

Agentville: supporting situational awareness and motivation in call centres

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Abstract. Call centres are high pressure work environments where agents work strictly according to shifts and time schedules. Typically, agents are grouped into teams with supervisors from whom they receive only periodic performance feedback. It is a challenge to maintain high motivation and performance amongst the agents in this environment. Agents may lack awareness of their individual status with respect to their objectives, and the performance of their team and the call center as a whole. In this chapter we describe the design of a system that we are building to provide the agents with real-time information on their work environment's status and on potential improvements in performance, while hopefully also improving their work experience. The solution is based on the introduction in the call centre of some game mechanics whose selection and instantiation has been informed by case studies conducted by the authors.

Keywords: ethnography, ethnomethodology, game mechanics, Human Computer Interaction

1 Introduction

Call centres are an example of high pressure office workplaces where agents work very strictly according to shifts and time schedules, in cubicles situated in large open spaces, while receiving calls assigned to them one after the other immediately as they become available as long as the calls stack up in the call centre queue. Typically, agents are grouped into teams of 10 to 15 workers to which supervisors are assigned from whom they receive periodic (weekly and monthly) feedback on their performance. Supervisors report to Operations Managers, who in turn are responsible for groups of 10 to 15 supervisors. In call centres doing inbound activity (receiving phone calls from customers) agent performance is measured according to metrics, here on referred to as Key Performance Indicators (KPIs) which are derived from the call centre telephone switch and from assessments performed by quality analysts who listen to recorded phone calls and “score” the agents' performance on a set of pre-defined categories (e.g. “average”, “very good”, etc.). An example of a KPI derived from the telephone switch is Average Handle Time (AHT), which represents the average time an agent spends on a phone call with a customer. The call centre as a whole is expected to keep their aggregate average KPI values within a certain

threshold (or upper and lower threshold values) – agents are therefore in turn expected to manage their phone calls so that their average values fall within those thresholds.

This organizational hierarchy is designed to ensure control and supervision of a “floor” that may total 800 to 900 agents in some of the larger call centres. It also creates a reporting structure where agents are held to account for their own individual performance alone and where activity-based compensation mechanisms for agents reflect their individual performance but not that of the call centre's operations as a whole. The challenges that characterize this environment can be translated into two broad and interrelated requirements:

- Providing agents with the right level of “situational awareness”, i.e. an understanding of their ongoing performance within the broader context of the operations of the call centre as a whole;
- Providing the right motivation and performance related incentives to employees.

In the absence of the appropriate levels of situational awareness and motivation for the agents, it becomes difficult for call centres (represented operationally either by supervisors or operations managers) to justify the need for agents to push their performance beyond their minimum requirements, even when and where there is room for improvement at the individual agent level that would in turn improve the aggregate performance of the call centre as a whole.

In some call centres, Information Management Systems available to agents may provide access to switch data. However, to reflect the performance trends of specific agents or teams the data needs to be aggregated into “reports”, the creation of which is time consuming and dedicated to specific organizational processes, such as reporting on the call centre's overall performance or in the course of “coaching sessions” with individual agents. The net result is that agents receive feedback on their individual and team performance only periodically, and not in the course of their routine work of taking phone calls – which is precisely when it is most needed for agents to effectively monitor their own performance. Therefore, call centre services providers are interested in finding solutions to the problem of providing agents with continual, dynamic information about individual, team and call centre performance.

Our observational studies suggest that supervisors and operations managers in call centres are skilled at providing agents with valuable feedback on their performance metrics in their weekly one-to-one coaching sessions. While supervisors would like to have more one-on-one time with their agents, there is obviously a limit to how much time a supervisor can spend with any one of his or her agents in the course of a week, and to the time the call centre can afford to pull agents out of production time (i.e. taking phone calls) to receive coaching. Moreover performance targets and objectives need to be perceived as fair and attainable, and provide a reasonable balance between individual performance objectives and organizational requirements, in order to motivate performance.

