposeful inclusion enticing the audience to create the	When exhibited this tends to be: 1) "Storyline" 2) Natural game finish Measurement Metrics: Not generally	Gamification 2.0's all-encompassing technological integration will enable algorithms to investigate "drop out" rates much more closely, indeed even to predict when such an event may occur at the individual audience

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	closure or to ensure that there are no aspects of the virtual or real world engagement are left open and empty.	measured or tracked as a specific quantity or set of quantities.	member level. These types of events signal a reticence to close or finish aspects of the game so that when they occur the central service should take remedial action. The identification and removal of obstacles to closure will be facilitated through: 1) Real-time storyline changes 2) Real-time challenge easement – making the task simpler on an individual audience member basis 3) Changing the progression steps on an individual basis 4) Introduction of a AI "buddy" NPC to stimulate ideas in the audience member Measurement Metrics: Real-time tracking & historic record of: • "Achievements" • Usage • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content • Game spaces explored
	Pleasure – this aspect is about the perceptual pleasure that should play a significant part in the gamification construct. Visuals, placements, presentation and more need careful consideration for their ability to foster pleasure. Steve Jobs was a vocal proponent and well know obsessive on the detailed aspects of all components whether visible or invisible. From rounded corners to fonts his meticulous attention to these details instilled a public and captured hearts as well as minds. It is no mistake that Apple has fans rather than customers and their retail stores are ranked the highest sales per square foot of space in the US.	Low level aspect generally non-integrated to audience history with pre-set presentment through universal: 1) Visuals & sound stimuli 2) "Storylines" 3) "Game-spaces" Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities. If measured some evidence could be extracted from "pop up" or mailed feedback surveys which tend to the mechanism employed.	The ability to manage every aspect of the environment on an individual basis provides a far broader spectrum of pleasure seeking facets. The converse of managing every aspect is to empower the audience with the feeling that they are managing every aspect of the game space. The ability will exist to link pleasure, control and power to enable each individual to customise their views and game space. With Exascale computing at a simplistic level this could be the

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	Power – building a sense of power or empowerment in within the experiences of the audience are very persuasive mechanisms to maintain the attractiveness of the construct. A mechanism that conveys a sense of power leads to enhanced status in the audience in a similar way to upgrade elements. Buttressing the audience by legitimising their knowledge acquisition or journey to date publicly provides a platform for expert power which the audience would find attractive.	Well understood in game circles but harder to achieve in real world scenarios. Gamification 1.0 has seen some implementation through: 1) Characterisation 2) "Choices" 3) "Collaborations" 4) "Team leading" Not necessarily tracked directly as a specific quantity but could be estimated through measurement metrics in real-time tracking through: • "Achievements" • "Points" • "Rewards"	ability to colour the game-space, mark areas, mark other characters, and the like. Beyond this the capability to: 1) Customise the soundtrack, visuals and characters 2) Take part in choosing storylines before engaging in the game 3) Offering individualised choices of game-space 4) Offering individualised choices of progression 5) External linkages to other game spaces 6) Increased characterisation attributes including even the ability to "make your own" tools, clothes, scenery etc. Measurement Metrics: Real-time tracking & historic record of: • "Customisations" • Usage of toolsets provided • Choices and decisions made • Alternate game spaces explored

6.3   Hate

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
Hate	Note: 1) It is worth a note of caution and explanation with respect to some of the following identified motivators within this framework. The employment of these aspects of human motivation is a subject for separate discussion from an ethical and moral standpoint. From the perspective of this article it would be remiss to not identify these capabilities as being extant and possible to employ in the pursuit of the revenue aims of the commercial organisation. 2) There is less potential to engage in all the "Hate" motivational aspects within the real-world context than with many of the other components within the conceptual framework.		
	Exploitation – the darker nature in all human beings to perform acts that are exploitative exists. From a gamification perspective the ability to induce an audience with to engage their darker traits may suit well the makers of certain games and it is undoubtedly a strong motivator if employed. The facet of exploitation also has two sides in that there are many who gain reward, fun, and pleasure from being exploited albeit from within a set of control parameters.	Rarely utilised in any significant sense outside of MMOGs, console and online games. The linkage to mechanics is through: 1) "Storyline" 2) Character choices & actions 3) "Infinite gameplay" 4) Social communication Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	Once again as with many of the aspects of above the core characteristic that distinguishes Gamification 2.0 from 1.0 is the ability to individualise the interface, engagement and connection (non-IT type) to the audience. As identified above large scale integration and the usage of BigData with heavily customised analytics will create real-time views of audience usage, trends, predictions, and in particular for Exploitation, Humiliation and Cruelty it will reveal those proclivities or eccentricities. BigData and analytics will be able in real-time to generate content and linkages customised for
	Humiliation – a similar sentiment to that of exploitation there are occasions when the ability to bully or to degrade or fully humiliate provides an attraction for an audience with, for instance, narcissistic tendencies.	As with exploitation Rarely utilised in any significant sense outside of MMOGs, console and online games. The linkage to mechanics is through: 1) "Storyline" 2) Character choices & actions	

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		3) "Infinite gameplay" 4) Social communication Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	the specific audience member that can be heavily customised to the particular inclinations to entice, excite and tempt. This will generate better engagement through:
	Cruelty – we have all noted that children have a propensity to cruelty during certain phases of their development and this facet of behaviour usually wanes. This behaviour is also extant in the virtual world, for instance NOOB bullying. However the abstraction that comes with remoteness and especially with the virtual world interactions provides ample opportunity to create a mechanism which could be leveraged to engage the audience and channel the cruelty trait in a more productive way.	As with some of the above rarely utilised in any significant sense outside of MMOGs, console and online games. The linkage to mechanics is through: 1) "Storyline" 2) Character choices & actions 3) "Infinite gameplay" 4) Social communication Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities but certain aspects i.e. bullying, could be tracked through bulletin board messages.	• On-the-fly challenges, quests and combo type constructs individualised to the likings of the audience member • Purposeful placement of specially created AI NPCs which can be the focus of darker actions • Creation of specific environments as tangents to the main "Storyline" where certain appetites of the audience members character can be satiated • Special customised challenges • Invitations to "new launches" • Awareness marketing for "new products" • Individualised newsletters and communications • Discovery challenges beyond expected boundaries

