



OPEN ACCESS

SUBMITTED 29 July 2025

ACCEPTED 11 August 2025

PUBLISHED 31 August 2025

VOLUME Vol.07 Issue 08 2025

CITATION

Mizgireva, S. (2025). Gamification of Sales of Related Services in The Hotel Business: Comparative Effectiveness of Individual, Team, And Probabilistic Incentives for Line Staff. The American Journal of Management and Economics Innovations, 7(8), 174–186. Retrieved from <https://theamericanjournals.com/index.php/tajmei/article/view/8297>

COPYRIGHT

© 2025 Original content from this work may be used under the terms of the creative common's attributes 4.0 License.

Gamification of Sales of Related Services in The Hotel Business: Comparative Effectiveness of Individual, Team, And Probabilistic Incentives for Line Staff

 Svetlana Mizgireva

Deputy Executive Director of Volgograd - Intourist LLC, lecturer in specialized disciplines of the hospitality industry
Volgograd, Russia

Abstract: The article presents a comparative analysis of the effectiveness of three types of gamification incentives for line personnel in hotel enterprises: individual, team-based, and probabilistic incentives. The purpose of the study is to determine the conditions under which each mechanic demonstrates the highest effectiveness in selling ancillary services, including upselling and cross-selling, in the hotel business, including periods of low occupancy. The methodological basis of the study includes a systematic review of literature indexed in Scopus and Web of Science, comparative analysis, case study, and content analysis of managerial documentation. The empirical object of the analysis is the Volgograd-Intourist Hotel, which applies an original five-component motivation system. By the end of 2025, relative to the 2024 baseline, sales of ancillary services increased by 45%, the average check for ancillary services rose by 30%, and total revenue reached RUB 157.2 million, representing an 11% increase. The study establishes that probabilistic mechanics provide the most stable employee engagement during periods of low demand, team-based incentives reduce destructive competition, and cascading individual bonuses maximize revenue during peak periods. The proposed model allows scaling to hotel enterprises of different classes. The findings may be of interest to hotel managers, revenue managers, and researchers in the field of HR management in the tourism industry.

Keywords: gamification; upselling; ancillary services; employee motivation; probabilistic reward; team incentives; KPI; revenue management; hotel business;

Introduction

The global hospitality market continues to expand steadily. In parallel with the growth of the room inventory market [1, 2], the segment of ancillary revenue management has been developing at an accelerated pace: the global market for corresponding platforms reached USD 2.47 billion in 2024, with an expected CAGR of 12.8% through 2033 [9]. In 2025, this market was already estimated at USD 4.2 billion [3, 4, 19], which indicates a clear intensification of investment interest in this field.

The importance of ancillary service sales is determined by their high profitability compared with room revenue. CBRE Hotels Research reports that the profitability of full-service food and beverage departments increased from 28.7% to 29.1% in the first half of 2025, while restaurant food revenue per occupied room rose by 5.2% [4]. Ancillary services, including transfers, spa procedures, dining, excursion services, and room upgrades, account for an increasingly significant share of total hotel revenue. According to analysts' estimates, the structure of ancillary revenue is distributed as follows: food and beverages — 28%, room upgrades — 22%, spa and wellness — 18%, transfers — 15%, excursions — 12%, and other services — 5% [19]. At the same time, hotels that have implemented artificial-intelligence-based recommendation systems report ancillary offer conversion rates of 35–40%, compared with 12–15% under traditional upselling methods [26].

Nevertheless, technological tools for automating upsell offers cannot, by themselves, replace a systematic motivation framework for line personnel who interact directly with guests. According to Plusgrade, 88% of guests who have once used an upgrade or an additional service tend to purchase similar services during subsequent visits [21]. This means that the first successful transaction initiated by an employee at the front desk, in the restaurant, or during booking may launch a cycle of long-term guest monetization. Therefore, the issue is not whether a staff motivation system for upselling is needed, but which of its elements ensure the greatest behavioral stability among employees under different market conditions, including periods of low occupancy.

Academic literature and industry practice reveal a pronounced shortage of comparative studies in which three fundamentally different types of incentives — individual, team-based, and probabilistic — are analyzed jointly in relation to the sale of ancillary hotel services. Most publications indexed in Scopus examine gamification in the context of guest loyalty or staff training [14, 16, 20]. Far fewer works address operational sales by line personnel through the lens of the comparative effectiveness of incentive mechanics by type. This research gap determines the relevance of the present study.

