Data Governance Gamification

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Abstract

This article discusses the application of gamification mechanics to data governance implementations. It outlines the goals of data governance, particularly in the context of data warehousing, and introduces the concept of gamification. It then explores five key motivators and shows how each would be addressed by a gamified governance program.

Ten gamification mechanics are discussed with notes on how each relates to data governance. A hypothetical gamified governance program is described in story form, including notes on its practical application. The article concludes by advocating a gamification approach as part of a cultural trend to engage a younger generation of business users who have been raised on games as an integral part of their lives.

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Introduction

> When governments, businesses, and organizations of all sizes and types embrace game thinking and mechanics, they are better able to engage their audiences, cut through the noise, drive innovation, and ultimately increase their revenue.
> —*The Gamification Revolution*

Building a data warehouse is a large and challenging undertaking for any organization. One of the biggest challenges involves ensuring the accuracy of the information that is presented to end users. This requires data governance, including:

- Governance of the **business metadata**, including the names of terms being used, ensuring they are accepted across the enterprise, and that they conform to a naming standard (including work order, class words, and standardized abbreviations)

- Governance of the **definitions** applied to those terms, such that they are meaningful, unambiguous, and well-formed

- Governance of the **data architecture**, so that the information integrity remains sound and users can access it with relative ease and confidence

- Governance of the **data content**, ensuring that the information conforms to business rules and meets standards of completeness and correctness

Data governance can be a dry and time-consuming affair, frequently necessitating lengthy committee meetings and careful maintenance of lines of communication between business users and IT staff. Typically, the list of data elements to be processed with names, definitions, and business rules is longer than a program can deal with in advance of a data warehouse development effort. As a result, governance may be conducted in parallel, creating inevitable rework as late-arriving governance changes are enacted.

Gamifying data governance is about working to motivate employees to actively engage in the process and employing ideas from games to do so.

This article proposes an alternative to the traditional committee approach to data governance based on the gamification movement as articulated in such books as *The Gamification Revolution* (Zichermann and Linder, 2013), *Loyalty 3.0* (Paharia, 2013), and *Nudge* (Thaler and Sunstein, 2009). Gamification involves mechanics that help motivate and incentivize participants to perform a set of tasks. This article draws from the ideas of these books with regard to gamifying business processes in general, and applies them specifically to the activities involved in data governance.

Applying concepts from games to achieve business goals is an ancient idea. Contests have been used extensively as a marketing tool for decades, eliciting an outpouring of creative public participation for everything from breakfast cereal to the design of national monuments. More recently, technology has opened up possibilities for customer loyalty programs, where people gain points for purchases and receive special offers and perks when certain levels are achieved. Educational applications are also using gaming conventions to help motivate users. An excellent example of this is Duolingo, which helps users learn a language while encouraging them with points, achievement levels, and rankings against friends.

Here is a breakdown of a potential gamified data governance program:

- **Overall concept.** The responsibility for data governance is taken on by the business user community as a whole. The process is gamified to set group targets and monitor the progress of the program through measurable sets of activities and milestones.

- **Goals.** The data governance initiative strives to improve the quality of business data by establishing policies and rules to be applied to the data and measured and monitored on an ongoing basis. The program will also work to improve the collective knowledge and understanding of that information by business users across the enterprise by involving the community in creating, assessing, and utilizing the business metadata.

Motivators

Gamifying data governance is not about making a game out of the governance process for the entertainment of employees. It is about working to motivate employees to actively engage in the process and employing ideas from games to do so. In *Loyalty 3.0*, Rajat Paharia identifies five key motivators:

Autonomy. For broad acceptance, it is essential that data governance not be imposed upon the business user

community. As a gamified process, the responsibilities are shared across the user base, with individual responsibility to create content and the ability to give feedback responses actively influencing the outcomes.

Mastery. There is a certain degree of skill involved here, particularly in the tasks related to lexicography, that is, forming the definitions of terms. Making these concise and meaningful to a range of users can be difficult and requires considerable communication skills. Similarly, crafting policies and rules to ensure the integrity of data also requires discipline and attention to detail. Getting it right will involve the mastery of the processes involved.

Purpose. The purpose is built in. Data governance is already a necessity; gamification is a means of driving the process forward. The ultimate goal is to improve the business, optimizing the data assets at hand to increase return on investment. Gamifying the program also arms management with levers to target specific subject areas, such as customer information and marketing-campaign-related data. The program can be tuned to meet both strategic and tactical goals as required.

