Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Freiburg

Maurizio Caon & Maurizio Rigamonti - 2018

Game Design & Development

Gamification + Serious Games

Hes·so

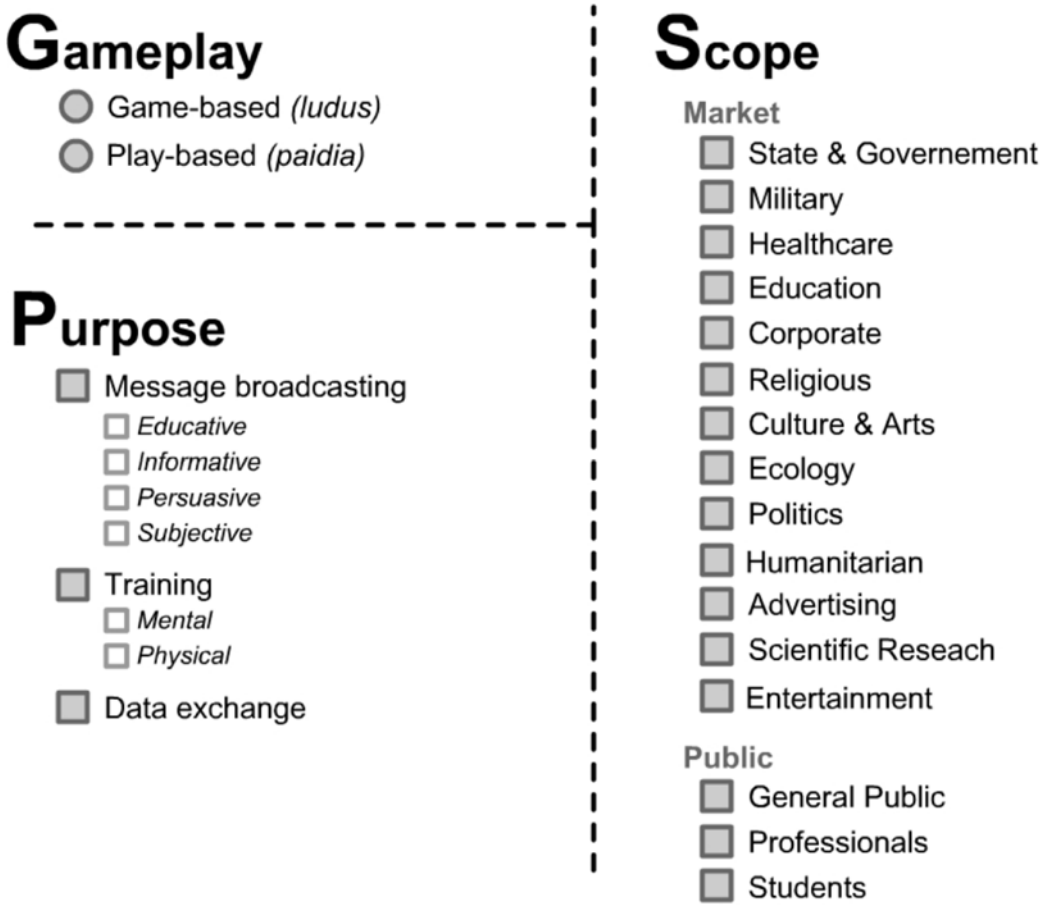
Serious Games Definition

- Serious games can be defined as “any form of interactive computer-based game software for one or multiple players to be used on any platform and that has been developed with the intention to be more than entertainment”.

Ritterfeld, U., Cody, M., & Vorderer, P. (Eds.). (2009). Serious games: Mechanisms and effects. Routledge.

G/P/S Model

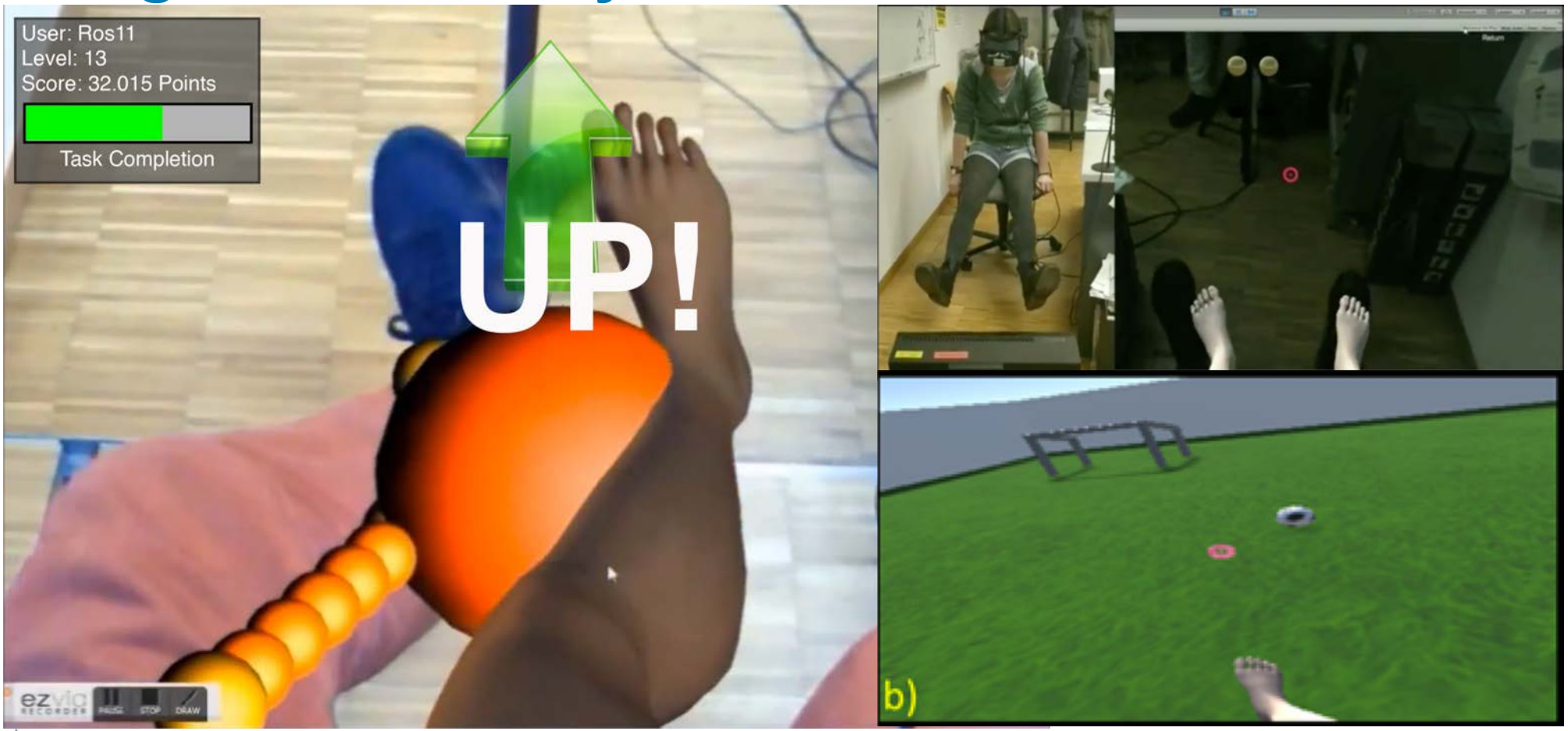
(Djaouti, Alvarez and Jessel, 2011)