In this chapter we illustrate the design of a system, called Agentville, which we are building for addressing the situation awareness and motivation issues in call centres. What our system offers is a feasible way of closing the agent-supervisor feedback loop by providing agents with near real-time access to their current performance metrics and trends (without having to log in to a separate system while they are taking calls) – this empowers the agents to self-monitor more effectively between the weekly

milestones that are already in place. Our system also provides clear and shared objectives with direct access to relevant metrics: through our systems the agents and supervisors are able to compare their performance to that of their team and the call centre as a whole and better understand the relationship between their performance and the organizational goals of the centre. Supervisors will be able to easily identify agents and teams which have the best margins of improvement on strategically relevant metrics at any point in time and challenge or encourage them to improve. The challenges could also be configured by the supervisors to be automatically triggered by the system when specific situations are detected.

We first describe more in details the analysis of performance and work experience issues in call centres that has inspired the design of our system. Then we describe the interaction supported by Agentville and discuss related and future work.

2 Performance and Work Experience in Call Centres

The goal of this section is to provide more context for the focus on performance management strategies in our work with call centres. Part of the focus comes from a specific concern with the high level of attrition experienced by the call centres we collaborated with. To some extent, high levels of attrition are endemic to the business model. Call centres ramp up or down their workforce depending on projected call volume, new product releases, and other factors usually tied to the client organization's needs. In turn, agents who are treated as expendable to the short term business requirements of the organization will not necessarily show a lot of loyalty to their job. But even taking these factors into account, agent turnover remains excessively high and carries a cost in terms of training and loss of experience within the workforce. Part of our remit in collaborating with the call centres was therefore to gain some insight into the aspects of the job that agents find stressful, above and beyond the pressure that the job itself brings (inflexible pacing, pressure to deal with unhappy customers, and more). One of the issues we identified was in the occasional misalignment of organizational goals and objectives, performance management strategies, and the agents' own self interest.

Working to the Numbers

The business model of an outsourced call centre is to deliver a business service or process to the outsourcing company at an appropriate level of quality, but at a lower cost than if the company was to manage that service or process itself. The expected level of quality is defined by what is commonly referred to as a Service Level Agreement (SLA). This contractual document sets performance targets for the outsourced service provider, along with bonuses and penalties for exceeding or failing to meet the relevant thresholds. The key performance metrics in the SLA are typically the same ones used to assess the performance of the agents (albeit at different levels of aggregation). The performance of the call centre as a whole therefore relates, quite directly, to the aggregate performance of its individual agents.

We do not intend to go into the operations management strategies of a call centre operation in detail here – suffice it to say that they have all the expected workforce, quality management and assessment processes – all designed to optimize that difficult

relationship between quality and quantity. What we do want to describe in more detail is what we observed happening in practice, and in particular the ways in which agents are forced to balance the often contradictory relations between performance metrics (both quantitative and qualitative), compensation mechanisms, and organizational policies.

A very simple example of the interconnectedness of performance metrics is the relationship between AHT and Calls per Hour (CPH). This is a very straightforward relation: The higher your AHT the lower your average number of Calls Per Hour is going to be, but if we add Customer Satisfaction Survey responses to this equation, the balancing act becomes less straightforward. These surveys are administered at random to customers after a phone call with a call centre agent. Agents do not know which of their calls will be attached to a survey score, but they do know that a negative evaluation will directly affect their compensation (as agent pay rates are calculated using a combination of quantitative and qualitative performance measures). They also know that a way of minimizing the chances of a negative score is to spend as much time as needed with each customer in order to resolve their issue – which in the long run may negatively affect their AHT and CPH values.

In one particular call centre we encountered a situation where the company policy was that agents should only offer limited phone support to customers who have not paid for the company's optional support package. The agents, however, were aware that offering only limited support to non-eligible customers might result in a negative customer satisfaction survey. So the problem for the agent then becomes one of balancing "risk" between two potentially contradictory factors which will affect their performance assessment and pay rate: enforce the client organization's policy and risk incurring in negative surveys, or ignore (or not fully enforce) the policy and risk negatively impacting the SLA (which states that the call centre should only offer limited support to non-eligible customers). Providing full support to ineligible customers may also affect the agents' individual performance assessment, but in this case the impact of a negative survey score, from an agent's point of view, was far more damaging.