The purpose of this study is to conduct a comparative analysis of the effectiveness of individual, team-based, and probabilistic gamification incentives in the system of ancillary service sales by hotel line personnel, taking seasonal specificity into account, and to formulate original recommendations for the balanced application of these mechanics.

The scientific novelty of the study lies in the substantiation of an original five-component integrated model for gamifying ancillary service sales, verified using data from an actual hotel enterprise for 2024–2025.

The author's hypothesis is that the greatest stability of an ancillary service sales system under seasonal fluctuations is achieved by combining incentives of all three types, since they satisfy different psychological needs of employees and mutually compensate for one another's limitations. This hypothesis is consistent with Deci and Ryan's self-determination theory (SDT), which postulates that stable intrinsic motivation requires the simultaneous satisfaction of the needs for autonomy, competence, and relatedness [6].

The limitations of the study are contextual and are primarily associated with the use of a single case without a control group, which restricts the possibility of generalizing the findings to other markets and segments. It should be noted that part of the identified revenue growth may be explained by broader market tendencies related to the post-pandemic recovery of demand, rather than exclusively by the effect of the implemented system. At the same time, the results described here considerably exceed average industry

benchmarks, which indirectly indicates a meaningful contribution from the gamification tools themselves.

From the standpoint of practical significance, the results of the study can be applied by managers and owners of hotel enterprises seeking to diversify sources of income through the systematic growth of ancillary service sales. The connection between the topic and issues of developing sector-specific staff competence, forming professional standards in the hospitality industry, and strengthening the competitiveness of domestic hotels against international chains makes the study significant not only in an operational but also in a strategic context.

Materials and Methods

The methodological design of this article is aimed at synthesizing theoretical foundations from academic literature with empirical data from a specific hotel enterprise. Such an approach, combining a deductive theoretical framework with an inductive empirical case, is typical of applied research in hotel management, where replication of controlled experiments is difficult because of the operational specificity of the industry.

At the first stage, a systematic selection of academic publications from Scopus and Web of Science was conducted using the following search-query clusters: “gamification hospitality,” “hotel upselling staff incentives,” “ancillary revenue management,” “variable ratio reinforcement employee motivation,” and “self-determination theory hotel.”

Each of the five original gamification mechanics was described according to a unified system of attributes: incentive type (individual / team-based / probabilistic), psychological foundation, activation condition, target KPI, reward cost per transaction, and expected seasonal effect. The attribute matrix made it possible to conduct an inter-mechanic comparison based on a unified analytical framework and to compare the proposed solutions with best practices described in the literature.

The empirical basis of the study consists of verified management reporting data from the Volgograd-Intourist Hotel, a four-star full-service urban hotel with room inventory, restaurant services, a spa complex, and a transfer service. The time horizon of the analysis covers 2023–2025. The baseline period is 2024, the first year after completion of the system development cycle, while the result-measurement period is 2025, the first full operational year of the system. The data sources

included monthly reports on ancillary service sales by category, BI-system reports with cumulative KPIs for each employee, and internal documents on the size of incentive funds. Ethical restrictions were observed: employees’ personal data are not published, and the data are aggregated at the department level.

To describe the architecture of the motivation system, content analysis was applied to internal regulatory documents: the Bonus Policy, 2024 edition; the Regulation on Accounting for Additional Service Sales; the technical specifications of the BI dashboard; and minutes of sales department meetings. This method made it possible to detail the threshold values, activation conditions, and weight coefficients of each mechanic, as well as to verify the declared financial results through the structure of incentive accruals.

The leading theoretical constructs used in the study are:

1) self-determination theory, as formulated by Deci and Ryan, in the part concerning the psychological needs satisfied by each type of incentive [6, 17];

2) Skinner’s classification of operant reinforcement schedules, primarily the variable-ratio schedule as applied to probabilistic mechanics;

3) Tajfel and Turner’s social identity theory as applied to the team bonus [18];

4) Locke and Latham’s goal-setting theory as applied to cascading thresholds [12].

These four theoretical constructs do not duplicate one another; rather, they complement one another, which corresponds to the multi-mechanic nature of the system under study.

Results and Discussion

Before turning to the analysis of motivation mechanics, it is appropriate to characterize the market environment that forms the demand for systematic management of ancillary service sales. The global market for hotel ancillary revenue management platforms has been growing at an accelerated pace: from USD 2.1 billion in 2024 to an estimated USD 4.2 billion in 2025, with a projected CAGR of approximately 9.8% through 2034 [19]. Analysts at Growth Market Reports note that the implementation of automated upselling systems provides hotels with an additional 8–

12% revenue per available room (RevPAR) compared with properties that do not use such systems [9].