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• Individualised competitions • Suggest collaborations with other like-minded competitors • Real-time storyline enhancements aligned to likely audience "needs" • Focused audience surveys Measurement Metrics: Real-time tracking & historic record of: • "Badges" • "Virtual currencies" • "Bonuses" • "Combo's" • "Progression Levels" • "Promotions" • "Points" • "Other rewards" • "Direct Feedback" • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content • Challenge outcomes • Challenge choices
	Revenge – unquestionably a strong motivator given that a thirst for vengeance is well recognised in all of us. Whether it runs no deeper than simply getting ahead of the car that just overtook you on the motorway in your view wrongly, or to the depths that motivated 56.5 million to watch the Presidential announcement the death of an infamous terrorist, there is no doubt it can be used with game mechanisms to derive the end goal. Creating and constructing situations where ownership and involvement achieves the depth of feeling to fuel revenge can be an excellent	Rarely utilised in any significant sense outside of MMOGs, consoles and online games. Linkage to mechanics through: 1) "Storyline" 2) "Kills metrics" 3) "Community Collaboration" 4) Social communication 5) CRM technology integration 6) Data warehousing systems 7) Data cleansing systems 8) Middleware implementations	Harnessing Revenge, Loathing and Rivalry will also stem from the providers ability to link with BigData, to analyse this data and to identify the specific nuances of individual situations. In this way the system will be able to: • Build on-the-fly challenges, quests and combo type constructs individualised to the likings of the audience

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	motivator of attractiveness and attention.	Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	member • Build on-the-fly changes into the "storylines" to engender and nurture the motive
	Loathing – an aspect of hatred linked to both revenge and rivalry. Similar to some of those above the efficacy of use is as yet untapped but could form an aspect of certain providers' capabilities.	As with some of the above rarely utilised in any significant sense outside of MMOGs, console and online games. The linkage to mechanics is through: 1) "Storyline" 2) Character choices & actions 3) "Infinite gameplay" 4) Social communication Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	• Issue customised awards and special "bounties" for campaigning or combating with particular known enemies • Purposeful placement of specially created AI NPCs which can be the focus of darker tactics and actions • Better awareness marketing for "new products" • Individualised communications which can stir action • Personalised invitations to private screenings • Discovery challenges beyond expected boundaries • Suggest collaborations with other like-minded competitors • Focused audience surveys
	Rivalry – A less contentious motivator but one capable of being utilised to enlist continued support for a particular behaviour. Rivalries have existed at levels between teams, groups, countries and corporations for time immemorial and can provide an excellent basis for designer to entertain and feed.	Well understood as a factor within MMOG, console, online and mobile game environment with pre-set presentment through universal: 1) "Leaderboards" 2) "Status" 3) "Publicised Levels" 4) Social communications 5) CRM technology integration 6) Data warehousing systems 7) Data cleansing systems 8) Middleware implementations	Measurement Metrics: Real-time tracking & historic record of: • "Badges" • "Virtual currencies"

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		Measurement Metrics: Real-time measurements in line with game-play through: • Leaderboards • Levels • Achievements • "Social bragging"	• "Bonuses" • "Combo's" • "Progression Levels" • "Promotions" • "Points" • "Other rewards" • "Direct Feedback" • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• Challenge outcomes • Challenge choices
	Aggression – there are levels of aggression which can be channelled within a gamification framework. Utilising a description as "human aggression is a behaviour directed toward another individual that is carried out with proximate (immediate) intent to cause harm" then it is easy to see how in game situations this is already used extensively. From a gamification framework standpoint outside of videogames there are instances when low levels of aggression can be employed usefully in pursuit of the goal. **Fighting** – violence or fighting often comes hand in hand with aggression but can also be used as a focus item for entertainment purposes, for instance as a spectator construct. The rise in revenues of combatant style sports points to an innate attraction by many audiences for combatant entertainment.	Well understood as a significant factor within MMOG, console, online and mobile game environment. In terms of input variables with design criteria and game mechanics this tends to be: 1) Reliant on storyline 2) "Achievements" 3) "Community collaboration" 4) "Epic Meaning" trials or quests 5) "Infinite gameplay" 6) Social communication 7) "Kill metrics" 8) "Damage metrics" Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	The increased capability to trace each audience members' characteristics such as historical: Knowledge, Interest, Journey, Exploration, Challenges, Quests, Rivalries, Revenge, Loathing, etc. enables a customised progression algorithm to integrate random new components, into the game space directed at known areas of interest of the audience members and to purposefully create instances where known enemies will meet. This fuels the animosity and provides ample platforms for combat, through: • Novelty quests in entirely new game spaces – externalised from the existing space where audience characters can altercate beyond the boundaries of the existing space • Discovery challenges beyond expected boundaries – as

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			above • Out of the blue "Epic Meaning" trials • In real-world the out-of-the-blue special invitation to an event for their specific clan, tribe, group or allies • Purposeful placement of specially created AI NPCs which can be the focus of aggression Measurement Metrics: Real-time tracking & historic record of: • Kill "Badges", "Bonuses" & special "Progression Levels" • "Promotions" • "Points" • "Other rewards" • "Direct Feedback" • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Real world invitation visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content • Challenge outcomes • Challenge choices
	Envy – The final dark motivator is that of envy. At the lower end of the spectrum Gamification 1.0 has already highlighted the efficacy of primitive constructs such as ranking boards to engender both animosity but also envy to propel the further engagement.	Very similar to rivalry but much stronger emotionally. Used as a factor within MMOG, console, online and mobile game environment with pre-set presentment through universal: 1) "Leaderboards" 2) "Status" 3) "Publicised Levels" 4) Social communications Measurement Metrics: Real-time	Identical from a game mechanism viewpoint to that of Rivalry above. The system will be able to: • Build on-the-fly challenges, quests and combo type constructs individualised to the likings of the audience member • Build on-the-fly changes into the "storylines" to engender and nurture the motive