Realistically, call centre operators understand that agents, when faced with these kinds of contradictions, will tend to put their own interests ahead of those of the organization as a whole (in so far as these are visible to them). Even when not faced with contradictory relations between different performance metrics, many agents learn how to "work to the numbers" – i.e. leverage their understanding of the performance assessment and compensation mechanisms in order to, for example, hit the highest compensation rates without necessarily providing the best value to their organization. There is no criticism of the agents' behavior implied here – to the extent that they are treated as expendable resources they cannot be expected to sacrifice their own self-interest for the greater good of the organization.

Motivation through gamification

If an organization such as call centre wants to "optimize" the value of the work of its agents it must therefore ensure that it is providing agents with (a) coherent and attainable objectives, and (b) the right level of awareness of where they are with respect to those objectives. Insofar as the needs of the call centre as a whole are not always going to be a perfect match with the self-interest of the agents, the call centre

also needs to provide the appropriate incentives. Some of these are meant to be managed through Activity Based Compensation (ABC) mechanisms. The problem with ABC is that it encourages agents to “work to the numbers”. The call centres’ response, then, is to regularly tweak the ABC mechanisms to attempt to “drive” the agents towards better performance in specific areas. This can lead to confusion on the part of the agents, and it can, as described above, occasionally introduce contradictions between organizational policies and the agents’ own interest.

To provide an additional incentive system that does not rely on the manipulation of compensation mechanisms or on the potentially punitive character of traditional performance management and tracking strategies, many call centres have turned to the use of simple “games” such as challenges and competitions. These are usually performance related (i.e. tied to specific KPIs) and may pit individual agents, teams, or entire call centres against each other for rewards that range from the nominal (a few extra minutes break time) to the substantial (flat screen TVs and laptops). The question of the effectiveness of the use of challenges and competitions in call centres is outside of the scope of this chapter. Trends in performance are routinely tracked within call centres, but challenges and competitions are just two out of any number of factors that could be affecting agent performance at any given moment in time. What encourages their use, more than hard evidence of their impact on performance, is the perception on the part of call centre managers that they give agents a much needed morale boost. Based on observations made during our field studies, there are nevertheless some observations that we would like to make about the current implementation of challenges and competitions in call centres.

In the first instance, they are often tied to specific organizational requirements (for example, drive a specific performance metric, or the sale of a particular product or service). The consequence of this is that the challenges and competitions can be biased towards a specific skill set, and therefore specific agents, and then not be motivating for all the agents.

The challenges and competitions are also implemented in a fairly “low-tech” manner. This means that ongoing games are tracked using pen and paper, and represented using whiteboards or paper wall displays. This does not mean that the call centres do not put any effort into the running of the competitions. The problem is that this type of representation is not very dynamic and not visible to all the agents on the floor (depending on where they are seated). Like other types of performance management and motivation strategies in the call centre, this type of implementation has a fairly slow feedback cycle. The agents’ engagement is therefore mostly dependent on the nature of the reward rather than in taking part in the game itself. This is fine insofar as the call centres are prepared to provide substantial rewards for occasional challenges and competitions, but not very sustainable if they wanted to use them more pervasively

3 Agentville

On the basis of the observations made during recent field studies conducted in call centres but also during previous studies [6,2] we have identified two major problems

in call centre work environments: first agents are missing clear and up to date information enabling them to take appropriate decisions on their work; second call centres have difficulties in providing the right motivation and performance related incentives to their agents. We have designed and are building a system, called Agentville, that aims at addressing these problems. Agentville provides the agents of a call centre with a visualization of important elements of information on the work environment and it integrates some game mechanics. More precisely, it offers:

- a visualization of the salient elements of information on the unfolding work status, at call centre, team, and agent levels, in an integrated and real-time fashion;
- visual indications of current trends and potential performance issues, and
- indications and means on how to potentially address these issues;
- a direct integration of selected individual and collective game mechanics with the performance feedback features of the system.