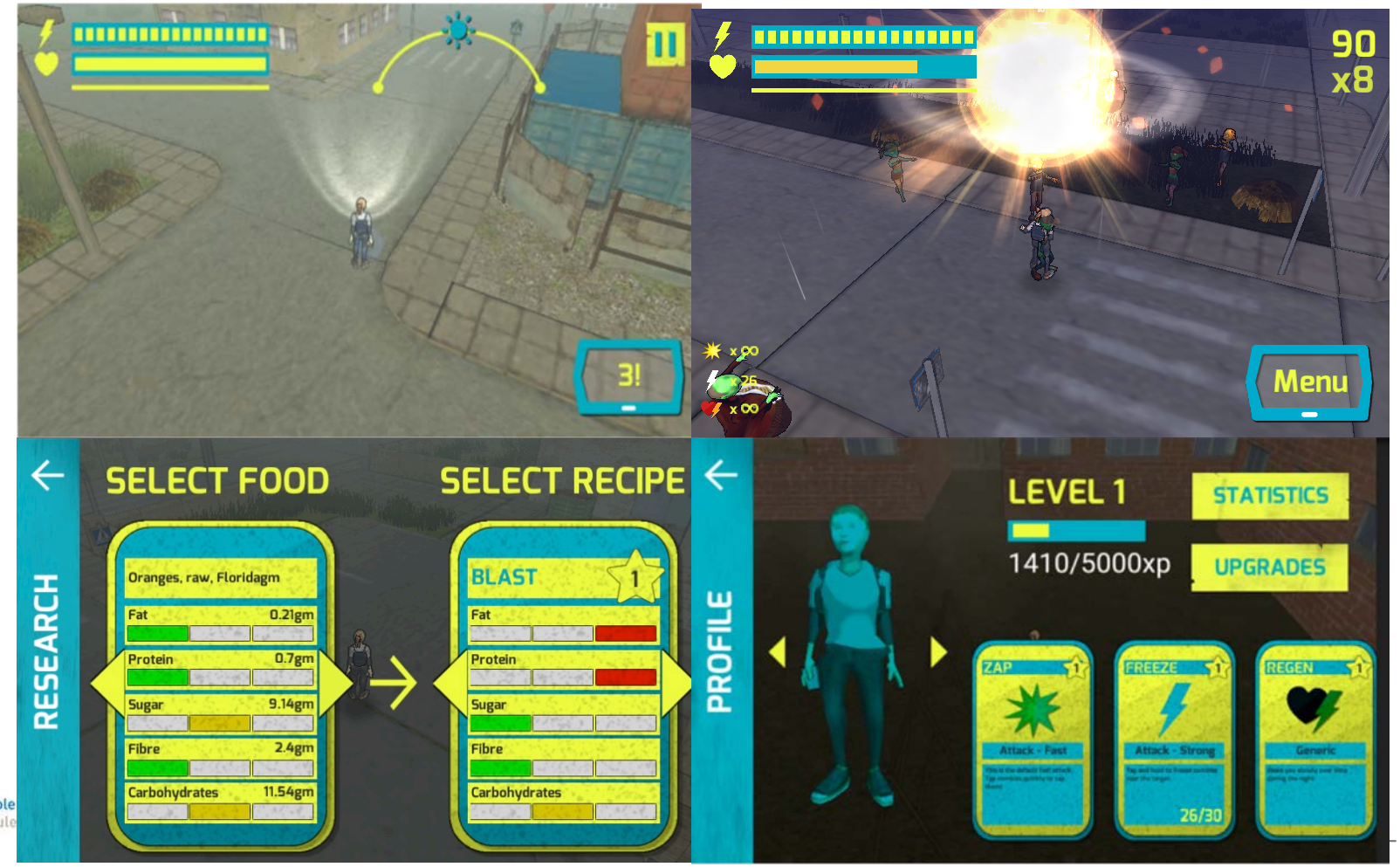
Serious game to fight cancer

Sparx: fight against depression

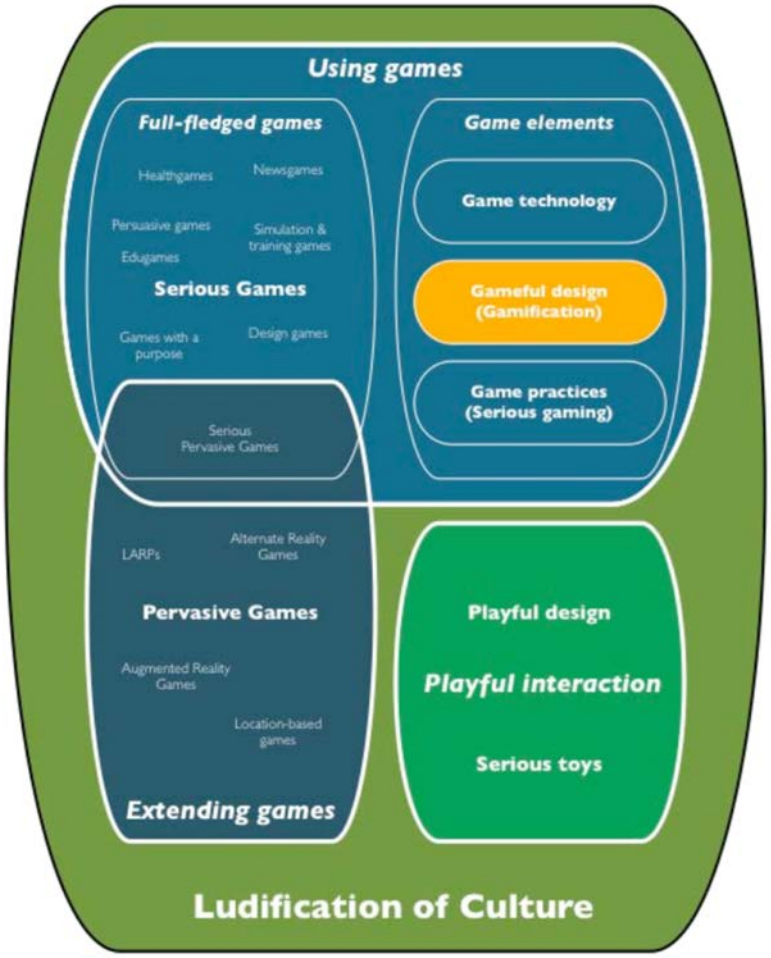
Augmented Reality to reduce Phantom Limb Pain



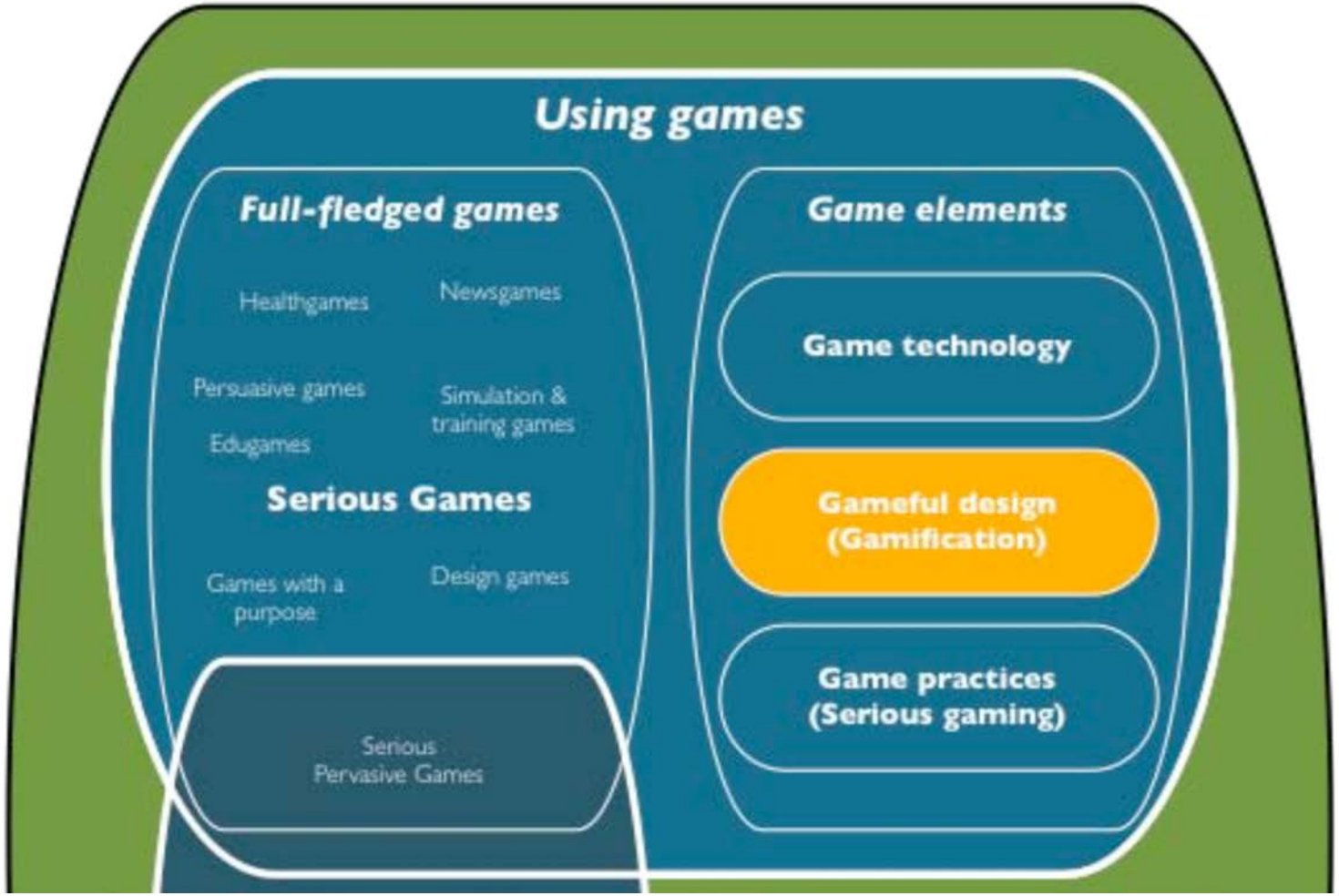
PEGASO game: promoting healthy habits



Ludification of culture



Situating Serious Games and Gamification



Gamification definition

- Gamification is “the **use of game elements** in **non-game contexts**”.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining gamification. In Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments (pp. 9-15). ACM.

Explaining the definition

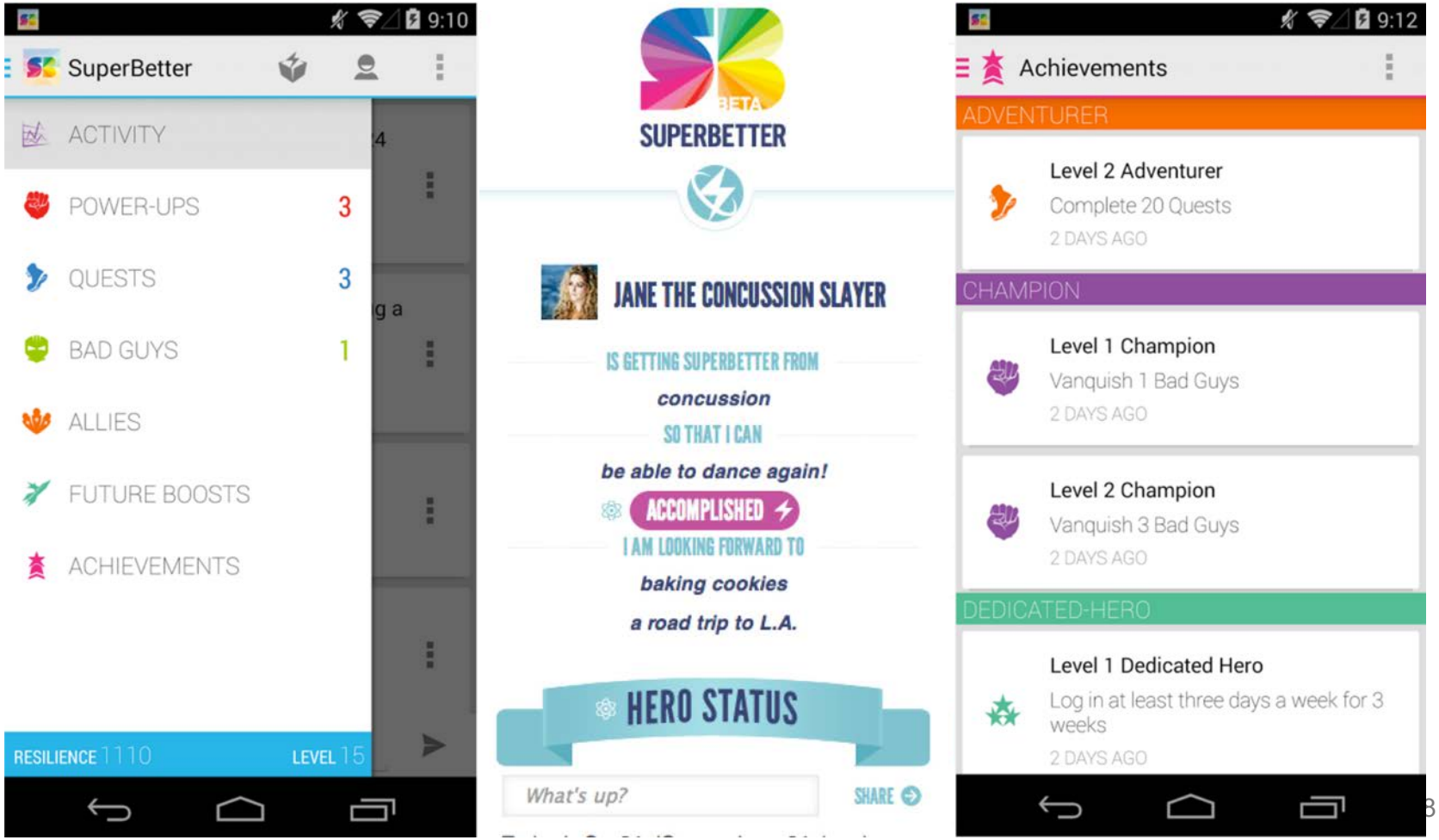
- Game elements: toolbox composed of points, badges, leaderboards, quests, resource collection, avatars, social graph, progression, levels
- Game design techniques: more than just elements, purpose of being fun, engineering + artistic approach, a way of thinking
- Non-game contexts: the purpose is something outside of the game