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
		measurements in line with game-play through: • Leaderboards • Levels • Achievements • "Social bragging"	• Issue customised awards and special "bounties" for campaigning or combating with particular known enemies • Purposeful placement of specially created AI NPCs which can be the focus of darker tactics and actions • Better awareness marketing for "new products" • Individualised communications which can stir action • Personalised invitations to private screenings • Discovery challenges beyond expected boundaries • Suggest collaborations with other like-minded competitors • Focused audience surveys Measurement Metrics: Real-time tracking & historic record of: • "Badges" • "Virtual currencies" • "Bonuses" • "Combo's" • "Progression Levels" • "Promotions"

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• "Points" • "Other rewards" • "Direct Feedback" • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content • Challenge outcomes • Challenge choices

6.4   Pride

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
Pride	**Independence** – developing an essence through independent use, struggle or knowledge acquisition in the audience builds a deeper sense of satisfaction. This can be a significant loyalty generator.	The ability for an audience member to feel self-led and independent within the game-space is often a very favourable capability. Linked in Gamification 1.0 through mechanisms such as: 1) "Infinite game-space" 2) "Storyline" choices 3) Characterisation customisation Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	The ability will remain for any audience member to create, modify and build their custom avatar in a very similar way to that of today (see Impersonation above). Beyond this the ability to develop their own path and to be the instigator of choices within the game-space will become a key factor. Individual paths of progression and routes through the space will be linked to customised challenges and trials. Gamification 2.0 will enhance the feeling of independence through: 1) On-the-fly challenges, quests and combo type constructs individualised to the appeal to the audience member 2) On-the-fly changes injected into the "storylines" to produce seemingly random choice junctions 3) Purposeful placement of specially computer generated AI NPCs which can introduce divergent potentials for

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			"choices" 4) A similar set of "choice junctions" can also be facilitated in the real world through special invitations and personalised communications Measurement Metrics: Real-time & historic tracking of: • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • Click rates eCTR, eCPC, eCPM, etc. • Revenues IAP, ARPU, APPU, etc • Challenge outcomes • Challenge choices
	Self-Expression – used extensively within Gamification 1.0 this well-known mechanism provides an ability to gain a deeper connection for the audience between themselves but also within the construct of the gamification framework. In the virtual domain in particular facilitating through personal customisations	Well understood as a desirable facet within MMOG, console, online and mobile games environments. The ability to express one's own personality within the game-space is a critical factor for many audience members. This is less a factor specific	The full spectrum of BigData and analytics will be brought to bear on the types of choices audience members make in regard to customisation, not just of the character but of the game-space and all of the previously described choice junctions that will be

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	enables each audience member to emancipate their personality electronically.	to game mechanics and is provided through: 1) Characterisation 2) Social communications mechanisms (Facebook, Twitter, SnapChat, Instagram) 3) CRM systems integration Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities.	made available in Impersonation, Fascination, Challenge, Knowledge, etc. and links to unstructured commentary made through the social media and bulletin board postings, etc. Algorithms will digest the breadth of this content to develop mechanisms to offer such as those above: 1) On-the-fly character elements to the appeal to the audience member 2) On-the-fly changes injected into the "storylines" to produce seemingly random choice junctions 3) Purposeful placement of specially computer generated AI NPCs which can introduce divergent potentials for "choices" 4) A similar set of "choice junctions" can also be facilitated in the real world through special invitations and personalised communications Measurement Metrics: Real-time & historic tracking of:

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			• Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • eCTR, eCPC, eCPM, etc. • Flow metric • DAU, MAU, LTNV, EED, XED • IAP, ARPU, ARPPU, etc. • New space exploration • Time spent & places within the space • Momentum • Degree of NPC engagement • Message Conversion Rates • Tweets, Posts, Blogs & Content as OMR • Completion rates • Items usage rates • Tweets, Postings, Blogs & Content • Challenge outcomes • Challenge choices
	Promotion – again well utilised within the current gamification community. The notional idea is to stagger the attribution of grades, knowledge, points, rewards or other construct and to affect a form of promotion upwards to	Extensively used with audiences provided through fixed pathways with challenges en-route through the game space:	Implementation of promotion and a sense of significance will remain a significant element of Gamification 2.0. The evolution to 2.0 will come through

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	some sought after status. In Foursquare this was Mayor. In MMOGs this tends to be professions or skills. The sense of pride and achievement that comes with such advancement continues to be a core element of Gamification 2.0 with the increased capabilities of BigData analysis to enable purpose or custom alignment to the skills exhibited by the audience member.	1) Introduction of new storyline 2) Staggered build ups with "Cascading Information" 3) "Quests", "Trials" & suchlike 4) In the real world "visits" 5) CRM technology integration 6) Data warehousing systems 7) Data cleansing systems 8) Middleware implementations Measurement Metrics: Real-time tracking through: ▪ "Badges" ▪ "Virtual currencies" ▪ "Bonuses" ▪ "Combo's" ▪ "Progression Levels" ▪ "Promotions" ▪ "Points" ▪ "Direct Feedback"	an ability to customise those challenges to the specific audience and even down to the individual audience member in both real and virtual worlds. With greatly increased processing power analytics inputs specifically designed decision support, time series modelling, alternative modularised storylines and expanded historical usage reference information the capability will exist to: 1) Customize challenges 2) Randomise challenges 3) Tangential-ise storylines 4) Externalise challenges incorporating other previously unknown game spaces 5) Stagger build ups at a customised pace that can change in real-time 6) Purposeful placement of specially computer generated AI NPCs which can introduce divergent potentials for "choices" 7) Offered choices of customised challenges
	Significance – being an influencer or expert or master or mayor ascribes a sense of significance in the audience. Gamification 1.0 touches on this aspect mainly through the allocation of badges or ranks but there is also a capability to broaden this aspect to link it to knowledge acquisition and challenge to create "buddies" who can aid other audience	Used but not really driven from the perspective of what could be feasible. Linkage to mechanics through: 1) "Storyline" 2) "Community Collaboration" 3) Social communication 4) CRM technology integration	