The vision of the future work in a call centre supported by a 3D virtual world multi-player game environment, including avatars, etc. is discussed in [11]. Although the idea of integrating the game mechanisms in a fully developed virtual environment with a coherent narrative in a workplace like a call centre looks like an interesting challenge, what we advocate here is the feasibility and the benefit of adopting a more modular and incremental approach, that is, to introduce only the following *game mechanics* [7,3,4]: *Progression, Virtual Currency, Levels, Badges, Leaderboards, and Challenges*. The game mechanics that we propose have been selected and instantiated according to our understanding of the requirements for improving both performance and motivation of call centres operators and our direct observation of work dynamics in call centres.

This section illustrates the design of the system describing its two main components: (1) a server side through which data on call centre activities are collected and processed and (2) a client side rendering the resulting information to agents, enabling them to assess the situation at a glance, and providing them with some means to react accordingly.

Server side

The server side of the Agentville system is devoted to the collection and aggregation of relevant information, e.g. KPIs data, and the support to gaming elements, used to provide on the client side integrated information on current work status and trends and indications on how individual and collective performance and quality of work experience could be improved.

Key Performance Indicator Data

The KPI data that are used by the system and dynamically collected by wrapping various call centre data sources and systems include:

- Call centre SLA, i.e. the call centre KPIs, e.g. the minimum and maximum acceptable length for a call. The call centre KPIs are related to the individual call centre agent's KPIs. For instance the constraints on the acceptable call length are translated into minimum and maximum values for agent's AHT.

- Agent specific data
 - Agent status information (e.g. handling a call, presence at desk)
 - Call specific data: Start and duration of the current call, hold time, transfer, etc.; Average Handle Time (AHT); Calls Per Hour (CPH).
 - Scheduling data: agent scheduling data including planned shifts and breaks.
- Call specific data
 - Call timings: meta-data about a call obtained on the fly analyzing the call audio content: talk time, dead air time, etc.
 - CSAT scores: satisfaction scores assigned to calls on the base of surveys.
 - Quality scores: obtained and aggregated from quality assessments carried out on e.g. a weekly basis by quality assurance officers who listen to agent calls and mark them on a number of categories related to policy adherence, technical capabilities, soft skills, etc. This score is often also a KPI in the SLA.
 - Topic: a set of keywords from a predefined list that are assigned to the call when CSAT score are assigned, describing the call content.

Selected game mechanics for call centres

Agents are evaluated and paid essentially based on the KPI values they obtain. Therefore the KPIs also play a central role in the following game elements that we consider and integrate in our system.

Virtual Currency: The system awards agents for their work in terms of a virtual currency (credits). Credits are attributed for and associated to the different categories of actions or achievements relevant within a call centre and depending on the configuration of the call centre, typically wrt its SLA:

- Handling an individual call in a timely fashion: the amount of credits awarded depends on the correct timing (satisfying call related KPIs, e.g. AHT, dead air time, etc.). The timing thresholds and relevance of the individual KPIs will be specific to each call centre and depend on the SLA agreed with the customer. After each call the system can verify automatically from the switch board data if these constraints are met and award corresponding credits to the agent.
- Satisfying a not-individual call time-related KPI, e.g. adherence to the schedule. These conditions can be verified automatically from the switch board data and corresponding credits awarded in regular time intervals corresponding to the overall value achieved by the agent, e.g. overall adherence per shift computed at the end of each shift.
- Satisfying quality requirements, e.g. obtaining a good quality assessment/CSAT score; each time a quality assessment or CSAT becomes available within the system corresponding credits are automatically awarded.
- Showing topic expertise: strong topic expertise can be identified during the quality assessments. In that case corresponding credits are awarded.
- Helping other agents: If the system detects that one agent helps out another agent credits can be awarded to the helping agent. This is possible for

instance when an agent with strong topic expertise tutors another agent with initially weaker expertise on that topic; if over time the second agent shows significantly increased expertise this provides evidence that the first agent did a good tutoring job.

All these credits are continuously accumulated on the individual agent's account and visible to the agent (see Client side section). The agent can spend them, according to agreements within the call centre, at any time for various things like virtual goods, earning 'time-outs' (just for some seconds, so agents can catch their breath) etc.