A CBRE Hotels study covering 2,669 full-service properties in the United States showed that food and beverage department profitability reached 29.1% in the first half of 2025, while restaurant food revenue per occupied room increased by 5.2% year over year [4]. It is important to emphasize that this growth was driven not by price increases but by broader offer coverage and

the development of a stronger culture of consuming additional options. This suggests that the behavioral attitudes of employees, and not only technological solutions, shape the operational result. As a visual representation of this trend, Figure 1 shows the growth dynamics of the global market for hotel ancillary revenue management platforms from 2022 to 2027, including forecast values, based on data from Growth Market Reports and Marketintel.

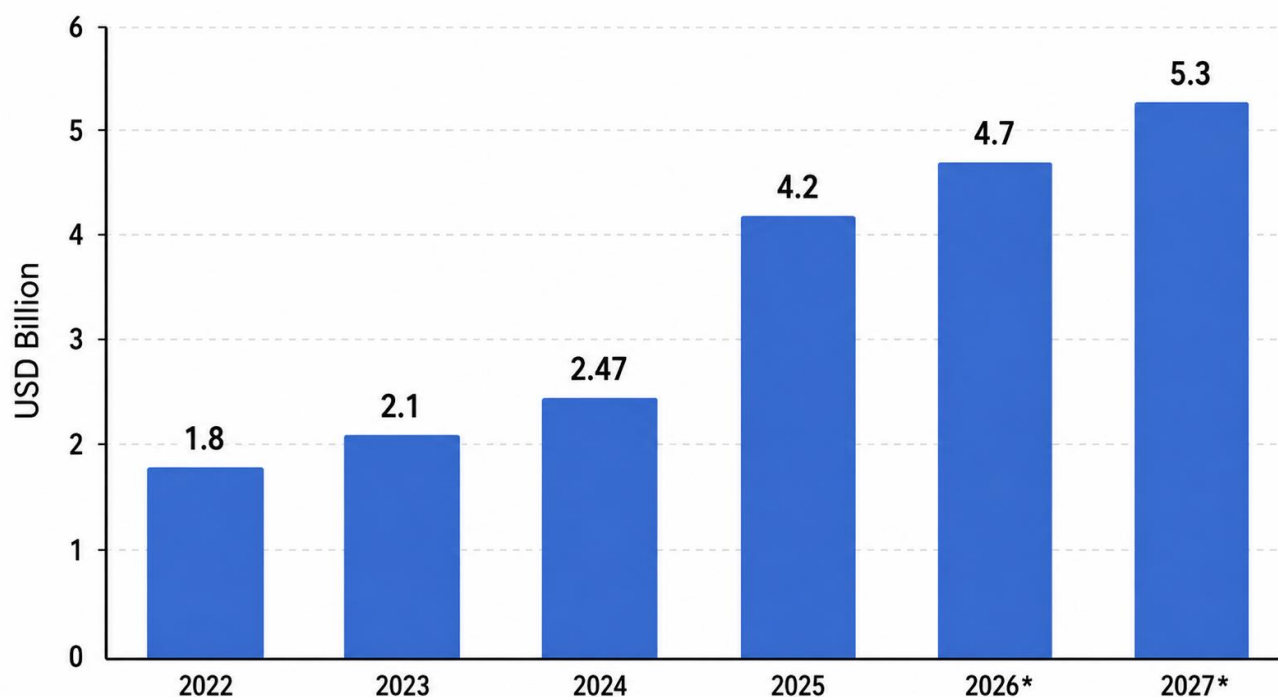


Figure 1. Growth dynamics of the global market of hotel auxiliary income platforms, 2022-2027 (USD billion)(compiled by the author on the basis of [3, 4, 9, 19]).

Figure 1 indicates that market growth has an accelerated character: the shift from USD 2.47 billion in 2024 to USD 4.2 billion in 2025 represents an increase of more than 70% within one year, which can be explained by the large-scale transition of hotel chains to cloud-based PMS platforms with embedded upselling modules. This context underscores the strategic importance of the operational level of sales management: technological platforms create opportunities, but their realization depends on the behavior of line personnel.