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	members. This as yet nascent support mechanism (often in games the NOOB advice on bulletin boards) could be encouraged more effectively.	5) Data warehousing systems 6) Data cleansing systems 7) Middleware implementations Measurement Metrics: Not generally measured or tracked as a specific quantity or set of quantities. Rather tracked as an adjunct to Promotion.	Measurement Metrics: Real-time tracking & historic record of: • "Badges" • "Virtual currencies" • "Bonuses" • "Combo's" • "Progression Levels" • "Promotions" • "Points" • "Other rewards" • "Direct Feedback" • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • Click rates eCTR, eCPC, eCPM, etc. • Flow metric • Revenues IAP, ARPU, APPU, etc • Challenge outcomes • Challenge choices
	Control – providing a platform within the framework for the audience to control aspects (or all) of their environment is also a strong motivator. The implementation of a means for	Well understood in game circles but harder to achieve in real world scenarios. Gamification 1.0 has seen some implementation through:	The ability to manage every aspect of the environment on an individual basis provides a far broader spectrum of control and empowerment for the

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	control delivers ownership and loyalty, increasing engagement and (for the framework owner) drives the audience towards the underlying goal.	1) Characterisation 2) "Choices" 3) "Collaborations" 4) "Team leading" Not necessarily tracked directly as a specific quantity but could be estimated through measurement metrics in real-time tracking through: • "Achievements" • "Points" • "Rewards"	audience. A sense of autonomy comes with vastly increased choices on how to interact with the game space. The ability will exist to link aspects of motivation together such as Power, Control, Autonomy, Impersonation and more to enable each individual to customise their views and game space. With Exascale computing at a simplistic level this could be the ability to colour the game-space, mark areas, mark other characters, and the like. Beyond this the capability to:
	Autonomy – closely linked to control but more personal in nature this aspect of any framework would seek to engage the audience through mechanisms aimed at promoting personal control over the game space or the real world construct. Providing choice mechanisms and asking rather than telling are key factors in building the sense of autonomy.		1) Customise the soundtrack, visuals and characters 2) Take part in choosing storylines before engaging in the game 3) Offering individualised choices of game-space 4) Offering individualised choices of progression – even build your own individual progression levels and route 5) External linkages to other game spaces 6) Increased characterisation attributes including even the ability to "make your own"

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			tools, clothes, scenery etc. Measurement Metrics: Real-time tracking & historic record of: • "Customisations" • Usage of toolsets provided • Choices and decisions made • Alternate game spaces explored • Response time to stimuli • Uptake to offer ratios • Real world retail visits • Screen/character movement interaction (if feasible even mouse/touch interactions) • Click rates eCTR, eCPC, eCPM, etc. • Flow metric • Revenues IAP, ARPU, APPU, etc
	Respect – the conveyance of respect in the audience and between audience members builds a broader base of participation. Gamification 2.0 can create the necessary linkages between aspects such as knowledge acquisition, journey elements, explorers, and facilitate greater interactions between those	Well understood in both real world and gaming circles. Gamification 1.0 has seen some implementation through: 1) Social media linkages 2) "Collaborations" 3) "Team leading"	This will become a keen focus of the analytics and BigData component of Gamification 2.0. The advancements that will come from the greatly increased processing, analytics, algorithms, and BigData inputs will

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	who previously would never have met.

Praise – conditioning is nothing if not simple. A pat on the back is often received with far longer lasting and deeper emotive penetration than a short term badge or promotion. Gamification 2.0 can build random mechanisms for delivering both real and virtual "pats" and delivery timely praise to audience members both on a one-to-one and public basis. | 4) Bulletin boards
5) "Clans"
6) "Tribes"
7) "Groups"
8) "Fleets"
9) Chat rooms

Not necessarily tracked directly as a specific quantity but could be estimated through measurement metrics in real-time tracking through:

- Tweets
- Memberships
- Collaborative Challenges | enable real-time play inspection and recording. Algorithms can examine the strategies taken, the tactics, the choices made and build an understanding of each audience members' capabilities. Fixed and rigid step-by-step progression will end and "Behavioural Momentum" broken resulting in a more flexible engaging experience provided through:

1) On-the-fly AI NPC "buddies" to help with advice and praise
2) On-the-fly unexpected praise
3) Potentially AI NPC followers
4) Playback analysis capable of being dispatched to social media
5) Individualised invitations to special appointments
6) Customised invitations to join new "specialty teams, clans or tribes"
7) Exclusive real world customisable cards – choose your design- entrance to special retail site areas
8) Public and private feedback |

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction (if feasible even mouse/touch interactions) • Click rates eCTR, eCPC, eCPM, etc. • Revenues IAP, ARPU, APPU, etc • Extra-game activities • Social interactions – tweets, postings, etc.
	Friendship – the ability to meet with others and enjoy the social aspects of virtual or real world situations remains a strong motivator. Equally well recognised is the ability to make possible virtual friendships and a collegial spirit. The social influence of interlocking to Facebook, Twitter and other social cites helps to promote a need for continual use of the framework for the audience. **Acceptance** – within groups, teams, or as part of membership itself the feeling of being wanted and accepted is a strong universal	Well understood in both real world and gaming circles. Gamification 1.0 has seen some implementation through: 1) Social media linkages 2) "Collaborations" 3) "Team leading" 4) Bulletin boards 5) "Clans" 6) "Tribes" 7) "Groups" 8) "Fleets"	Gamification 2.0. The advancements that will come from the greatly increased processing, analytics, algorithms, and BigData inputs will enable gamification initiatives to understand the social networks developing around game facets with algorithms that can identify nuances that can be utilised: 1) Foster a sharing economy within the game space 2) Encourage a secondary market