Gamification example: fitbit

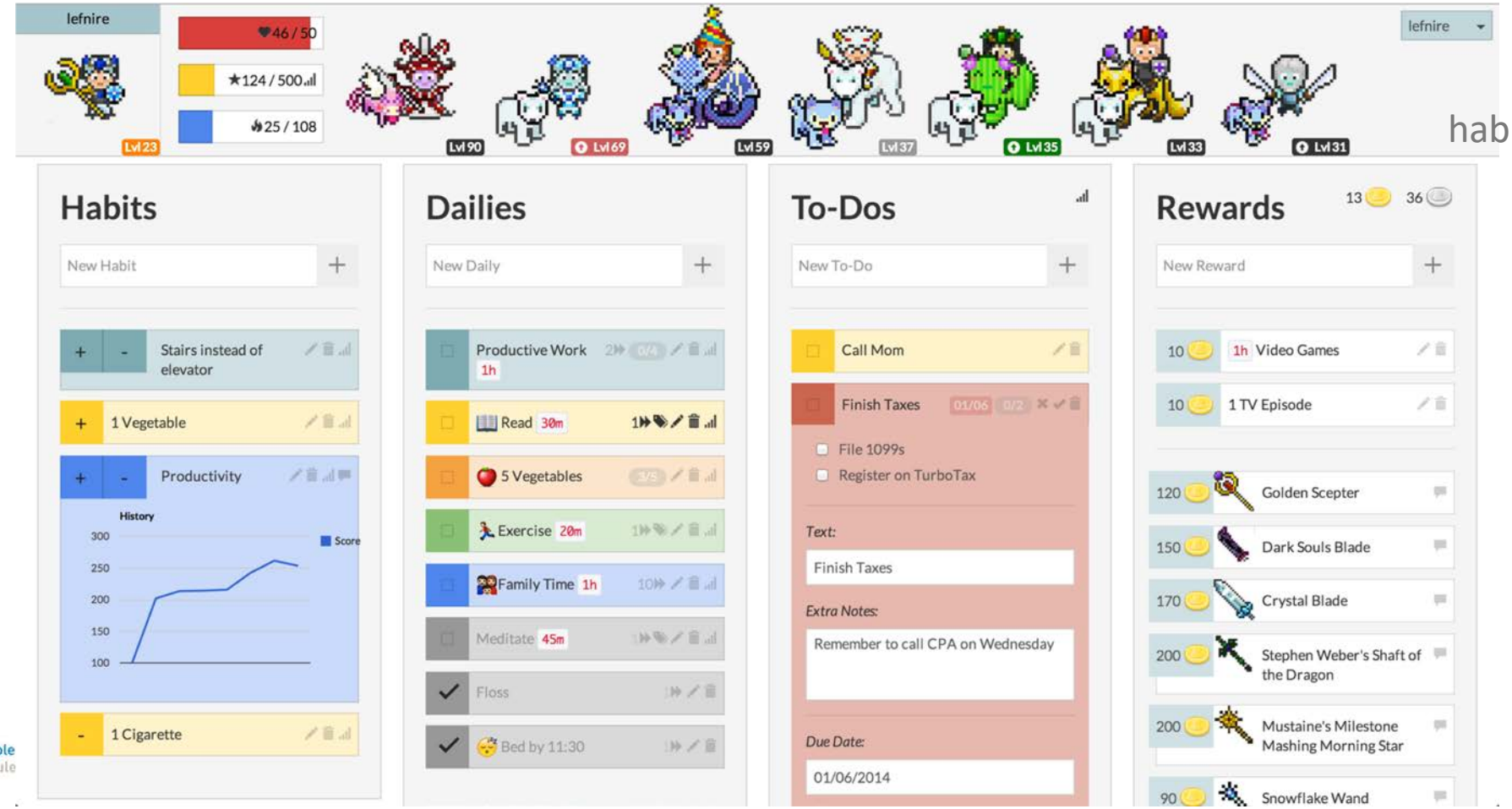
Gamification example: fitbit mobile

www.fitbit.com

Gamification example: SuperBetter

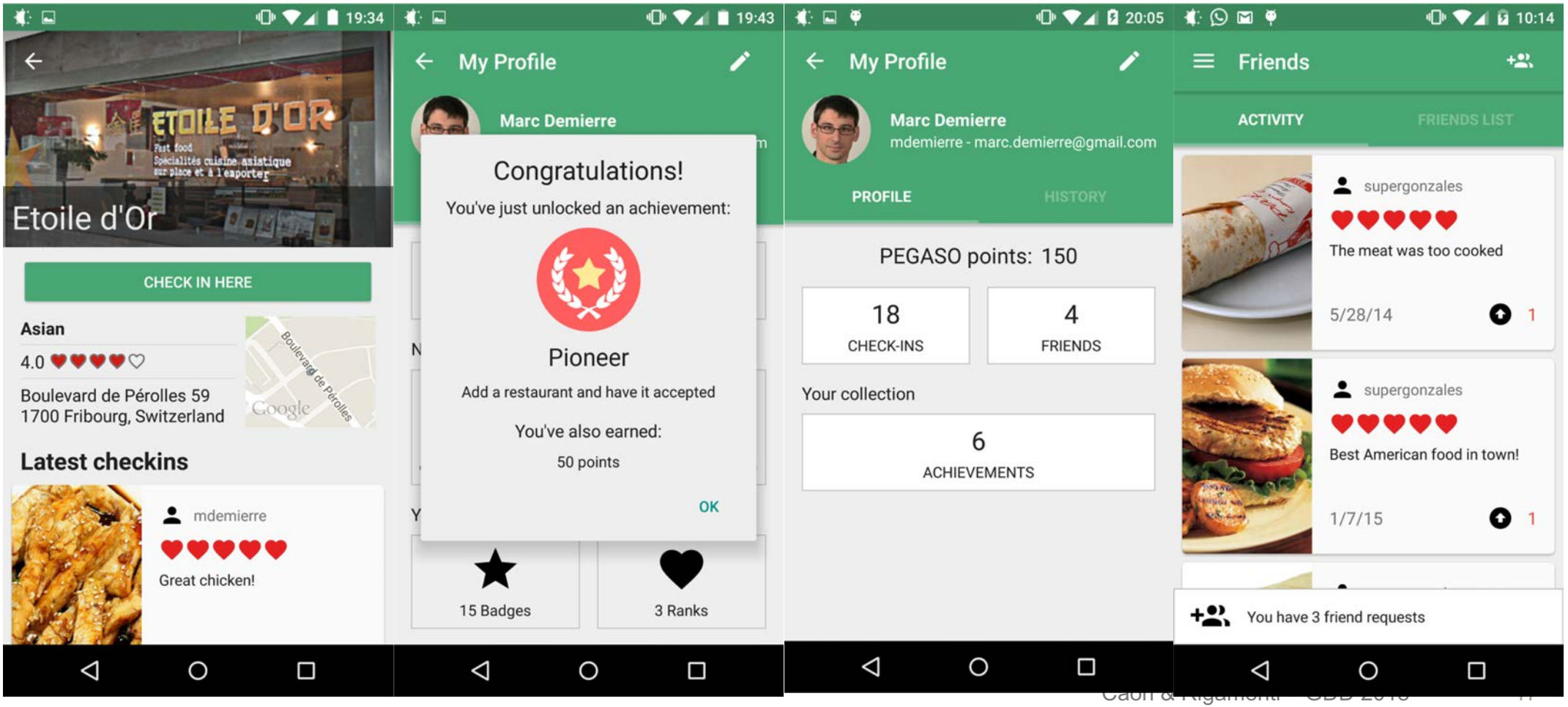


Gamification example: Habitica

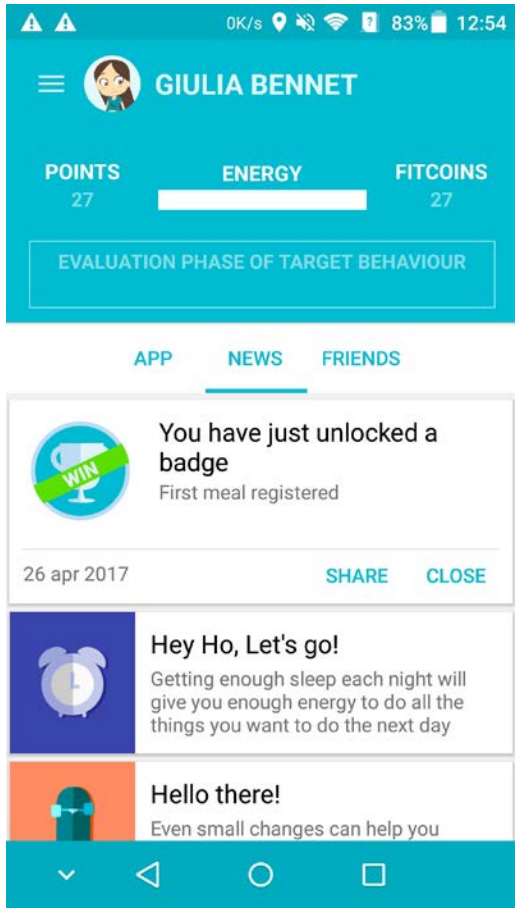


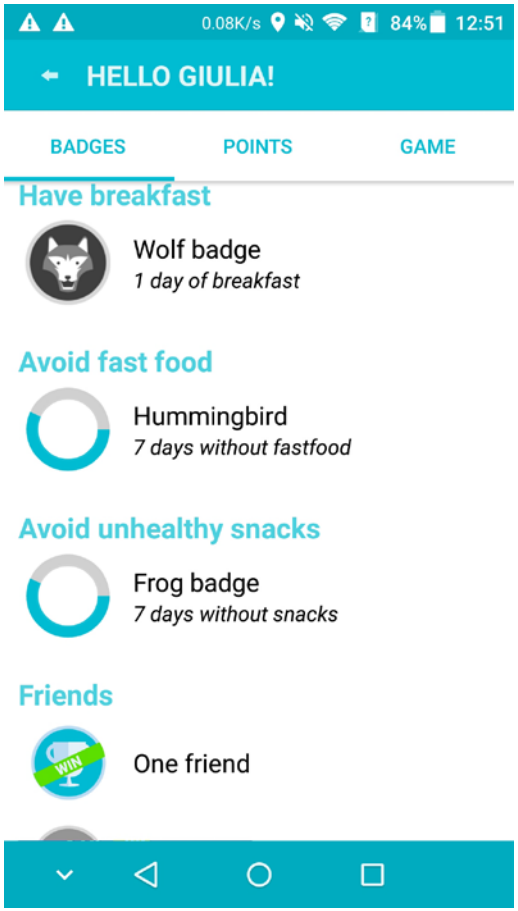
habitica.com

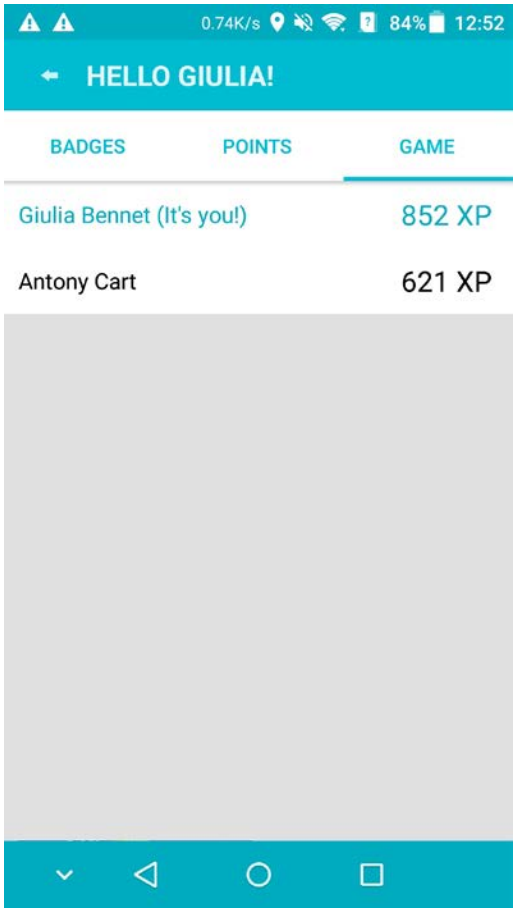
Gamification example: PEGASO HealthSquare