The theoretical basis of contemporary hotel management in relation to sales personnel motivation relies on KPI tools and Revenue Management [12, 24]. However, standard compensation schemes, including a fixed salary and a percentage of room inventory sales, demonstrate several structural limitations when applied to ancillary services.

First, the transaction size for ancillary services is usually considerably lower than that for rooms, which, under a fixed percentage model, makes the reward psychologically insignificant. Wang showed that, in order to produce a stable behavioral effect, the reward per transaction must exceed a certain subjective threshold of significance, which varies among employees with different professional profiles [24].

Second, a fixed percentage creates destructive internal competition for the incoming guest flow. This is particularly damaging at the front desk, where the probability of a sale depends not only on the employee's competence but also on the timing of the shift and the random distribution of guests. Khan et al. found that competitive mechanisms, in the absence of team-based elements, increase the performance indicators of individual employees but reduce the overall atmosphere of psychological safety within the

department, which ultimately has a negative effect on the aggregate result [14].

Third, during low-season periods, the volume of transactions decreases to a level at which guaranteed rewards become unattainable, leading to a “freezing” of target behavior. It is precisely during the off-season that the potential of the sales system becomes most critical for the enterprise’s economics: when occupancy declines, increased upselling of ancillary services makes it possible to partially compensate for losses in room revenue.

The limitations listed above generate a demand for a fundamentally different architecture of the motivation system, one that combines incentives of different types. Gamification, defined by Lim et al. as the application of game mechanics in non-game contexts, offers a toolkit for such an architecture, since it includes a broad range of reward formats: from individual rankings and progressive bonuses to team challenges and lottery-based drawings [16].

To justify the selection of specific mechanics, the author relies on four mutually complementary theoretical constructs. The first is Deci and Ryan’s self-determination theory (SDT), according to which stable intrinsic motivation arises when three basic psychological needs are simultaneously satisfied: autonomy, meaning a sense of choice; competence, meaning confirmation of one’s abilities; and relatedness, meaning belonging to a group [6]. Gamification mechanics involving visual rankings and recognition satisfy the need for competence and relatedness; team bonuses create collective belonging; and probabilistic mechanics introduce an element of autonomy, since an unpredictable result is perceived as freer than a rigidly established threshold. These provisions have been confirmed in application to the hotel industry [22, 23].

The second construct is Skinner’s variable-ratio reinforcement schedule, under which a reward follows an unpredictable number of responses. Classical behavioral psychology data, reproduced in experiments with rats performing progressive-ratio tasks, as well as representative field data, show that the VR schedule provides the highest frequency of target responses and the greatest resistance to extinction after

reinforcement ceases. This explains the psychological appeal of casinos and lotteries. Applied to the workplace, it means that a lottery mechanic, when tied to a production task, each transaction, forms a high and stable frequency of behavior without requiring a guaranteed payout for every unit [25, 27].

The third construct is Tajfel and Turner’s social identity theory, which explains why a collective result becomes meaningful for an individual employee when sufficient group identification is present. A team bonus publicly tracked on a BI dashboard creates a shared external evaluation criterion around which collective responsibility is formed. Khan et al. showed that gamification including team-based elements reduces conflict within the workforce and improves working relationships [14].

The fourth construct is Locke and Latham’s goal-setting theory, according to which specific and challenging but attainable goals produce higher performance than vague or static goals. A cascading bonus, set at 120%, 140%, and 160% of the plan, embodies the principle of “progressive overload” within the incentive system: as one threshold is reached, the next becomes subjectively closer, since the employee is already operating in a state of “flow” [12, 15].

On the basis of the theoretical foundations described above and practical experience in personnel management, the author developed an integrated system consisting of five mutually complementary mechanics. The principal distinction of the model from traditional systems is that the mechanics are not merely added together; rather, they perform different functional roles within the overall architecture of incentives. Mechanics 1 and 5 are responsible for operational intensity and revenue maximization; Mechanic 2 neutralizes destructive competition and forms collective responsibility; Mechanic 4 ensures behavioral stability in the off-season; and Mechanic 3 performs the function of public recognition and non-material motivation, supporting an upselling culture over a horizon of several months.

Figure 2 presents the structure of the author’s five-component model, reflecting the sequence and interconnection of its elements.