Badges: Badges materialize the agent's level of performance for a given category over a long time period. They are attributed to the agents in regular time frames (corresponding to meaningful evaluation periods, such as the agent's regular review periods with their supervisor). In each category the agent obtains a badge if he earned a minimum amount of credits in this category. Different levels may exist for each category badge (e.g. gold, silver, bronze) corresponding to the amount of credits earned over the corresponding time period (i.e. corresponding to the achieved level of performance). Different badges indicate e.g. that an agent has handled a corresponding amount of calls in a timely fashion, that he satisfied the not-individual call time-related KPIs up to a certain level, how well he satisfied quality requirements or that the agent has shown expertise in certain topics or that he provided relevant help to his colleagues.

Levels: Agents are situated at different levels according to the badges they own. An agent starts on the lowest level – without any badge. Once he obtains a bronze badge in all categories, indicating that he has reached a certain level of performance in all required categories he will level up to the next level etc. Similarly he might move down to a lower level if later on he only obtains lower level badges in some categories over consecutive time periods.

Leader boards: Leader boards can be presented for each level to the corresponding agents indicating how the agent is placed with respect to his colleagues.

Progression: The system provides information about the current situation for the agent's KPIs, the trends, and estimations of the KPI for the near future. It also detects when an agent is close to change level, i.e. level up or down. It can then alert the agent indicating what he can do to achieve an improvement for the level or to prevent to loose a level, e.g. suggesting trying to limit the next calls handle time if the recent AHT was a bit too high. As badges are distributed in regular time intervals corresponding to the reviewing periods of the agents such alerts will mainly happen when the reviewing date is close and the estimation becomes more and more accurate. However, particularly big deviations from prior performance values or rare data such as quality assessments which are carried out only a limited number of times might generate earlier alerts.

Challenges: In our system challenges that can be issued are bets for the agents on improvements of a given KPI or on their overall performance. Two options are considered: either bets are controlled by supervisors or they are automatically issued by the system. In the first case a supervisor can use the system to suggest to the agent to bet on improvements of not satisfactory KPIs or when the agent is close to change

level, i.e. level up or down. The agent can accept the bet or ignore it. In the second case the system suggests to the agents to bet on improving particular KPIs. For example for the CPH the system detects that the parameter for an agent is below threshold and provides an estimation of how this can be improved on the basis of the scheduling of the work and the time interval in which the parameter is evaluated, e.g. one week or one month, and allows the agent to bet a minimal and a maximal amount of points according to a given scale. If the agent ignores or delay (resp. reject) the bet the system can periodically re-submit the suggestion to the agent (resp. discard it). Satisfying an accepted bet will in turn result in an increased amount of credits granted whereas missing it will remove a corresponding amount of credits.

Similar to what we defined above for the individual agent's, the same game mechanics can also be introduced for agent teams. Therefore the corresponding values are averaged over all team members. This represents the overall team level and allows situating the team performance with respect to the other teams. It identifies and visualizes global strengths/weaknesses in the team and allows the supervisor to address them with appropriate actions, e.g. training, or exceptional awards to increase performance on particular critical performance measures. Again the system can detect positive and negative trends and alert the supervisor accordingly.

From the team agent's varying topic expertise information the system can furthermore identify and highlight other interesting situations, e.g. the presence within the team of agents with strong and other with weak expertise with respect to a particular topic. In this case it can be useful to organize pairs of buddies in such a way that the stronger agent tutors and forms the weaker one. This can be organized by the supervisor or proposed by the system directly to the concerned agents. The pair of agents can then bet on an improvement of the weak agent within a given time frame; if after that the expertise level of the initially weaker agent rises significantly the system can recognize this and award corresponding credits to the tutoring agent. (The weaker agent will be rewarded directly because he improved his topic expertise.) Another situation that can be identified is a general lack within the team of a particular expertise. In this case the supervisor might want to organize corresponding trainings.

The system also integrates information about the general call centre situation. From past observations it can determine the maximal queue length that can still be appropriately processed by the call centre at a given time (i.e. with a given number of scheduled agents). Monitoring the actual situation in terms of queue length and present agents allows foreseeing critical situations and tackling them in time. Alerts can be given when such critical situations may arise; the system can then e.g. propose that the agents can bet on faster handling of calls enabling to keep the whole centre within an acceptable situation. Another possibility is to propose rescheduling of agent presence (breaks) rewarded with additional credits for agents that accept rescheduling.