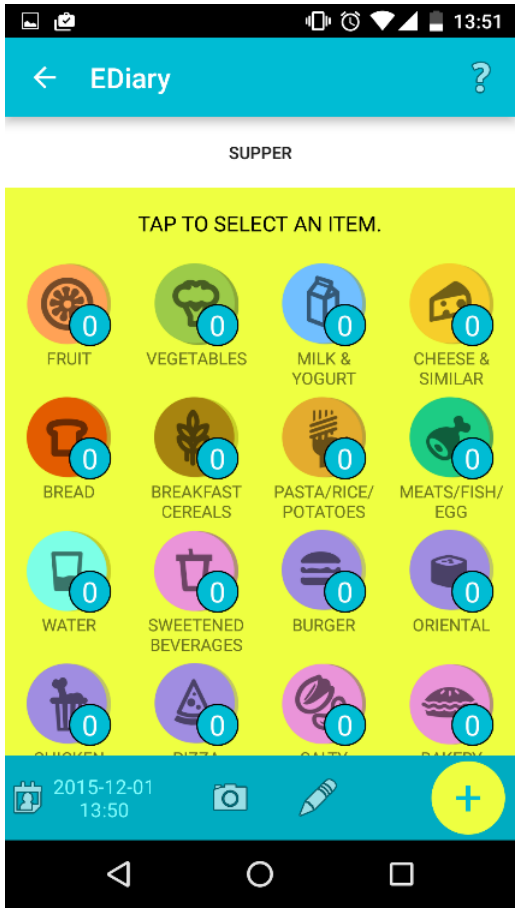


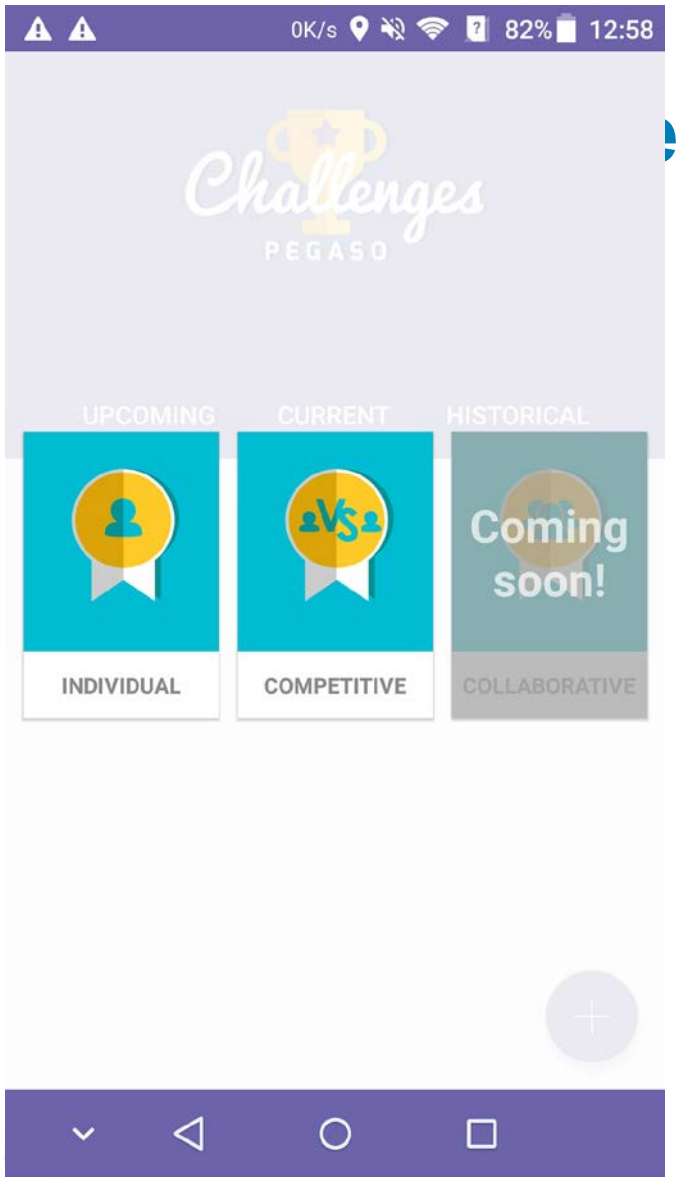
Gamification example: PEGASO Companion

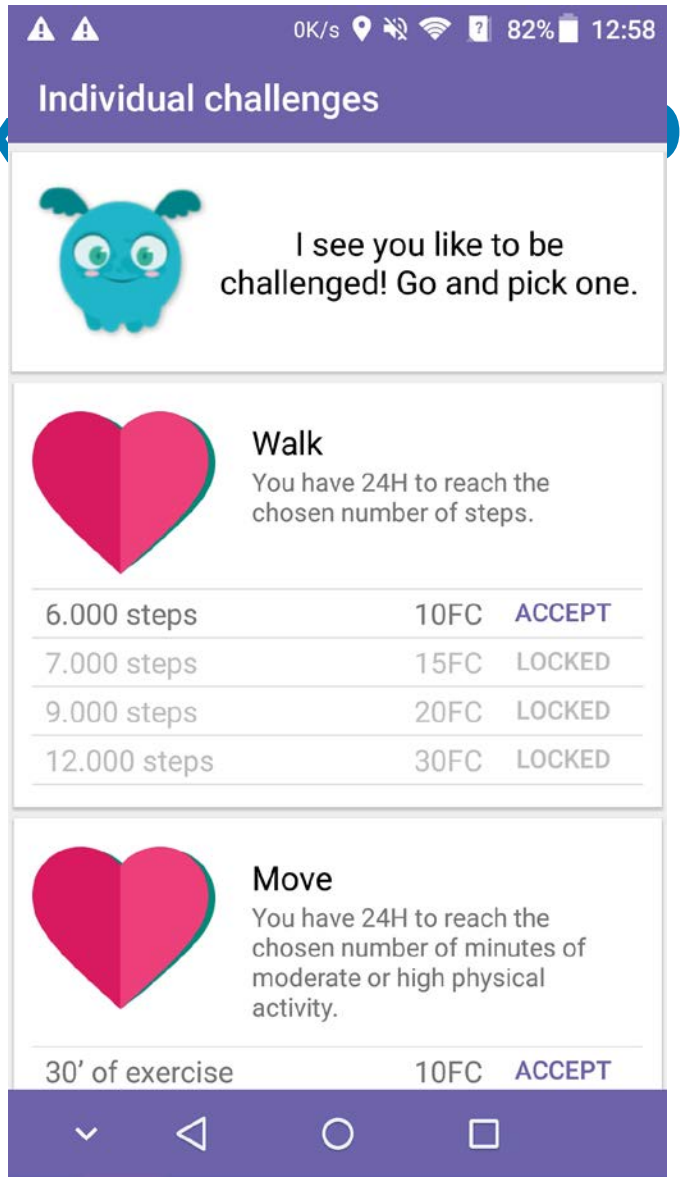


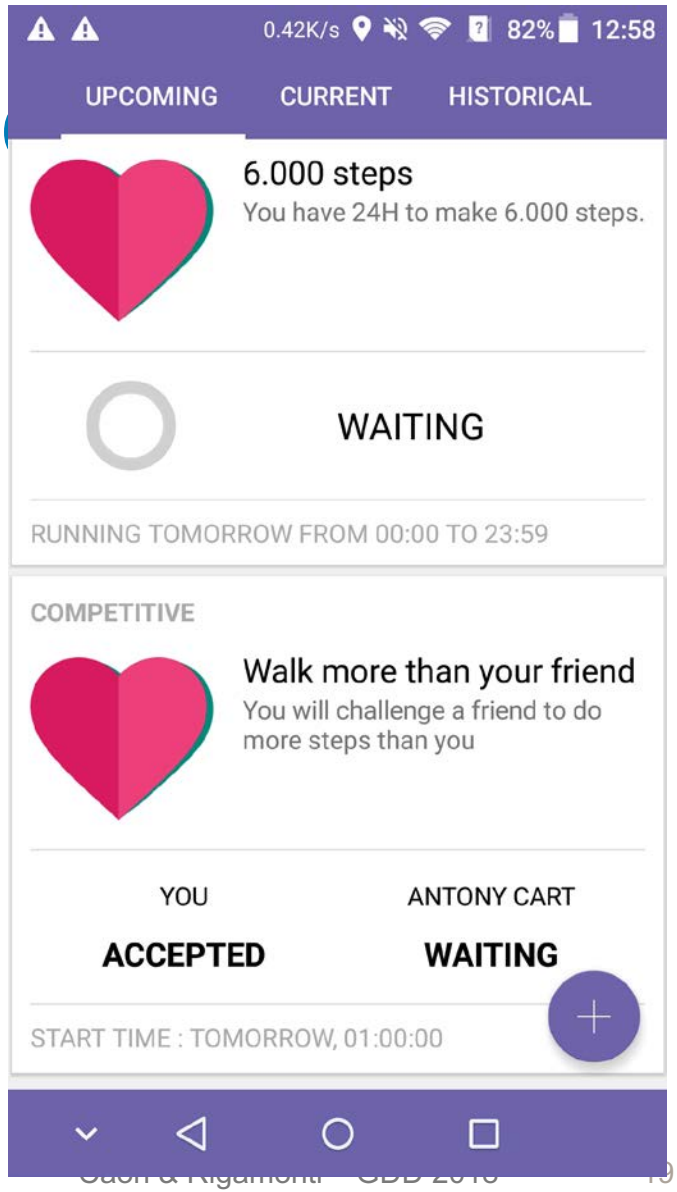


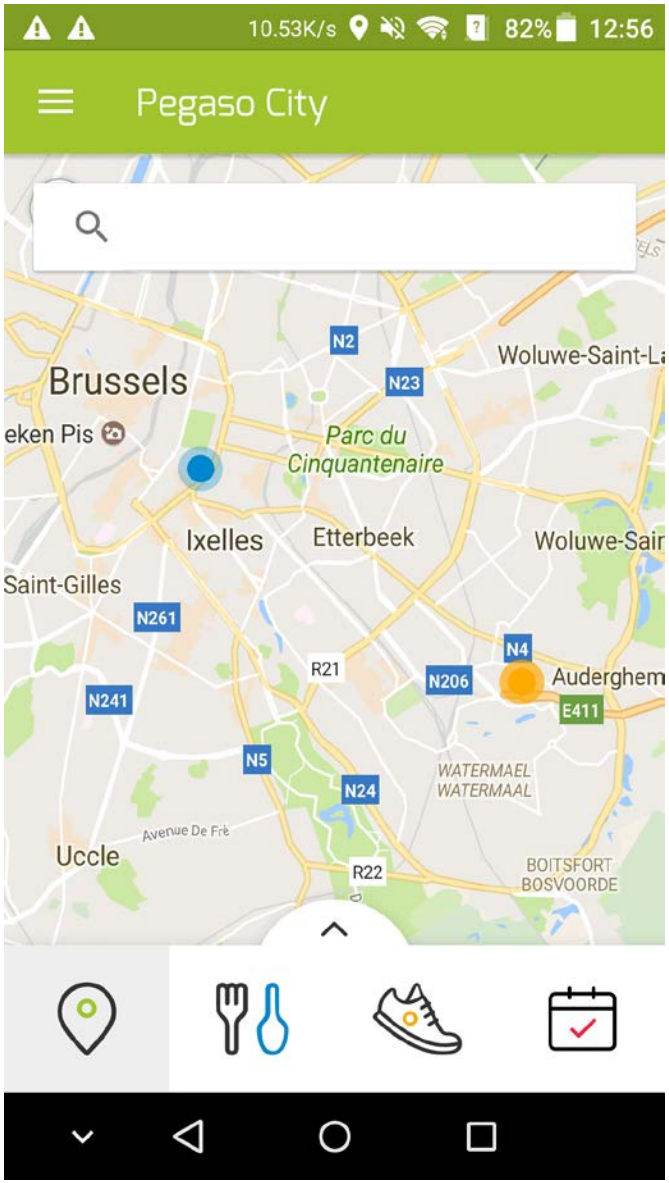


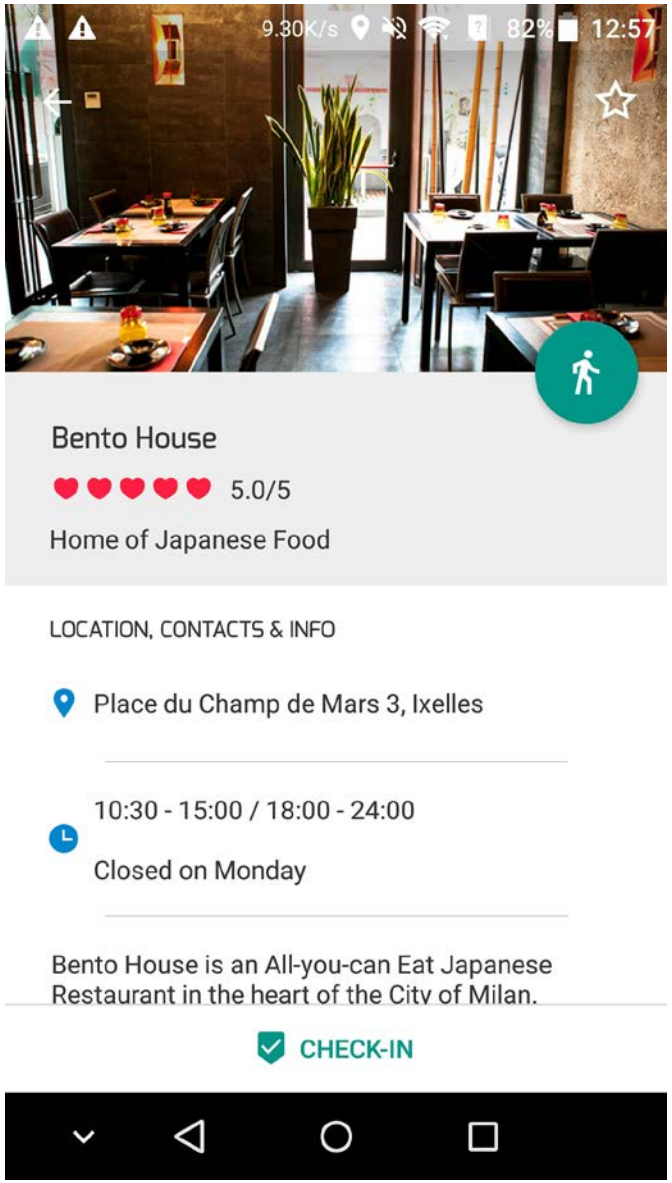


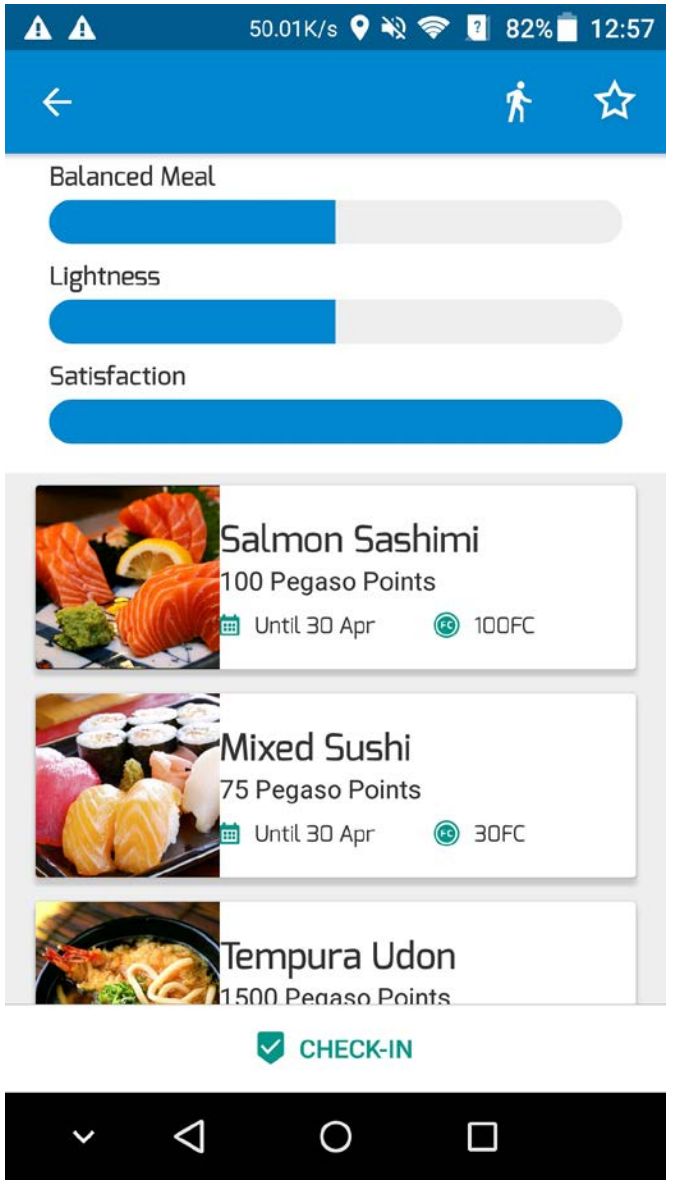

0K/s 82% 12:58
Challenges
PEGASO
UPCOMING
CURRENT
HISTORICAL
INDIVIDUAL
COMPETITIVE
Coming soon!
COLLABORATIVE


0K/s 82% 12:58
Individual challenges
I see you like to be challenged! Go and pick one.
Walk
You have 24H to reach the chosen number of steps.
6.000 steps 10FC ACCEPT
7.000 steps 15FC LOCKED
9.000 steps 20FC LOCKED
12.000 steps 30FC LOCKED
Move
You have 24H to reach the chosen number of minutes of moderate or high physical activity.
30' of exercise 10FC ACCEPT

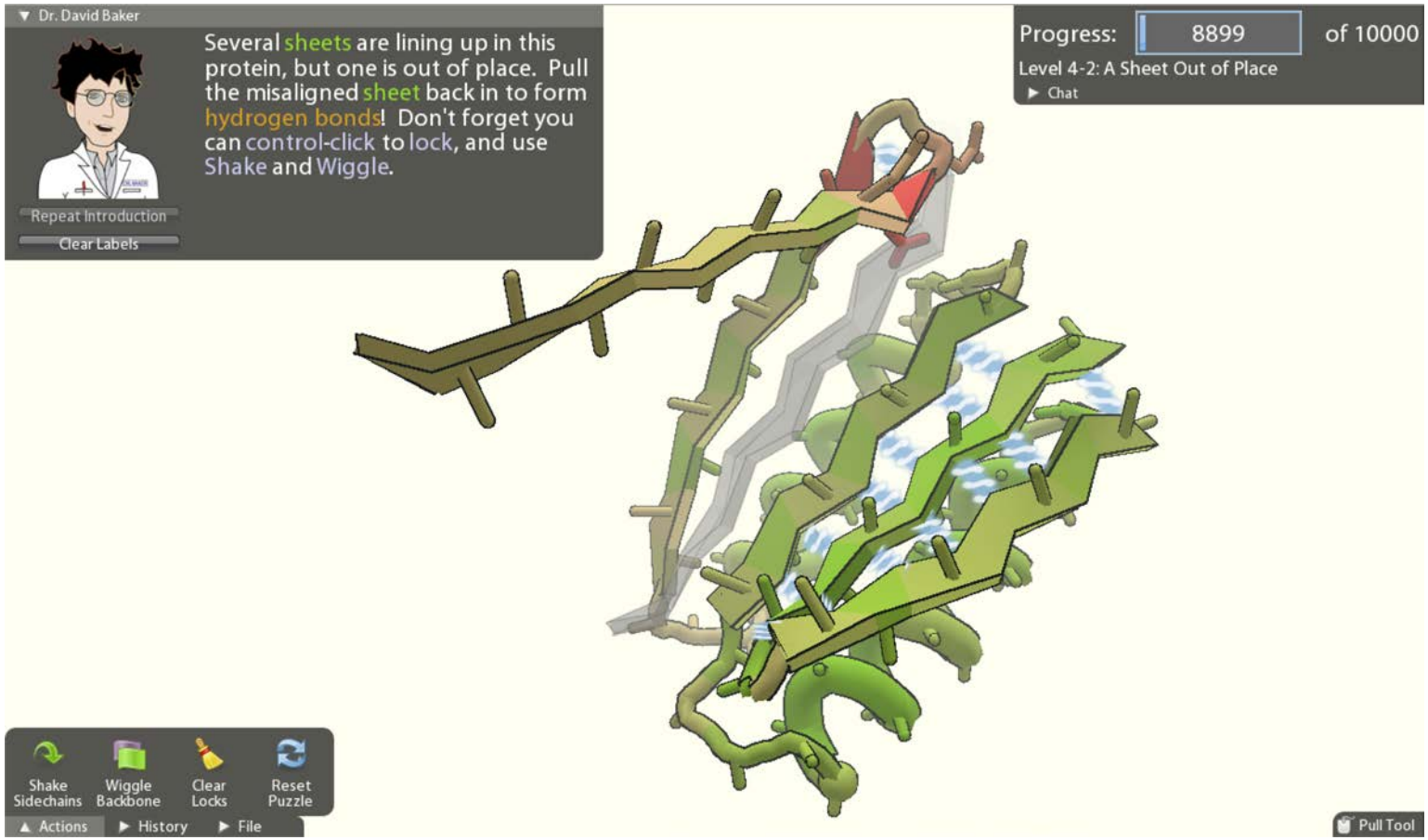

0.42K/s 82% 12:58
UPCOMING
CURRENT
HISTORICAL
6.000 steps
You have 24H to make 6.000 steps.
WAITING
RUNNING TOMORROW FROM 00:00 TO 23:59
COMPETITIVE
Walk more than your friend
You will challenge a friend to do more steps than you