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Progress. Gamification mechanics enable the program's progress to be measured. Each participant can see the extent of his or her individual contribution, as well as the entire community's progress toward the ultimate or immediate goal. Progress can be seen in different terms depending on management objectives such as short-term sprints, specific sets of terminology, alignment with data warehouse releases, or targeted business units. This stands in stark contrast to the never-ending list of business terms that the governance council addresses on a weekly basis in many programs, where the distance from the end goal can be difficult to determine.

Social interaction. In the context of data governance, this aspect relates to business users working together toward a common goal within business units, across lines of business, and between business and IT. Technical and business understanding of the data is involved, and an understanding of the data life cycle—from data entry to business intelligence—will need to be communicated. Everyone must be engaged and participating for the information to be entered correctly and trusted when it is used. The gamified data governance program encourages communication between users, employing both cooperative and competitive gaming mechanics.

Gamification Mechanics

Gamification mechanics are the methods by which gameplay concepts are applied to other spheres of activity. *Loyalty 3.0* identifies 10 different mechanics, which we'll discuss in relation to a gamified data governance program. Each of these mechanics combines a number of the five key motivators just listed.

Fast feedback. Users receive immediate response from their actions. In our governance program, users gain points by contributing data definitions to the business glossary, reviewing and/or correcting existing definitions, and stewarding accurate data with defined policies and business rules to ensure data integrity and usability. Conversely, users are penalized for poorly written definitions, non-standard names, and inaccuracies in data for which they have stewardship responsibility. More than just points, the process is interactive across the program; names and definitions are assessed and receive an active response from other users.

Transparency. Transparency is about making the process clear to everyone. Users can view graphs and reports to see their level of achievement, which activities have had the greatest impact, and how their contributions to the program compare to the wider community.

Goals. With the motivator of purpose in mind, the goals can be both immediate and long term. Users are invited to set personal goals as well as respond to individual and group challenges. Goals can include setting a certain number of definitions, mapping a set number of sources

to targets, completing business rules, or achieving metrics on data quality.

Badges. Badges are essentially a public sign of achievement. Users are awarded them for reaching levels of data quality, for their active participation in the data governance program, and for specific achievements. These badges can be displayed on Intranet sites, posted on the walls of cubicles or lunch rooms, and embedded in e-mail signatures. Some of the badges are advertised and the criteria to win them clearly articulated; for others, their existence is made public, but the means to achieve them remains hidden; still others are kept secret and awarded as a surprise.

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Leveling up. Both individually and as teams, users are taken through levels of participation and achievement based on scores and badges. Although climbing levels should initially be quite simple (e.g., level 1 to 2 requires the user to add five new data definitions), each subsequent level will be increasingly difficult to achieve (e.g., level 2 to 3 might require 10 new definitions). Management defines the objectives of the program, so the levels can correspond to these goals. A level can be defined as being a domain of information (for example, customer information), the completion of a set of policies (business rules have been applied to all vendor address information), or achieving a level of data quality (99.9 percent of customers have an identified representative).

Onboarding. Business users will join and leave the program over time. New users must be able to join as easily as possible. The onboarding process will introduce users to the tools, conventions, and processes involved, as well as the data governance program applications: enterprise business glossary, data profiling tools, and dashboards to monitor data integrity. Users will need to become conversant with naming and definition conventions and how business rules are applied to information. This is done in the context of the gamified program, incrementally showing users how to gain points and win badges.

Competition. Users can see the leaderboard of the most productive people in the company or by line of business (or any other group) as well as their particular placement in the ranking of the program and the ranking of all other participants. Individual and group scores show users their level of contribution to the program. In this way, the program utilizes both competitive and cooperative drivers.

Collaboration. The whole data governance program works toward the same collective goal. The collaborative nature of the work can be underlined by identifying end-to-end data governance needs by project. Just as testing of development work must be conducted by a third party, the crafting of definitions and rules must be checked and confirmed through reviews and testing. It will take a multi-disciplinary effort to ensure that the program works.

Community. The idea of community in this context is about the visibility of everyone's work. Too often, work is pushed off from one group of business users to another or from business users to the IT department. Here, everyone sees the work that everyone else is doing. It becomes clear to everyone, management and users alike, who is pulling their weight and who is dragging the process down. If someone needs help, the community can pitch in.

Points. Points are awarded and deducted; they show individual and group status and can be redeemed for rewards. This provides the fast feedback mentioned earlier and supplies the measurable result that is key to determining the progress and effectiveness of the program.

A Gamified Data Governance Story

A story about a hypothetical gamified data governance program will best illustrate how this approach might be put into action. (Note: The concepts of ideators, collaborators, and connectors were drawn from *The Gamification Revolution*.)

NE Corp. had a problem with their business users' understanding of business terminology. Over the past five years, NE had launched a number of initiatives to define business terms within an enterprise glossary, but there had been little engagement from users, and the definitions produced were either poorly written or not accepted by the general community.