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
	motivator.	Not necessarily tracked directly as a specific quantity but could be estimated through measurement metrics in real-time tracking through: • Tweets • Memberships • Collaborative Challenges	for goods and services within the game-space 3) Engender new networks to evolve – specialists; contract hires (similar to bounty hires in current games but far broader) 4) Encourage locale related physical connections through invitations to special functions with rewards for coming as a car-share or as a group 5) Encourage in-game businesses to break out to real world business – create linkages to crowdfunding Measurement Metrics: Real-time tracking & historic record of: • Response time to stimuli • Screen/character movement interaction (if feasible even mouse/touch interactions) • Click rates eCTR, eCPC, eCPM, etc. • Revenues IAP, ARPU, APPU, etc • Extra-game activities • Social interactions – tweets,

Framework Primary	Measurable Sub-Components	Gamification 1.0 Mechanics & Technology Implementation	Gamification 2.0 Mechanics & Technology Implementation
			postings, etc.

6.5 Fear

Framework Primary	Measurable Sub-Components	Gamification 2.0 Mechanics & Technology Implementation
Fear	**Separation** – the potential for frameworks to "get it wrong" and alienate the targeted audience is extant. Careful consideration must be given to mechanisms that could be perceived as creating or perpetrating any kind of separation between audience and framework owner or audience members.	In general none of the following are monitored, measured or reported on in Gamification 1.0 other than the superficial aspects of CRM based systems which can identify: ▪ Lack or absence of further purchases ▪ Complaints registered and received ▪ Feedback notes ▪ Derogatory postings on social media The big difference with Gamification 2.0 will be the ability, from the use of BigData and analytics to identify disgruntled or disaffected audience members far in advance of the ultimate "unfollow" or "walk away" action.
	Grief – there are levels of grief and in the context of gamification it would be under unusual circumstances that the "death" type sense of grief would occur. More pertinent would be a lower order sense of grief which could happen at the loss of a character or avatar and such an emotion could impact a gamification framework so care must be taken to ensure that no potential for grief from use of the framework could happen.	
	Punishment – there must be rules and with rules come policing and enforcement actions. These though must be proportionate to the offence, transparent and upfront, private and well documented. They must also come with an appeals facility.	This will come from Gamification 2.0's ability to individualise the audience interface, engagement and connection (non-IT type). As identified above large scale integration and the usage of BigData with heavily customised analytics will create real-time views of audience usage, trends, predictions, and in particular for these "Fear" motivators it will reveal those who are beginning to
	Abandonment – as with separation any corporate or enterprise can unnecessarily and unintentionally imbue a sense of audience abandonment. This needs to be factored into the design process to ensure that no sense of disenfranchisement can occur.	

Framework Primary	Measurable Sub-Components	Gamification 2.0 Mechanics & Technology Implementation
	Loss – any sense or anticipation that a loss of any kind either virtual or real world to the audience could occur needs to be rebuffed within the framework. The mechanism must have a facility to report losses and effective procedures or operational constructs to deal with such situations. This must also be transparent, well-rehearsed and broadly advertised.	exhibit behaviours related to these areas. BigData and analytics will be able in real-time to generate content and linkages customised for the potentially disappointed specific audience member. This will generate better LCV through: 1) Restitution of the assumed issue 2) On-the-fly specially customised challenges, quests and combo type constructs individualised to the audience member 3) Purposeful placement of specially created AI NPCs which can engage the audience member to find out their reasons for faltering or their disappointments with the game space 4) Creation of specific environments as tangents to the main "Storyline" where certain appetites of the audience members character can be satiated 5) Real-time storyline changes For those who are not yet audience members the same forms of BigData and analytics can be used to examine the records of target audience members on an individual basis to reveal what they are highly likely to be interested in and to send: 6) Customised invitations to "new launches" 7) Personalised marketing for "new products" 8) Individualised letters and communications 9) AI driven chatting 10) Individualised competitions
	Risk – the audience evaluates the risk to them of joining, the risk of participation, the risk of lock-in and many more factors as part of the decision criteria before committing. As with the other negative aspects related to fear of the framework, the designers must evaluate what these are and prepare suitable messaging to address these concerns with a view to maximising participation. Once participating the framework designers should examine all aspects and facets of each mechanism to identify how audience members could perceive risks. This could become festering off-putting components of participation.	
	Anxiety – in a similar vein to risk above, worries whether real or perceived are negative facets that also must be quelled. Designers of the framework should role play to "put themselves in the shoes" of potential audience members and reflect at length on the language used, the visuals, the styles, the aura generated and all other aspects from the point of view of what worries could conceivably (if unknowingly) be transmitted. This is equally important with all communications and external public relations advice could help in this design phase. Within the gamification framework anxiety should be minimised and audiences should not begin to harbour misgivings about involvement.	