YOU
ANTONY CART
ACCEPTED
WAITING
START TIME : TOMORROW, 01:00:00


10.53K/s 82% 12:56
Pegaso City
Brussels
Woluwe-Saint-La
N2
N23
eken Pis
Parc du
Cinquantenaire
Ixelles
Etterbeek
Woluwe-Sair
Saint-Gilles
N261
N4
R21
N206
Auderghem
N241
E411
N5
N24
WATERMAEL
WATERMAAL
Avenue De Fré
Uccle
R22
BOITSFORT
BOSVOORDE


9.30K/s 82% 12:57
Bento House
5.0/5
Home of Japanese Food
LOCATION, CONTACTS & INFO
Place du Champ de Mars 3, Ixelles
10:30 - 15:00 / 18:00 - 24:00
Closed on Monday
Bento House is an All-you-can Eat Japanese
Restaurant in the heart of the City of Milan.
CHECK-IN


50.01K/s 82% 12:57
Balanced Meal
Lightness
Satisfaction
Salmon Sashimi
100 Pegaso Points
Until 30 Apr
100FC
Mixed Sushi
75 Pegaso Points
Until 30 Apr
30FC
Tempura Udon
1500 Pegaso Points
CHECK-IN

Gamification Example: Foldit



Areas where gamification can add values

- External
  - Marketing
  - Sales
  - Customer engagement
- Internal
  - HR
  - Productivity enhancement
  - Crowd sourcing
- Behavior change
  - Health and wellness
  - Sustainability
  - Personal finance