Mistakes and miscalculations were costing the organization millions of dollars annually. Terms were ambiguously defined, leading to the wrong data being used for reporting. Policies regarding what constituted complete and accurate information were absent, and rules to measure and continually monitor the quality of data were not in place.

Participants in the governance initiatives cited several causes for their failure. The cleanup task was daunting, with thousands of terms to be defined, policies and data quality rules to be established, and links to where terms appeared in databases to be identified. The connections between the data stewards who "owned" the domain of information, the business users who produced and consumed it on a daily basis, and the information technology staff who managed it were weak or nonexistent.

Management knew they needed to try something innovative to fully engage users in the process across the spectrum of stakeholders. Enter Gamified Data Governance (GDG): a gamified approach to data governance.

With GDG, the governance of information was taken on by a wide set of information producers and consumers.

The program had three sets of participants:

Ideators. This group consisted of data stewards responsible for drafting the definitions, policies, and rules that governed the data. Ideators could see lists of complete and incomplete terms. Their focus was on lexicography and the data dictionary aspects of the business metadata.

Collaborators. These business users worked with the metadata generated by the ideators. Their role, within the context of the program, was to review and score the work the ideators produced. They also provided feedback on the connectors' work when mistakes were found. Collaborators saw lists of reviewed and un-reviewed terms based on terms with completed definitions. Their role was to ensure that names and definitions were accurate and meaningful. They provided feedback on the ideators' work.

Connectors. These IT personnel were responsible for linking data assets to the terms. Connectors saw lists of terms with numbers of attached data assets by source system. The data assets were part of operational systems as well as the data warehouse, MDM system, and data marts, among other sources.

The gamification mechanics of GDG involved participants earning points through one of the three sets of activities. Ideators earned points by defining terms, policies, and rules; collaborators earned points by reviewing and rating the terms' definitions; and connectors earned points for each data asset mapped to a term.

Levels of achievement were awarded based on points earned. For example, ideators received 1 point per definition. Level 1 was reached when a participant amassed 5 points, Level 2 required 15 points, Level 3 was set at 30 points, and Level 4 required 50 points.

Badges were awarded to individual participants based on the completion of certain units of work. These units were based on a subject area domain of terms (e.g., customer, account, organization).

Trophies were awarded for cross-group achievements, such as a set of customer information having a complete set of reviewed term definitions with source and target data assets attached.

Individuals worked within defined team groupings. Leaderboards were displayed at both the individual and team level.

The GDG program appeared as a Web page to participants, displaying personal and group scores as well as achievement levels, badges, trophies, and leaderboards. The scores were drawn from calls to the business glossary metadata. Each activity, such as the addition of a term, the definition of that term, or the inclusion of a business rule, triggered the game engine to add a point to the user's running score. The GDG program was customizable and permitted a given participant to perform more than one role.

The program was run in six-week sprints, each of which had a defined scope of terms to be included. Scopes coincided initially with the releases of the MDM program and later with iterations of the data warehouse, the GDG program being integral to the quality of both products. The limited timelines helped to focus the energies of participants and give a sense of closure to each sprint, even though the overall work entailed a much longer time period.

The success of the GDG program was measurable. Engagement from the participants was high, and with peer review included, the quality of the ideators' work quickly achieved and maintained a high standard. The attention and collective engagement focused on the work led to a higher than anticipated adoption of the business glossary for all stakeholders, and there was a marked improvement in data quality adherence to policies and rules.

Summary

The authors of *The Gamification Revolution* point out that the millennial generation demands this type of gamified engagement in the workplace and that business will ignore the gamification of its processes at its peril. *Loyalty 3.0* calls out gamification as a trend spanning all industries, including healthcare, banking, retail, telecommunications, education, and government, specifically relating to the loyalty of employees.

There is evidence of a widespread cultural shift toward gamification. Look at the gamified mechanics of electronic readers, the collection of "likes" conferring status on Facebook, and the loyalty programs of cafés, cinemas, and grocery stores. This shift is having an impact on industries of all types and presenting new challenges to harness the torrent of gamified data.

The cultural movement toward gamification also offers fresh opportunities to engage and motivate employees, many of whom come from a generation raised on the interactivity of new media.

Business must govern data. Information is piling up and must be addressed with discipline and rigor. Traditional methods and organizational structure may not garner the level of participation required to be effective. Gamification does not trivialize this work, nor will it necessarily transform the sometimes tedious task of governing data into entertainment. However, people perform better when they are motivated, and gamification mechanics can provide that motivation. Gamification offers a way to ensure that the business wins. ■

References and Related Reading

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