Framework Primary	Measurable Sub-Components	Gamification 2.0 Mechanics & Technology Implementation
	Rejection – similar to loss abandonment and separation. Any rejection of membership must be well thought through and sensitively relayed. It may be necessary to reject membership but the operational aspects of the handling of such a rejection should be empathetic. Once participating rejection of advancement or promotion within the game mechanism must also be considered. If there are hurdles to advancement then they must be adhered to and it is the manner of relaying failure that needs to be constructed carefully so as not to appear to admonish or belittle the audience.	11) Suggested collaborations with other like-minded people who are already members Measurement Metrics: Real-time tracking & historic record of: • Lack of response time to stimuli • Lack of uptake to offer ratios • Lack of real world retail visits • Reduction of usage time (MAU & DAU) • Reduced click rates for eCTR, eCPC, eCPM, etc. • Revenue declines in IAP, ARPU, APPU, etc. The critical distinguishing factor is to form an individual level view of each audience member and to relate to them individually as opposed to universal communications and (often from their point of view) meaningless marketing messages.
	Shame – publicly failing to achieve an outcome, task or promotion could build strong emotions of shame in the audience. This is the double-edge of rankings. There are well documented cases of the downsides to rankings, for instance like employee of the month and the dis-incentive they deliver within the working environment. The same can be true of ranking boards.	
	Pain – the pain is unlikely to be physical but mental turmoil linked to worry or anxiety could elicit a pain like emotion. As the gamification framework deepens the engagement with the audience member the potential for a perception of pain linked to loss, separation and rejection.	

6.6 Effort

Primary	Description
Effort (E)	- Time – before and even after joining audience members will qualify in their own minds how much time will need to be given to being a participant. Careful examination by the designers of how much time it takes to set-up, to advance, to participate, to gain promotion, to win rewards, etc. and to make each step justifiably proportionate with the reward. - Cost – Price is always a deal clincher or killer. The pricing strategy is crucial to gaining the level of involvement expected. - Physical – in conjunction with time the audience will evaluate whether there are any physical constraints or requirements to the gamification framework. - Mental – whether virtual or real world the participation will require some degree of mental input. This will be evaluated by potential audiences as part of the negative aspects of the framework. - Emotional – contingent on the type of framework there may be an emotional effort required to participate. As with the other negative aspects this must be well thought through to minimise the negative undercurrents.

6.7 Voluntariness

Primary	Description
Voluntariness	Underpinning both the positive and negative aspects outlined above is the element of voluntariness. If the framework is involuntary than this should be taken into account during the design of each of the other components.

6.8 Sources & Further Reading

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7. GAMIFICATION 2.0 – MONETISING MOTIVATION USING THIS TYPE OF FRAMEWORK

Now that a primitive Conceptual Framework is extant a commercial formulation on the basis of this reduced or isolated number of determinants of motivation can be ascribed with a consistent measurement scale across each determinant to develop a formal commercial model which ultimately enables the designers to model the revenue expectations:

a) In advanced of build; and

b) Post-build during the lifecycle of the game

The first step is to associate a scoring metric for each of the sub-components. In addition, each sub-component will have a probability, that being the probability of the customer, player or user having or perceiving that motivation from the game. The final aspect is the appointment of a weighting factor which is factored by the design team based on the target audience for the game. The baseline choices provided in this simple model are presented below:

Curiosity	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Obsession	5	1	0.111	1
Exploration	5	1	0.111	2
Journey	5	1	0.111	3
Impersonation	5	1	0.111	2
Surprise	5	1	0.111	3
Fascination	5	1	0.111	3
Anticipation	5	1	0.111	3
Challenge	5	1	0.111	1
Interest	5	1	0.111	3

Pride	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Acceptance	5	1	0.1	2
Praise	5	1	0.1	3
Respect	5	1	0.1	1
Autonomy	5	1	0.1	4
Significance	5	1	0.1	5

Pride	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Control	5	1	0.1	1
Friendship	5	1	0.1	3
Promotion	5	1	0.1	2
Self-Expression	5	1	0.1	1
Independence	5	1	0.1	5

Joy	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Hoarding	5	1	0.1	3
Saving	5	1	0.1	3
Money	5	1	0.1	2
Power	5	1	0.1	3
Competition	5	1	0.1	2
Closure	5	1	0.1	2
Knowledge	5	1	0.1	4
Reward	5	1	0.1	3
Pleasure	5	1	0.1	4
Achievement	5	1	0.1	5

Hate	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Exploitation	5	1	0.111	2
Humiliation	5	1	0.111	3
Rivalry	5	1	0.111	2
Revenge	5	1	0.111	3

Hate	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Loathing	5	1	0.111	4
Cruelty	5	1	0.111	1
Envy	5	1	0.111	1
Aggression	5	1	0.111	1
Fighting	5	1	0.111	2

Fear	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Risk	5	1	0.1	1
Abandonment	5	1	0.1	3
Loss	5	1	0.1	3
Grief	5	1	0.1	2
Separation	5	1	0.1	2
Punishment	5	1	0.1	4
Pain	5	1	0.1	2
Shame	5	1	0.1	1
Rejection	5	1	0.1	3
Anxiety	5	1	0.1	3

Effort	Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
Time	5	1	0.2	2
Mental	5	1	0.2	4
Physical	5	1	0.2	2
Emotional	5	1	0.2	3

Effort		Maximum Motivation	Minimum Motivation	Influence Probability	Design Weight (1 Low; 5 High)
	Cost	5	1	0.2	4

The fine-grained data inputs which enable the assignation of a score between 1 and 5 to each sub-component are beyond the scope of this paper. They would however be provided based on the metrics outlined in the table in Section 6 under the heading "Gamification 2.0 Mechanics & Technology Implementation". It is proposed that the sub-component score be assigned "per hours play" based on an analysis of the underlying in-game and extra-game data. Those score provide an ability to visualise each customers, players or users motivational status over time both by component and by sub-component. For instance after the first hour in terms of Curiosity & Pride Player#1 displayed the following scores:
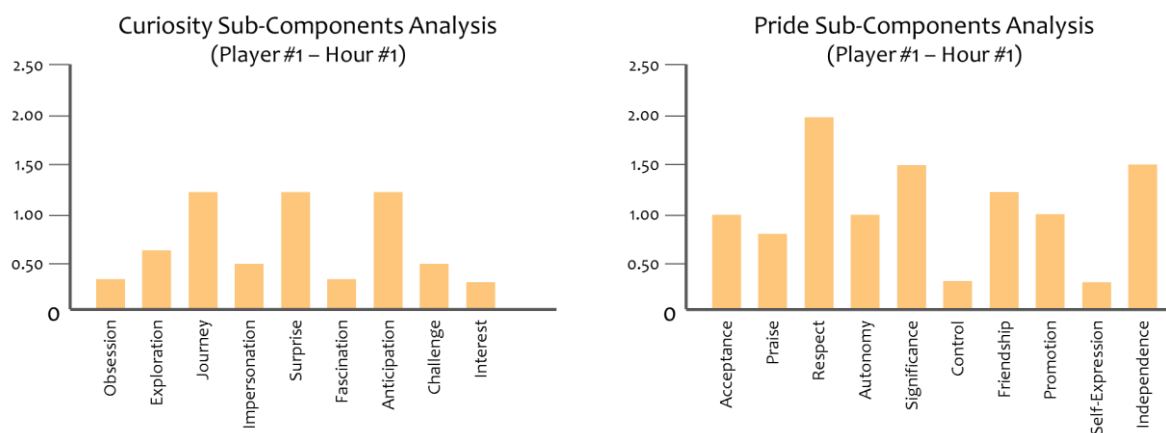
The total visualization for Player#1 over Hour#1 looks like this:

All Sub-Components Analysis (Player #1 – Hour #1)
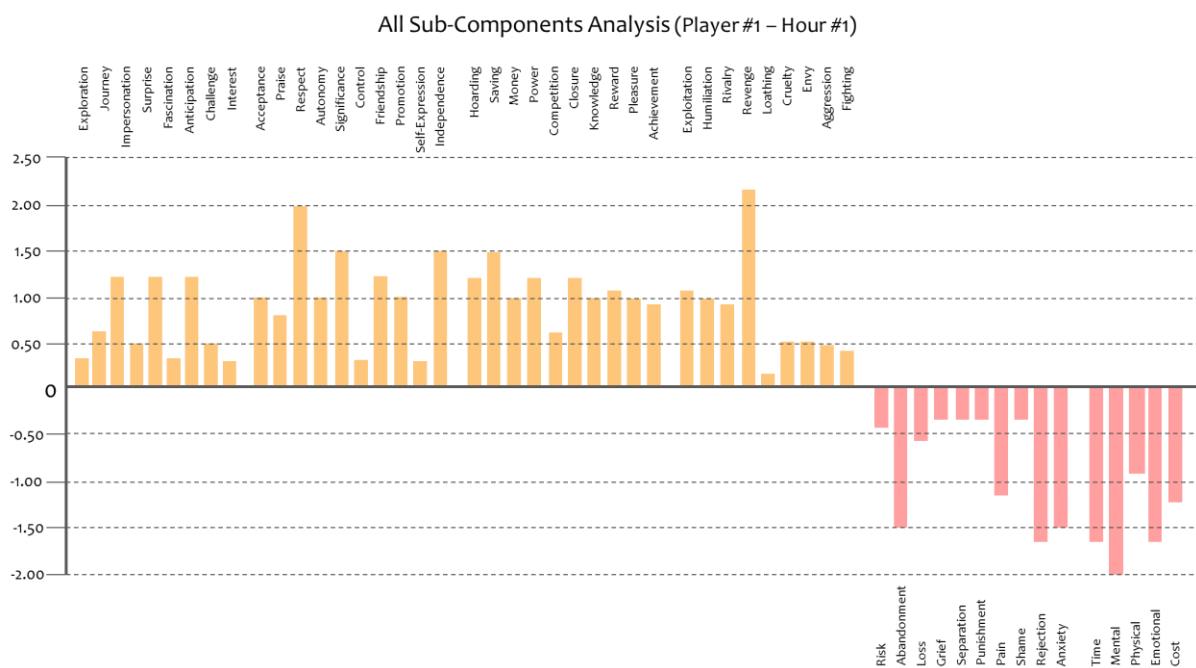
This information can now be used to derive the Total Motivational Index (TMI) for Player#1. This is defined within the Conceptual Model as being the sum of the positive motivational components (Curiosity, Joy, Pride, & Hate) minus the negative motivational components (Fear & Effort) divided by the voluntariness of the motivation. For any time (t) this could be viewed as:

$$TMI = \sum_{t=0}^{n} \frac{(C_t + J_t + H_t + P_t - F_t - E_t)}{V_t}$$

In this instance for Hour #1 Player#1 exhibited a TMI of 19.92 on the basis that this is an entirely voluntary game. Continuing to gather the information over the next 23 hours builds the following visual representation of the TMI for Player#1 over the first 24 hours of game time:

Player#1 Total Motivational Index
(First 24 Hours)
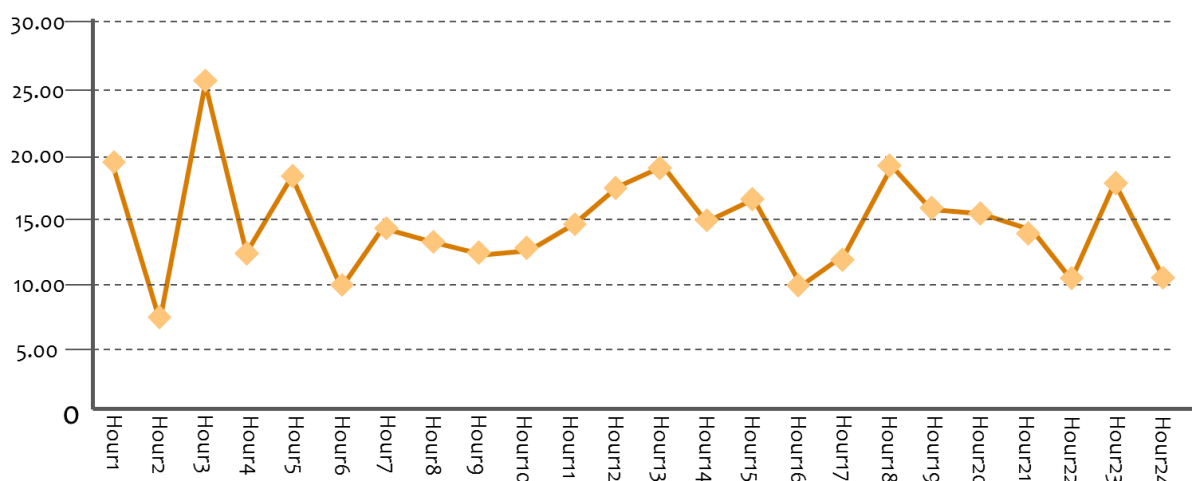
Monitoring the TMI over time together with ARPU, ARPPU, and In-Game Purchases, should if the theoretical basis of the model is sound:

   i)   Show a positive correlation in scatterplots between them;

   ii) Enable an average TMI basis to be derived above which monetisation is more likely;

   iii) Enable a banding structure to be built to help with forecasting revenues; and

   iv) Provide extensive input to help predict the revenues of future designs

The drilldown capabilities of this model would also provide extensive information in terms of understanding the efficacy of specific motivation components in relation to game monetisation. Beyond monetisation the same is true of any pairing in testing the correlation effects between for instance, knowledge acquisition and achievement, predicting quitters, predicting jump-off points, and much more.

With TMI it is now feasible to isolate a single motivational dimension and to understand its journey over the term of play. Questions (even urban 'myth' expectations) can be answered, such as:

- Does interest decline gradually over time? What specific motivator (or group of motivators) accounts for this decline? Can changes be made to reverse this trend? At what motivation should those changes be aimed?

- Can we predict the effect on motivation of the introduction of new in-game purchases (IGP)? Can we with cognizance impact negatively those motivations with the IGP knowing that the short term motivational decline will soon reverse to optimize our revenues?

- During design 'revenge' motivation was a key factor – did this turn out to be the case?

- When do players turn toxic? Could this be noted in advance? If TMI was tracked in real-time then intervention action be taken in advance reducing the impact of that toxicity;

- We can see from heatmaps that many players are drawn to a certain area – now we can go beyond speculation and more deeply understand the interaction of specific motives traced against these movements.

There are almost innumerable ways that tracking even this small spectrum of motives could be used to aid future designs and even in-game changes and enhancements.

7.1   TMI & BigData

It remains to discuss the data sizing for the TMI model. On the basis of up to 50 distinct input variable metrics of 100Bytes each per motivation per second of game play this is estimated to be 22.4GB per customer, player or user per day depending on the design criteria and input factors. Clearly savings can be made but as an upper boundary this would mean a potential requirement for up to ~82TB per year of data for one game with 10 million players.

TMI Data Storage Requirements
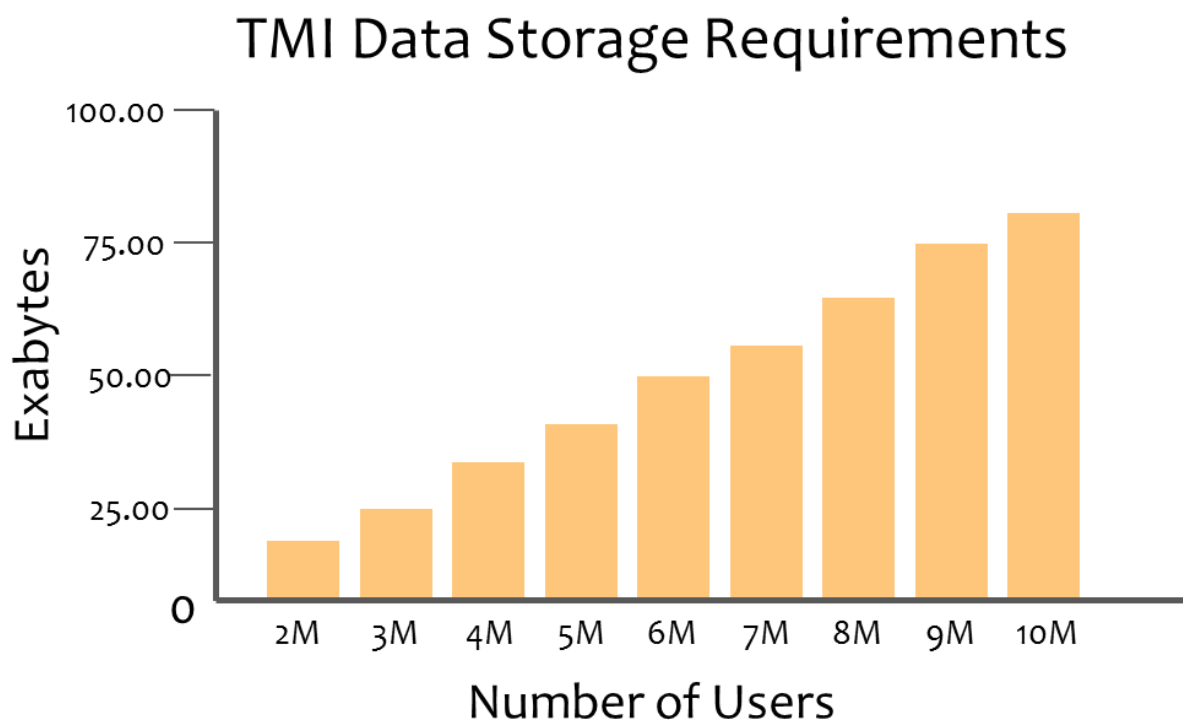
This is quite an amount of space and is recognizably infeasible today, especially to monitor activity in real-time. That said frameworks such as the TMI are becoming more common with deep concentrations of activity on the behavioural and psychological aspects of games in the videogame industry. The key for a concept such as the TMI is to engage beyond just videogames and to some such framework as a means to help in the design of gamification initiatives from the outset. BigData makes a big difference to what can be feasible in the future and I look forward to a time when dealing with exabytes of data in real-time becomes childs play.

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