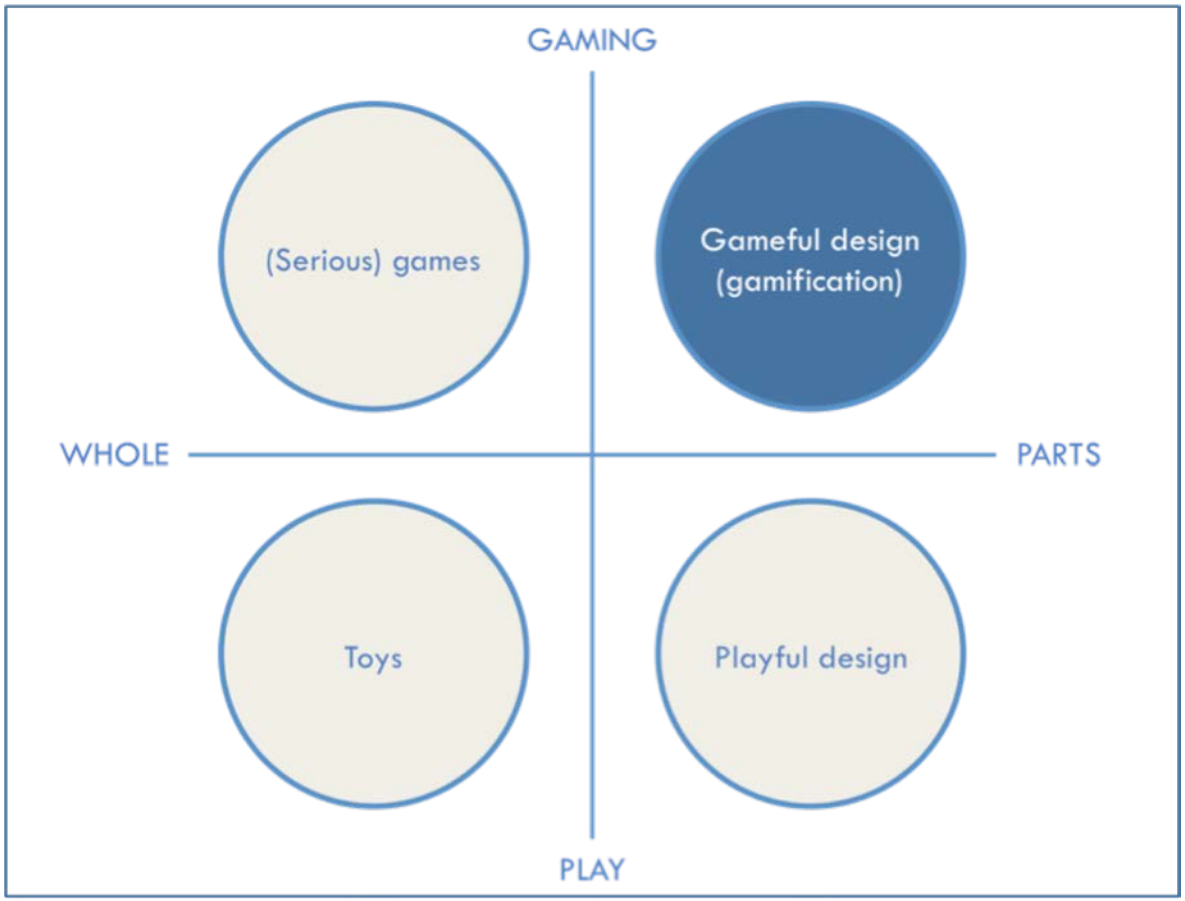
What is NOT

- Gamification is NOT turning everything in a game
- Games used in a business context as for example to sell more is NOT gamification
- Gamification is NOT serious games
- Gamification is NOT just for marketing or PBLs (Points Badges Leaderboards)
- Gamification is NOT game theory, which is a set of algorithms to analyze strategic decision making

Gamification is about

- Listening to what games can teach us about engagement
- Learning from game design (and psychology, marketing and economics – things about motivation and human behavior)
- Appreciating **FUN**

Gamification VS Serious Games



Gaming Vs Play

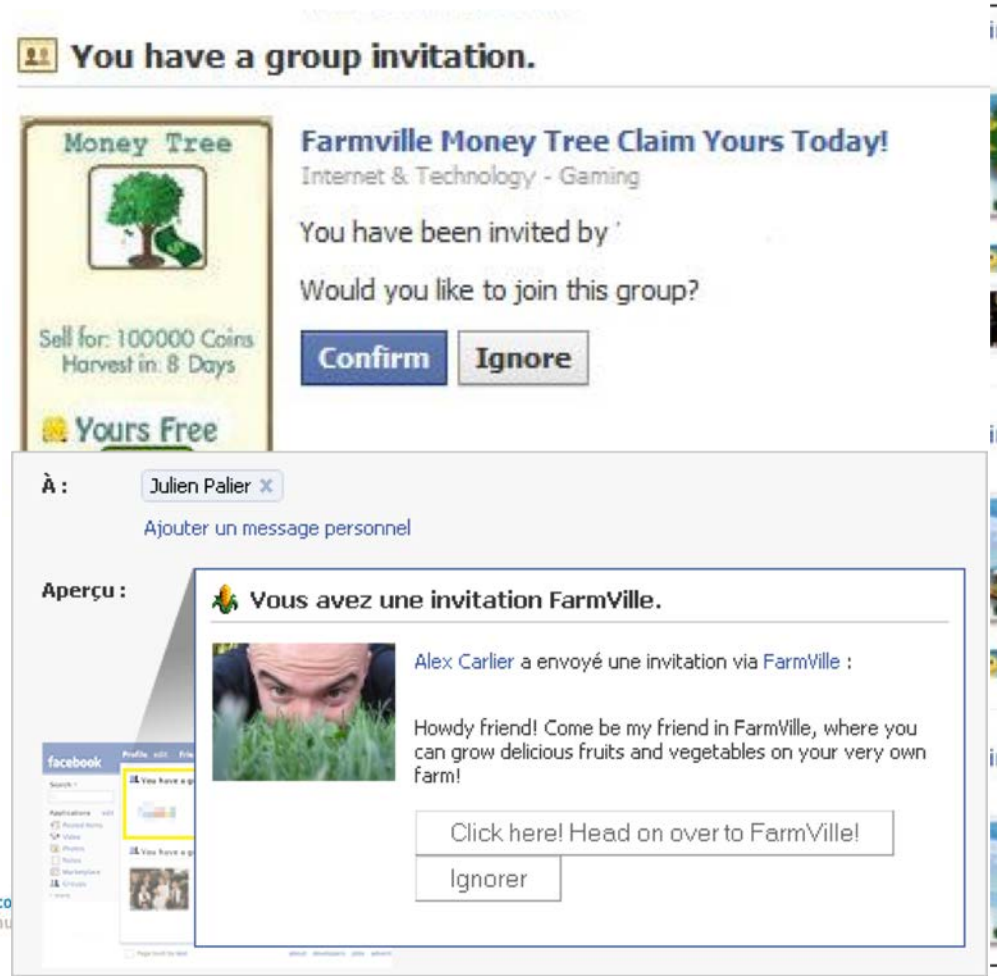
- Play exuberant energy, activity for its own sake
- Gaming is a series of meaningful choices to obtain an outcome, there are rules where the problem solving is the activity and it is playful

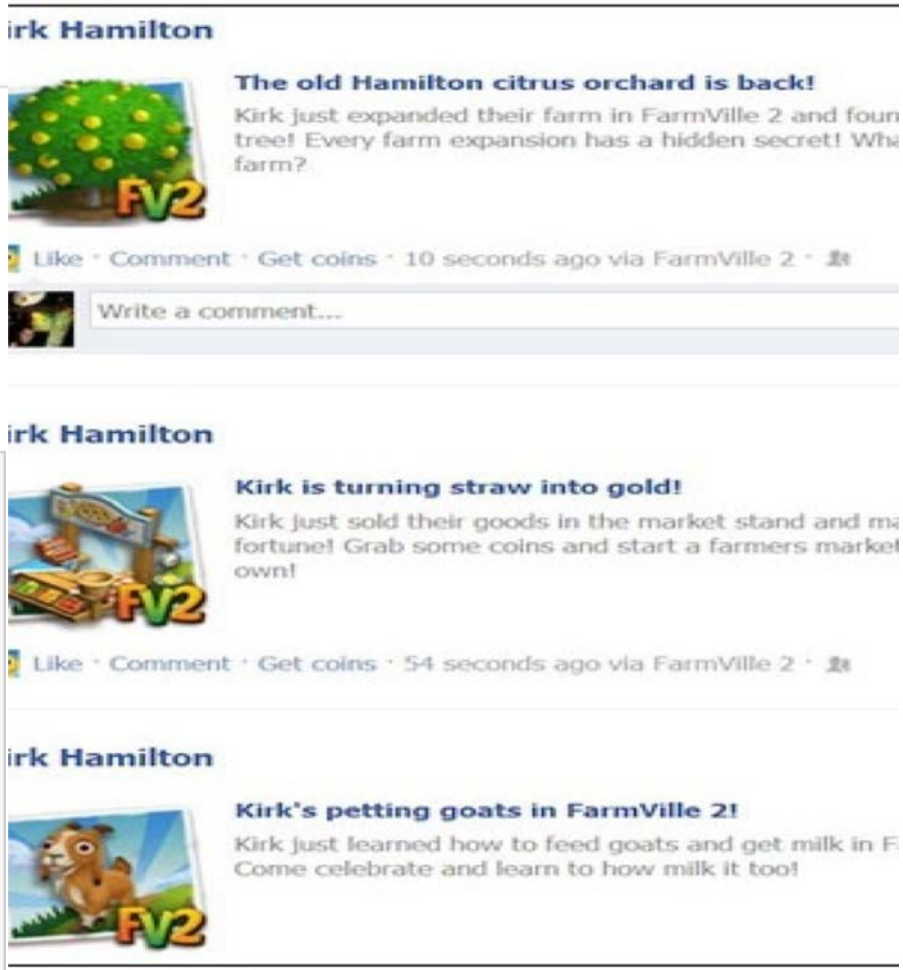
Design Rules

- Designing the Player Journey:
- Onboarding: from when the user hears about the game for the first to how to get the player into the game
- Scaffolding: how the game provides “training wheels” to help the player to overcome problems and avoid to be stuck
- Pathways to Mastery: the player has to arrive to a point where he has conquered real skills

Werbach, K., & Hunter, D. (2012). For the win: How game thinking can revolutionize your business. Wharton Digital Press.

Farmville Example: Onboarding





Farmville Example: Scaffolding

Farmville Example: Mastery

What makes games engaging?

- The emotional component of the experience
- Because they are FUN
- Fun should be designed

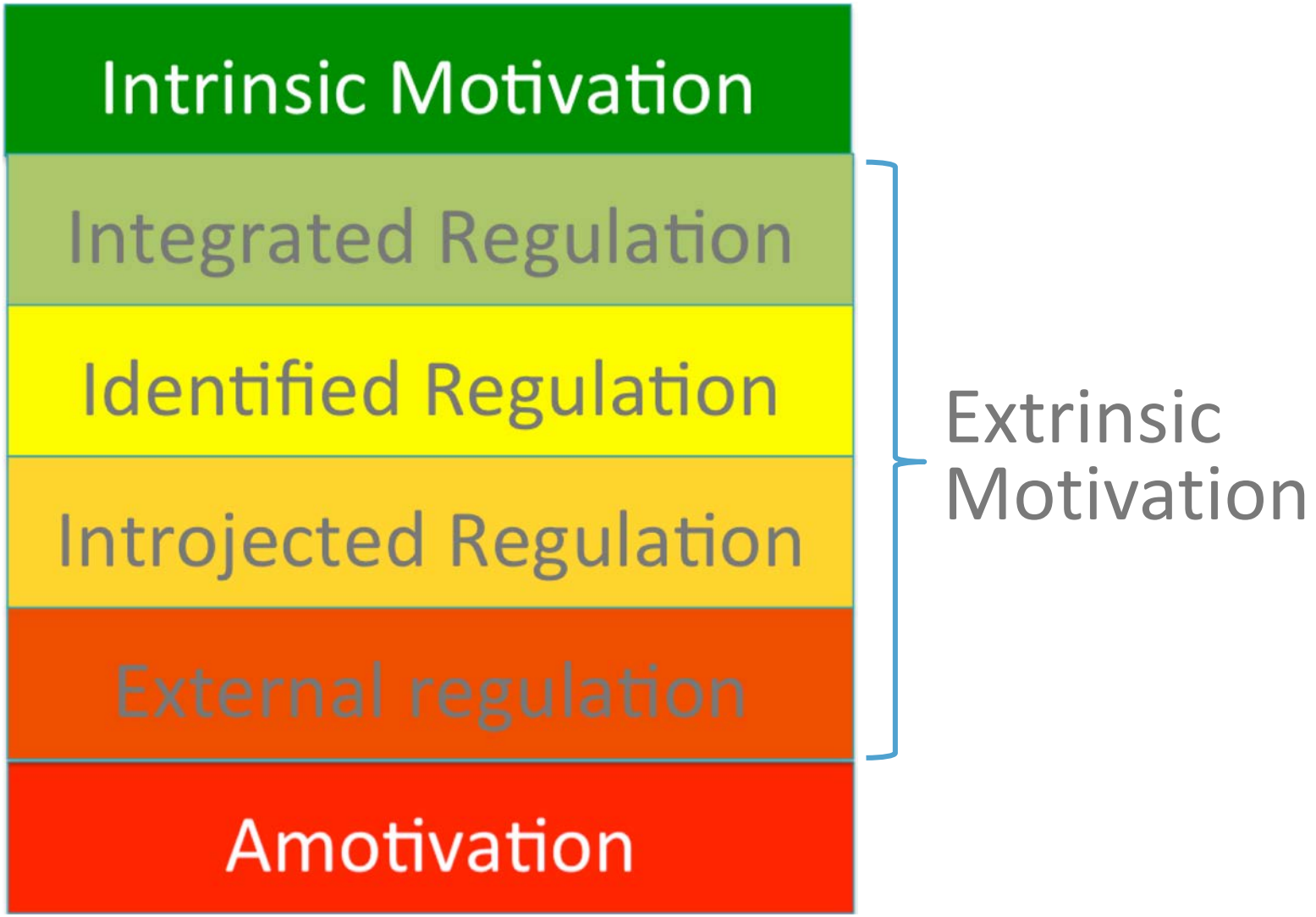
Werbach, K., & Hunter, D. (2012). For the win: How game thinking can revolutionize your business. Wharton Digital Press.