Client side

The client side of Agentville provides the agents with a synthetic graphic representation of information on their own performance and credits, as well as the opportunities for improvement. Given the typical characteristics and constraints of a call centre, we believe that in order to be effective the interface must be easily

accessible and always visible to keep the users permanently aware of the actual and evolving situation. It must also be simple and intuitive such that the user can understand at a glance without any particular effort and without distracting her from her “real” work. Finally, it must be of small size, especially for the agents because the large majority of the screen estate is already occupied by the various tools needed to perform their work. For example, the typical desktop of an agent in a call centre is crowded with tools providing access to knowledge bases and Customer Relationship Management environments used to record call data and to access content that may be relevant to answer the customer’s questions or to perform a required task. We therefore propose that the client interface for the actors of Agentville mainly consists of a desktop widget of small size that sits permanently on their desktop providing all required information at a glance.

Agent Visualization

We propose a visualization mechanism that includes for each agent a visualization of a customizable selection of KPIs, typically varying in number between 1 and 10, which provides at a glance information about (a) whether the average value for the displayed KPIs for that agent fall within or without the required threshold at a specific point in time or in real time; (b) the trending of the average values for the displayed KPIs for the agent's ongoing work day across regular time intervals or in real time and (c) for all selected KPIs the badges representing their current skill level (bronze, silver or gold). Figure 1 shows an example of the widget. In the centre the widget displays customizable information (in Figure 1 the current AHT value together with the total number of credits earned over the ongoing reviewing period).



Figure 1: Multiple KPI visualization

Using the navigation tabs at the bottom of the widget, the agent can access additional visualizations, such as an overview of their current level, credits and badges gained (Figure 2). Invitations to bet on improvements of the KPI performance are displayed e.g. if the agent is close to achieving a new level for a particular KPI.



Figure 2: Example of an agent's current level, credits and badges

Another kind of information provided to the agent is a detailed, comparative visualization of an individual, selectable KPI for an agent versus the team or the overall centre average values with customizable time intervals (day, week or month). This provides at a glance information about whether the average values for the displayed KPI for that agent, the team, and call centre as a whole, fall within or without the required threshold at all points in time for the selected time interval and provides information about the corresponding performance levels. An example is shown in Figure 3.

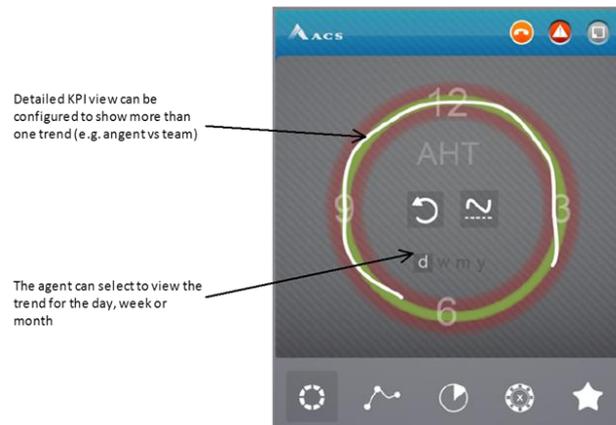


Figure 3: Detailed KPI view with thresholds and trends

The system also shows *Prospective Information* as follows:

- given the current trend for any given KPI, the widget shows the projected performance for the rest of the shift, week, or month;
- given the distance of the current average performance value for any KPI from the current threshold value(s) for that KPI the widget shows: (a) for agents who are underperforming, the necessary effort to bring, the average value within the expected threshold(s) over the rest of the shift, week or month (see Figure 4); and

(b) for agents who are not underperforming, the necessary effort to maintain the current average values over the rest of the shift, week or month.