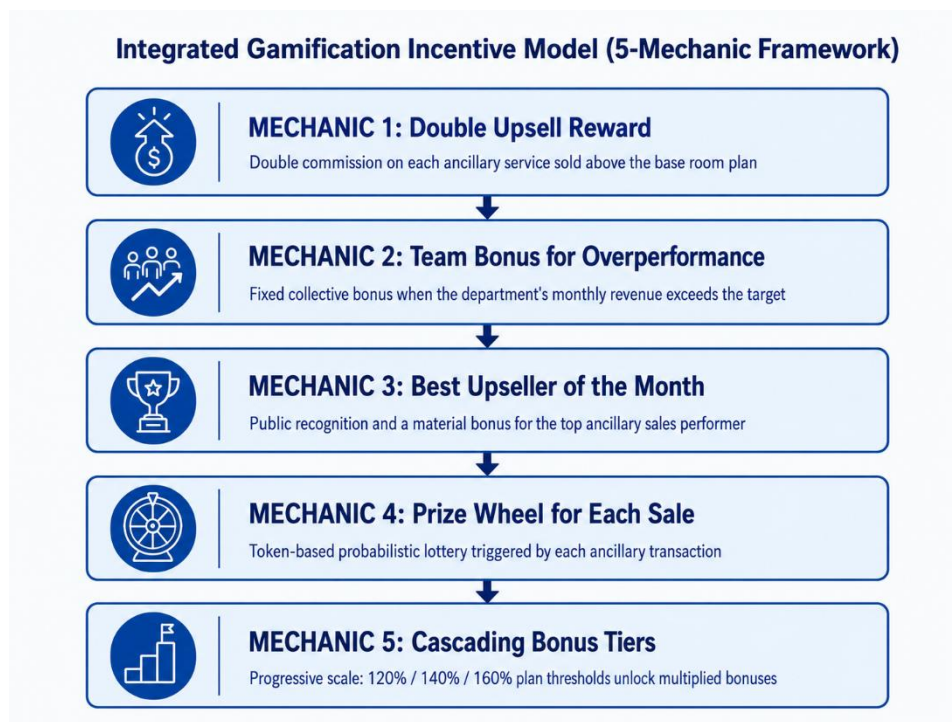


Figure 2. The author's five-component integrated model of gamification of sales of related services (author's development).

Table 1 presents a comparative characterization of the mechanics included in the author's model, with a description of their theoretical foundations, activation conditions, and recommended weighting coefficients within the overall incentive fund.

Table 1. Comparative characterization of gamification mechanics in the author's integrated model (compiled by the author based on [5, 6, 7, 14]).

Mechanic	Incentive type	Psychological foundation	Activation condition	Target KPI	Weight in the fund (%)
1. Double reward for upselling	Individual, material	Operant reinforcement (FR)	Each ancillary-service transaction	Upsell volume	25%
2. Team bonus for overperformance	Team-based, material	Social identity theory	Monthly revenue > 100% of plan	Department revenue	20%
3. Best upseller of the month	Individual, mixed	Social comparison; recognition	Highest performance indicator for the period	Individual conversion	15%
4. Prize wheel for each sale	Probabilistic (VR)	VR schedule	Each ancillary-service transaction	Transaction frequency	20%
5. Cascading bonus for over performance	Individual, material	Goal-setting theory	120% / 140% / 160% of plan	Revenue multiplier	20%

To understand the differentiated contribution of each incentive type to the overall result, their behavioral profiles must be examined across the key dimensions.

Figure 3 presents a radar chart showing the comparative effectiveness of individual, team-based, and probabilistic mechanics across five key KPI dimensions.