Motivational Design

In psychology there are two main trends for motivational design:

- **Behaviorism**: reinforcement through rewards, which are considered as external stimuli that allow for the release of dopamine in user's brain making the activity pleasant and addicting.
- **Cognitivism**: based on the self-determination theory states that external rewards can solicit just the extrinsic motivation which is less compelling than intrinsic motivation, which defines an internal urge to do something for its own sake, not because of external stimulus but only because the person finds it fun.

Different Types of Motivation

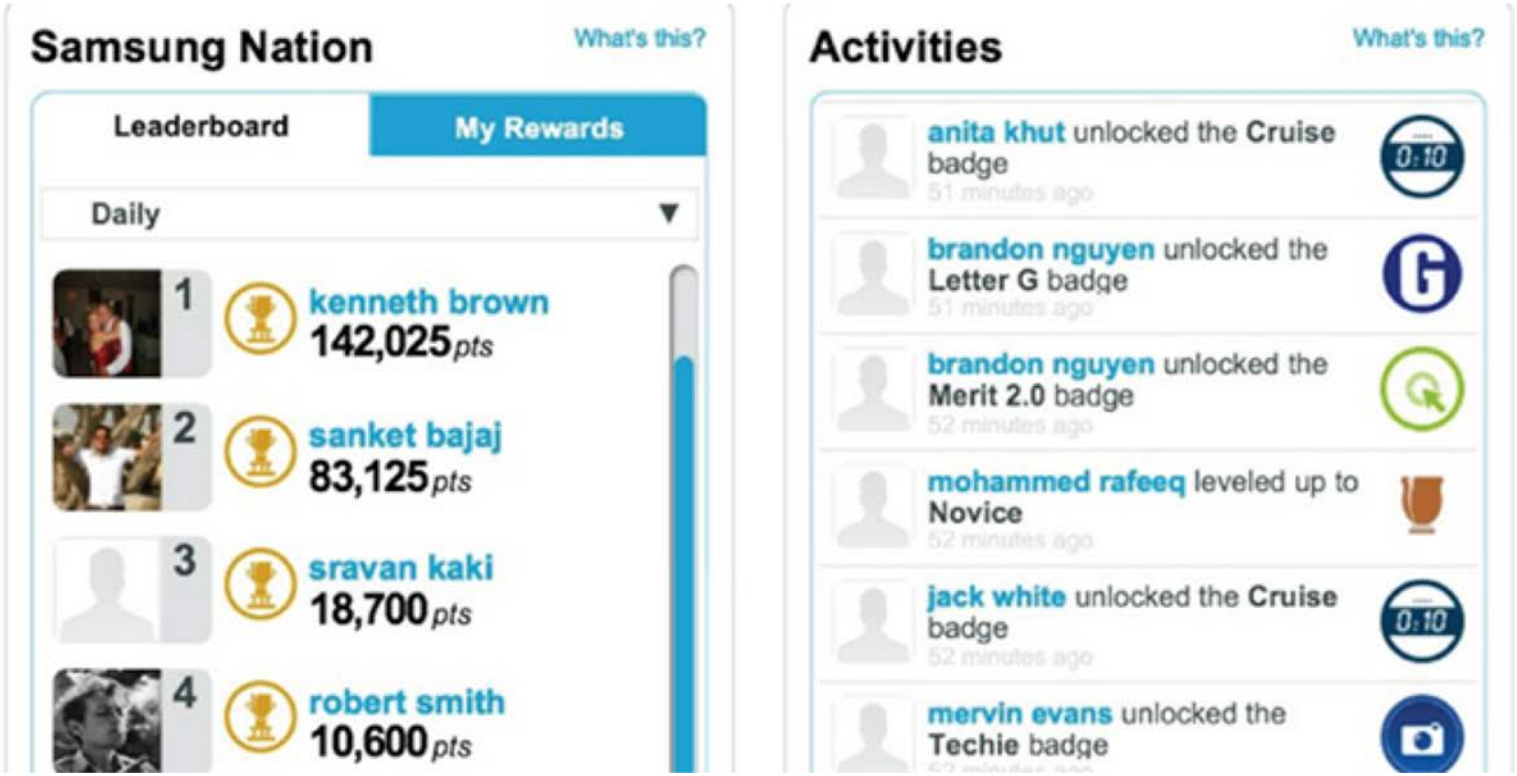


Caon & Rigamonti – GDD 2018

Intrinsic Motivation

- There are 3 components of intrinsic motivation:
  - **Competence:** sense of people that they are achieving something within the activity
  - **Autonomy:** users have to feel the control
  - **Relatedness:** users' activity is connected to something beyond themselves, a superior good

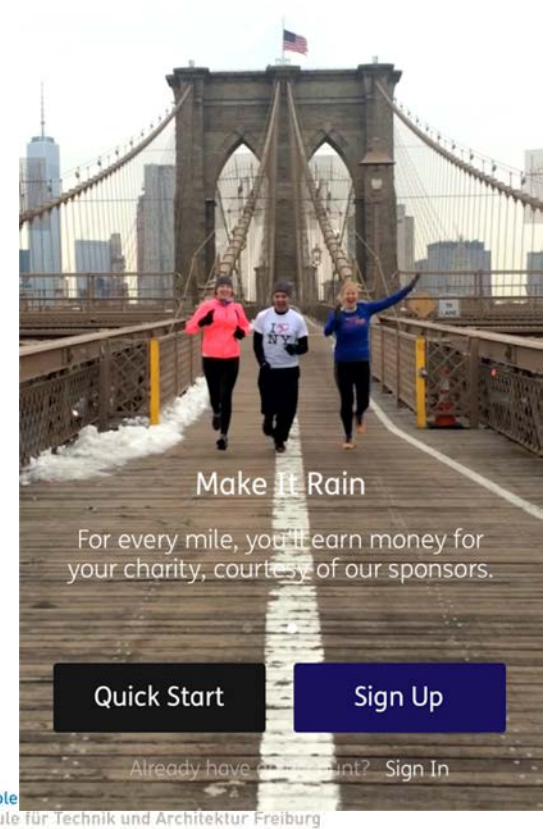
Example of Extrinsic Motivation Design

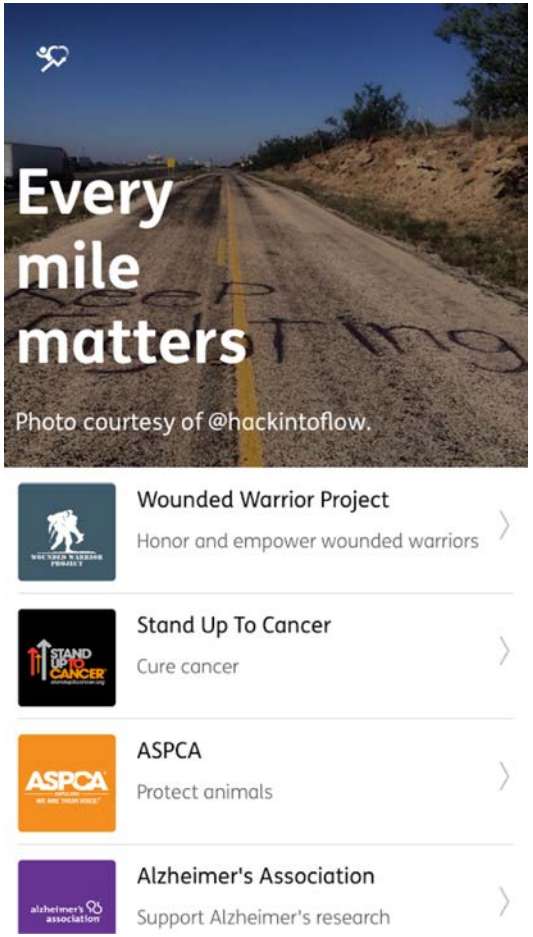


www.samsung.com/us/prizes/

Example of Intrinsic Motivation Design

www.charitymiles.org



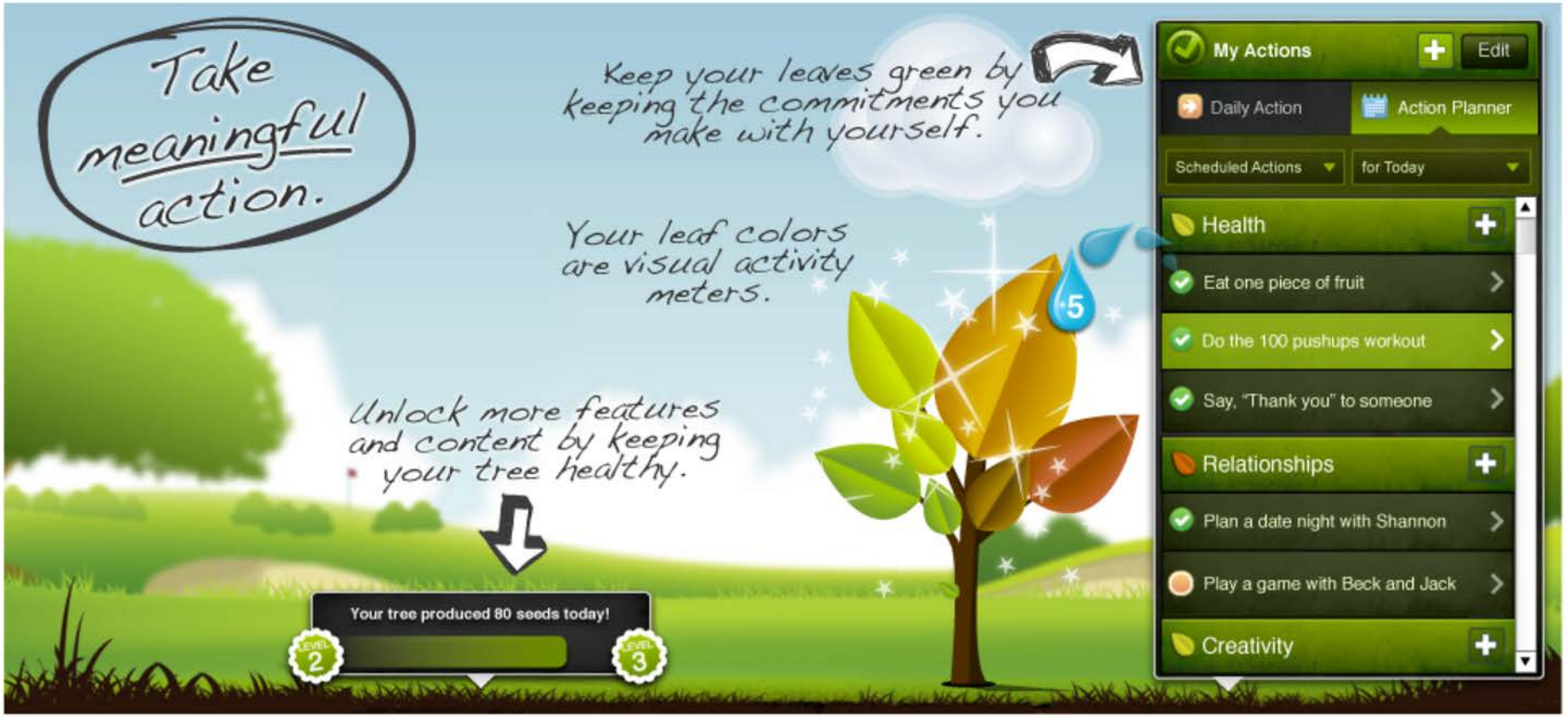


Gamification for Social Good

Four categories:

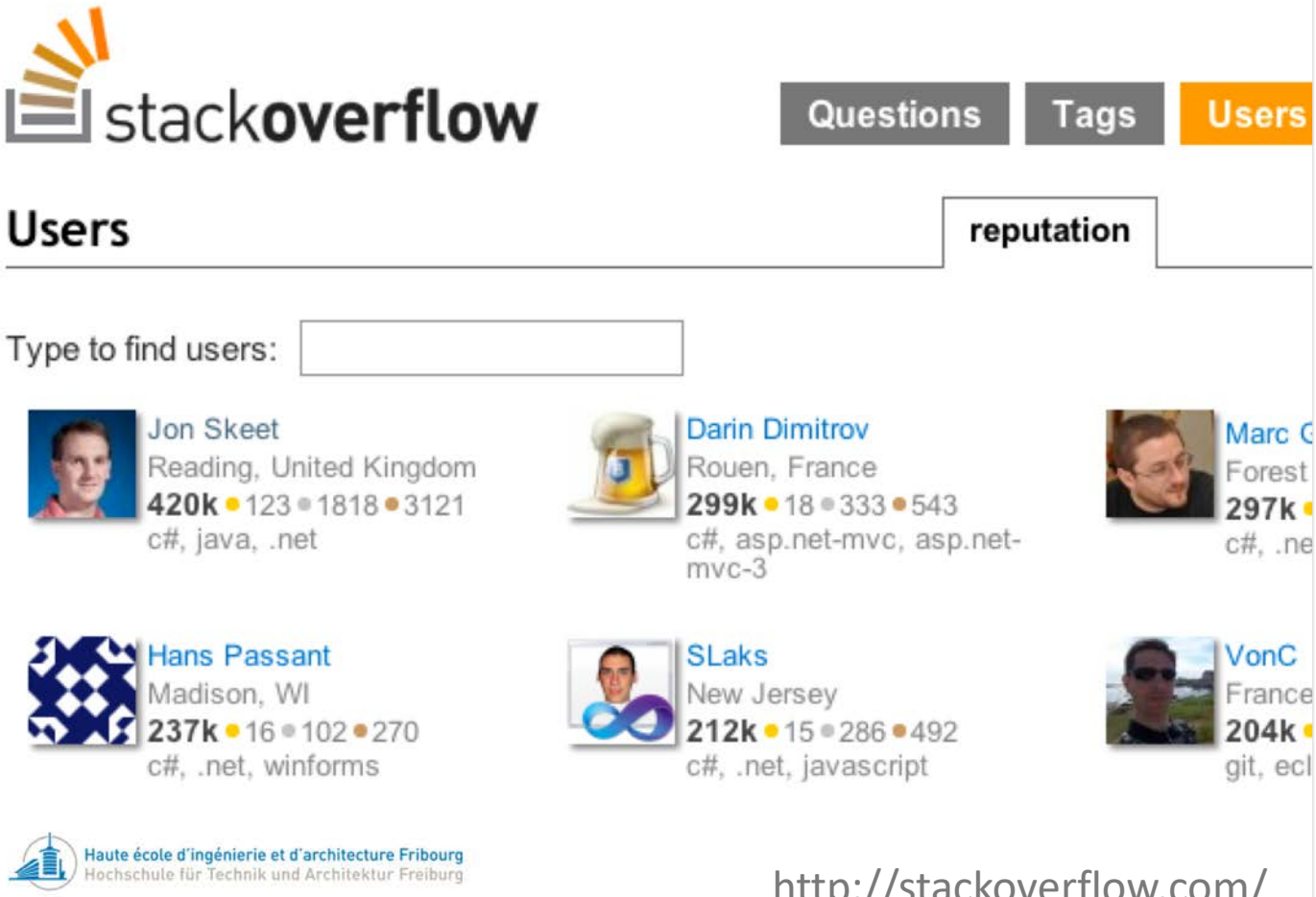
- Health and wellness
- Energy and environment
- Education
- Government

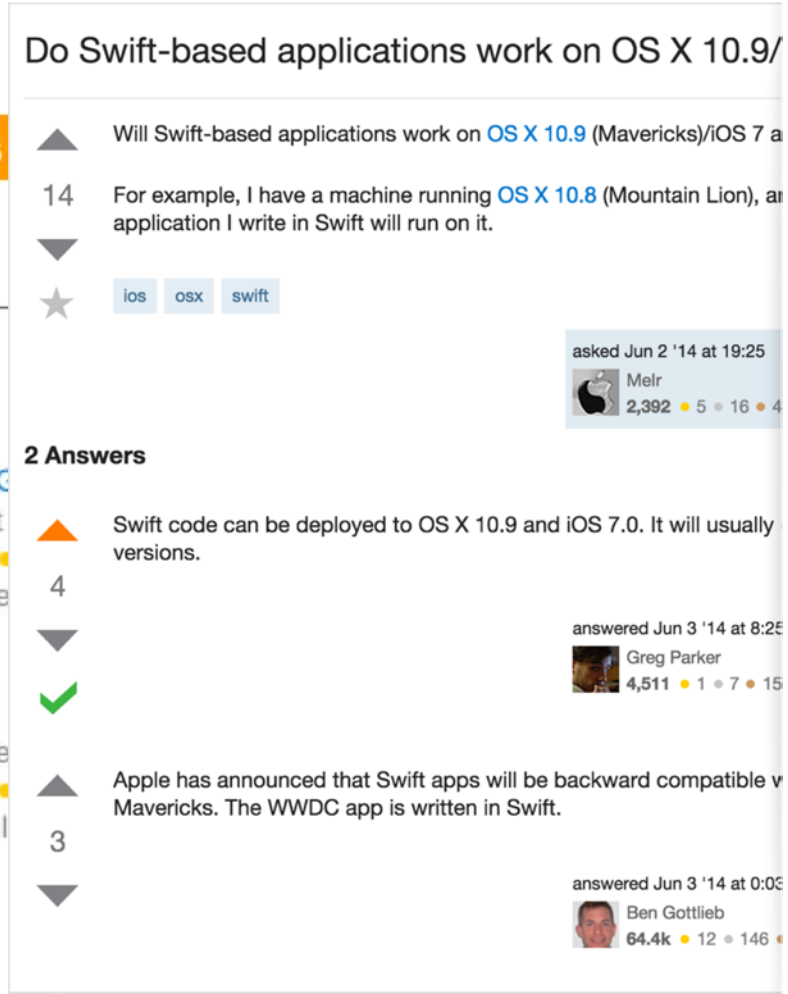
Health and Wellness Example



Energy and Environment Example

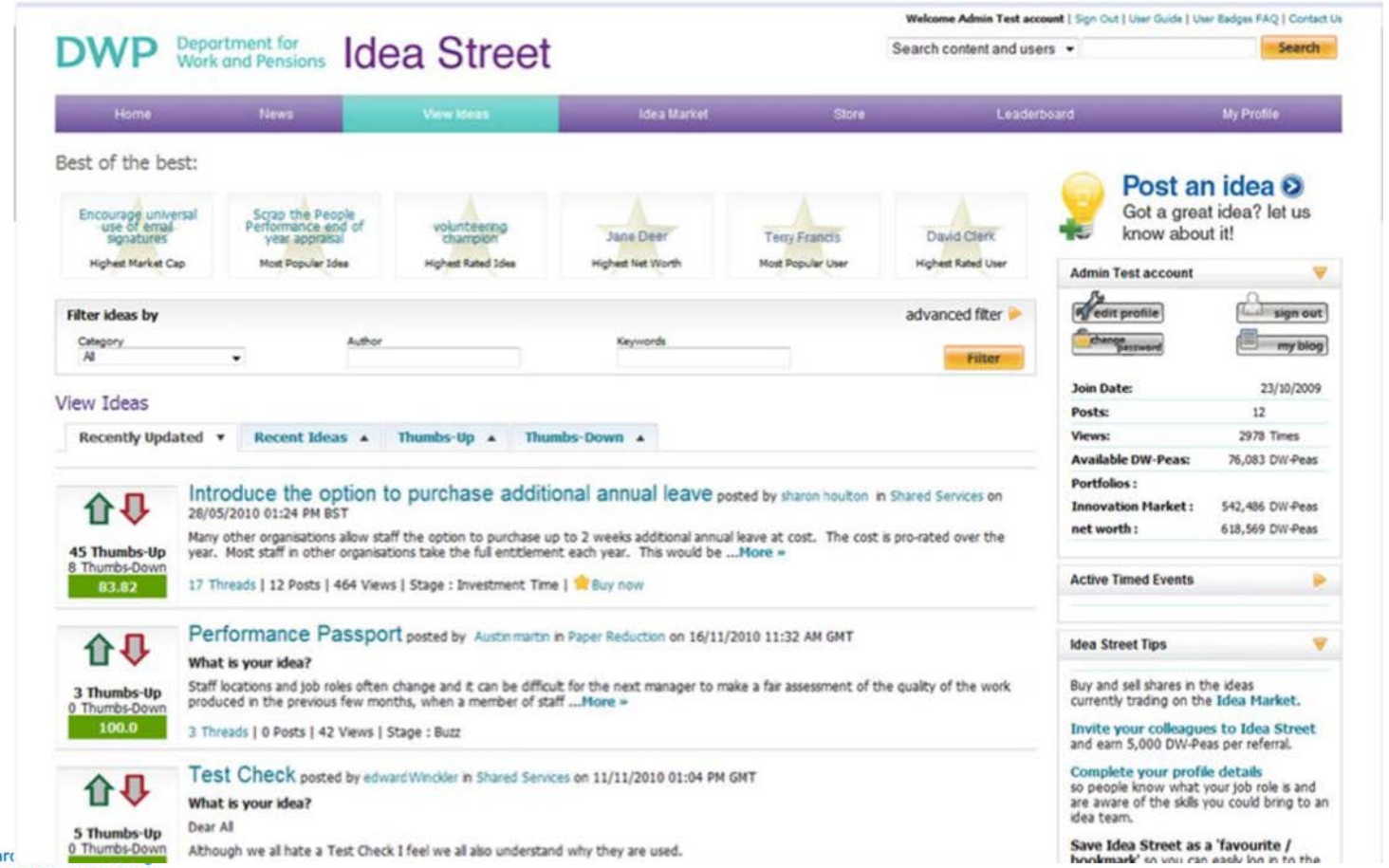
Education Example





http://stackoverflow.com/

Government Example



Wrap up

- Serious Games
  - Videogames that have a goal beyond entertainment
  - Games for Health
- Gamification
  - The use of game elements in non-game contexts
  - Designing the player journey, fun and motivation

Questions?