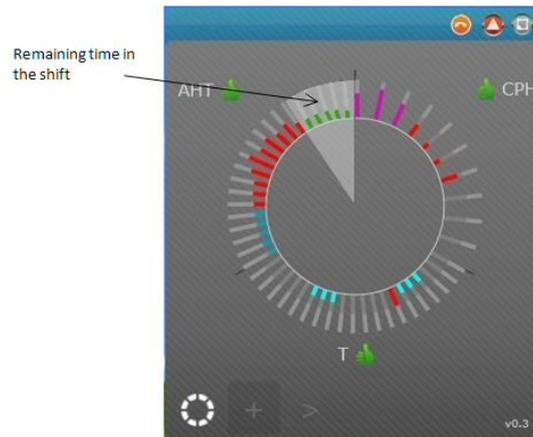


Figure 4: The remaining time on the agent's shift can be used to visualize a projection of the current performance trend through to the end of the shift

Supervisor Visualization

Team supervisors have their own version of the client which displays the same information present in the agent client, but gives supervisors the ability to select and visualize the performance of any of the agents on their team, or the average performance of the whole team. Figure 4 shows an example of the visualization of the performance of an individual team member:

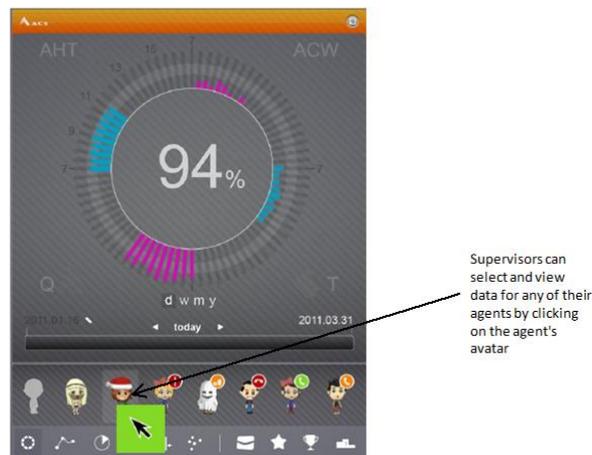


Figure 4: Supervisor visualization

4 Related Work

Gamification of work environments is a recent trend which broadly speaking refers to adding elements of competition, direct reward, team supported learning and play around the execution of real work activities. The most mature and known category is also referred to as “serious games”. These environments are typically simulation environments that provide training and support in a game space where users can learn by experimenting, interacting with other colleagues represented as avatars and winning rewards. Only recently however this approach has been proposed also in support of routine on-going work [11, 10] and not only in support of specific learning activities. This last attempt is challenging as the gamification should be attractive enough to engage the actors in the system dynamics but at the same time not too distracting from the actual execution and focus on the work tasks. Reeves and Byron [11] list the key elements of gamification of a work environment where it provides self representation, meritocracy mechanisms, transparency of the activities, and teamwork added value. Also, recently there are examples of social games designed for the workplace like for example Taskville [10], a distributed social media workplace game that gamifies the process of routine task management, introducing light competitive play within and between teams. The game “incorporates a city-building metaphor where the completion of tasks leads to the growth of cities in the game world”.

Reeves and Byron [11] also provide a scenario of how a call centre environment may be gamified. Their scenario includes the ideas of a supervisor checking her team’s progress (“after the last shift, how do they rank on number of call resolutions, who in the group has leveled up and who needs encouragement?”). Also, “All the once familiar call centre metrics are now cast as points, ranks, and virtual currency within a large and engaging multiplayer game complete with a compelling narrative, interesting 3D environment”. And “Data about the team are available for all to see (just right-click a character to discover its experience level, wealth in gold pieces, availability for new assignments, or recent compliments from other team members.)”.

This scenario is quite similar to our general problem statement and solution approach and includes a number of the aspects of what we propose for the gamification part but it considers a full-fledged multiplayer game instead of selected game elements as in our approach.

The www.callcentregames.com web site provides a number of games that are meant to motivate agent performance. While the motivations are quite the same of our system, a key difference is that they provide games that are implemented outside the working system, therefore lacking the continuous monitoring of performances and the higher degree of engagement due to the integration with the work environment.

Some commercial companies are working on offerings for the “gamification” of call centre work, which seem to be more oriented to exploit narratives in the game to motivate the users [9] and to use games [8] (“*Your avatar would participate in the game along with other agents. The concept of the game would be simple. Complete a mission – the agent’s task – and earn gems or badges.*”). [1] suggests an approach that also exploits games, but in that case they address call centres doing outbound activity (phoning customers or perspective ones) instead of inbound ones like in our case.

Rypple (<http://rypple.com>) proposes “a social performance platform built for teams to share goals, recognize great work, and help each other improve.” This tool essentially supports the definition of goals and people involved and the collection of relevant feedback on the individual’s work. Employees, their managers, and colleagues can access all or part of the collected feedback in real time, and use it to assess and evaluate performance. It does not include any linkage of real data on performance to quantified feedback (our credits mechanism). It is also a generic tool so not specifically designed for call centres.

Also related to our work are systems where virtual points can be gained and spent in online communities in a work environment. For example the Personal Assessment Tool [5], relates “green points” to the activity of printing. Green points are consumed when printing and when saved in the system they can be used to perform actions, e.g. a donation for an environmental cause.

5 Conclusion

The call center work environment is rich in challenges. The outsourcing business model requires efficiency in the operational management of the workforce. This can create differences in perspective between different layers of the operation, notably in that the agents may fail to see the relation between their work and the interests of the call center as whole. Through Agentville we are trying to bridge that difference in perspectives – notably by (a) providing agents with a higher degree of situational awareness with respect to the core performance metrics that drive their compensation and productivity of the whole operation; (b) integrating some game mechanisms directly into the call centre’s performance management strategies and information systems.

We are aware that this system faces some challenges. In particular, we understand that more access to information and better situational awareness will not on their own address contradictions between performance metrics and other factors like compensation mechanisms and organizational policies. But insofar as agents are required to balance factors which are correlated in non-obvious ways, better situational awareness can only ease the task. We also understand that game mechanics like the ones we propose here have yet to demonstrate their effectiveness in providing motivation outside of learning and training environments and over what is already implemented in the call centers we observed.

We designed our system based on our understanding of the call centers’ requirements and our ethnographic observations of agents at work. The current prototype of Agentville is ready to be deployed on a trial basis in a real-life production environment – we will gather data about its use in the coming months and hope to report on our findings in future publications.

References

1. ARCARIS (2011). <http://thenextweb.com/la/2011/08/26/how-chilean-born-arcaris-is-bringing-gamification-to-call-centres/>
2. Castellani S., Grasso A., O'Neill J., and Roulland F. (2009). "Designing Technology as an Embedded Resource for Troubleshooting". Computer Supported Cooperative Work (CSCW): Volume 18, Issue 2 (2009), Page 199.
3. GamificationOrg, (2011). <http://gamification.org/wiki/Gamification>.
4. GamificationEncyclopedia, (2011). *The Gamification Encyclopedia*. <http://gamification.org/wiki/Encyclopedia>, last accessed August 17th, 2011
5. Grasso M. A., Willamowski J., Ciriza V., and Hoppenot Y. (2010), "The Personal Assessment Tool: A System Providing Environmental Feedback to Users of Shared Printers for Providing Environmental Feedback". In Proc. of the Ninth Int. Conference of Machine Learning and Applications (ICMLA), 12-14 Dec. 2010, Washington, DC, US.
6. Martin, D., O'Neill, J., Randall, D., and Rouncefield, M. (2007). "How Can I Help You? Call Centres, Classification Work and Coordination". The Journal of Computer Supported Cooperative Work, Vol. 16, No. 2 pp. 231-264 Springer, Dordrecht NL
7. MEG, 2011. Media Evolution, *Gamification*, (2011).
8. Modelmetrics (2011). "Gaming the Call Centre" - April 19, 2011, <http://www.modelmetrics.com/joel-dubinskys-blog/gaming-the-call-centre/>
9. MOTIVITI, (2011) <http://www.motiviti.com/blog/serious-games-gamification/>, <http://www.motiviti.com/blog/playrocket-sneak-preview/>
10. Nikkila, S., Linn, S., Sundaram, H., and Kelliher, A. (2011). "Playing in Taskville: Designing a Social Game for the Workplace". CHI 2011 Workshop on Gamification: Using Game Design Elements in Non-Game Contexts.
11. Reeves, B. and Read, J. L., (2009). "Total Engagement: Using Games and Virtual Worlds to Change the Way People Work and Business Compete", Harward Business Press, Book.