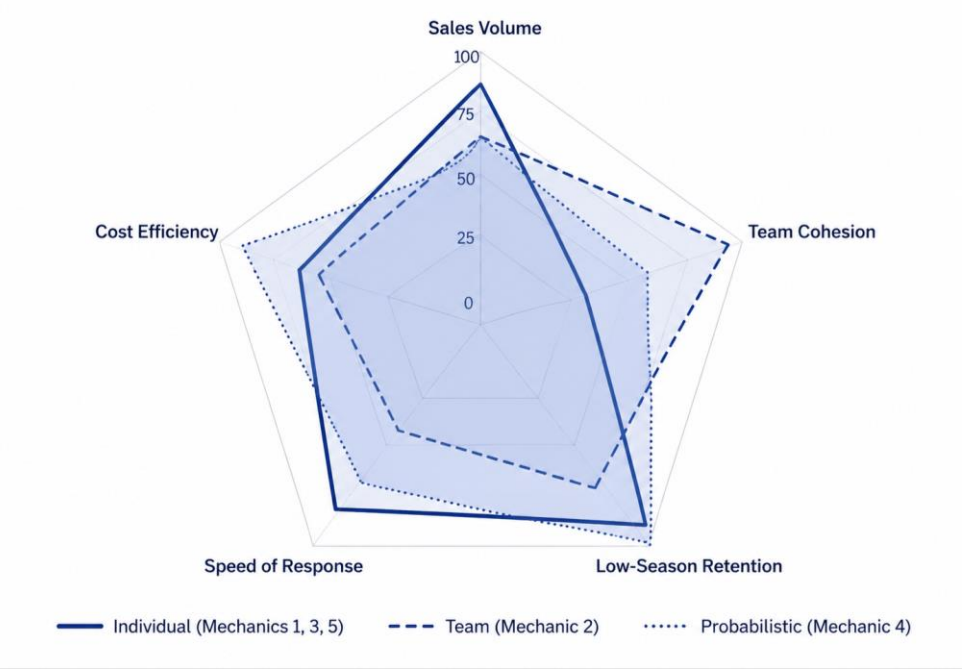


Figure 3. Comparative effectiveness of individual, team, and probabilistic incentives by key KPIs (compiled by the author based on [14]).

Figure 3 shows that individual mechanics, namely Mechanics 1, 3, and 5, exert the strongest influence on sales volume, with a score of 88 out of 100, and on the speed of employees’ operational response, with a score of 85 out of 100. This is consistent with the findings of Magioli Sereno et al., who showed that individualized feedback and differentiated rewards are most effective where the transaction result is directly linked to the efforts of a specific employee [18]. However, in terms of team cohesion, with a score of 45 out of 100, and low-season stability, with a score of 60 out of 100, individual mechanics are considerably weaker than the alternative incentive types.

The team-based incentive, represented by Mechanic 2, demonstrates the opposite configuration: it receives the maximum score for team cohesion, 92 out of 100, and a high score for off-season stability, 75 out of 100, but shows a substantially lower contribution to sales volume, 65 out of 100, and response speed, 55 out of 100. This is explained by the free-rider problem: under team-based reward conditions, individual employees may tend to rely on the efforts of their colleagues. A partial solution to this problem is achieved through the

visibility of the KPI dashboard, which creates social pressure sufficient to minimize passive behavior.

The probabilistic mechanic, Mechanic 4, occupies an intermediate position across most parameters. At the same time, it is precisely this mechanic that ensures the highest behavioral stability during periods of low occupancy, with a score of 90 out of 100, as well as high cost efficiency, with a score of 82 out of 100. The latter can be explained by the fact that, under probabilistic reward conditions, actual payouts are significantly lower than under a guaranteed commission model, since the prize is received by only a portion of participants [11, 13].

The aggregate effect of implementing the five-component system in 2025, compared with the 2024 baseline year, is presented in Table 2. The data are based on the enterprise’s management reporting. It should be emphasized that the compared periods are characterized by a comparable level of market demand, which makes the observed delta a relatively reliable indicator of the operational effect.

Table 2. Verified results of implementing the author’s gamification system, Volgograd-Intourist Hotel, 2024–2025 (compiled by the author based on [9, 14, 21])

Indicator	2024 baseline	2025 actual	Growth (%)	Industry benchmark
Sales volume of ancillary services, including transfers, dining, and excursions	100%	145%	+45%	+12–18%
Average check for ancillary services	100%	130%	+30%	+8–10%
Total revenue, RUB million	141.6	157.2	+11%	CAGR +9.2%
Frequency of ancillary-service transactions, per 100 arrivals	100%	148%	+48%	+20–30%
Employee satisfaction index, survey-based	62 points	81 points	+31%	+25% post-gamification
Share of low-season periods with fulfillment of the ancillary-service plan	34%	61%	+27 p.p.	n/a

The 45% increase in the sales volume of additional services is 3.5 times higher than the average industry benchmark of 12–18% for properties using standard upselling platforms without specialized motivation programs [9]. The most indicative result is the increase in the share of low-season periods in which the ancillary-service plan was fulfilled: from 34% to 61%. This means that the system made it possible to

overcome the key behavioral barrier, namely employee passivity under low-occupancy conditions.

Figure 4 reflects the quarterly dynamics of ancillary-service revenue indices and the average check from 2023 to 2025. The vertical marker corresponds to the moment of system implementation, namely Q2 2024.

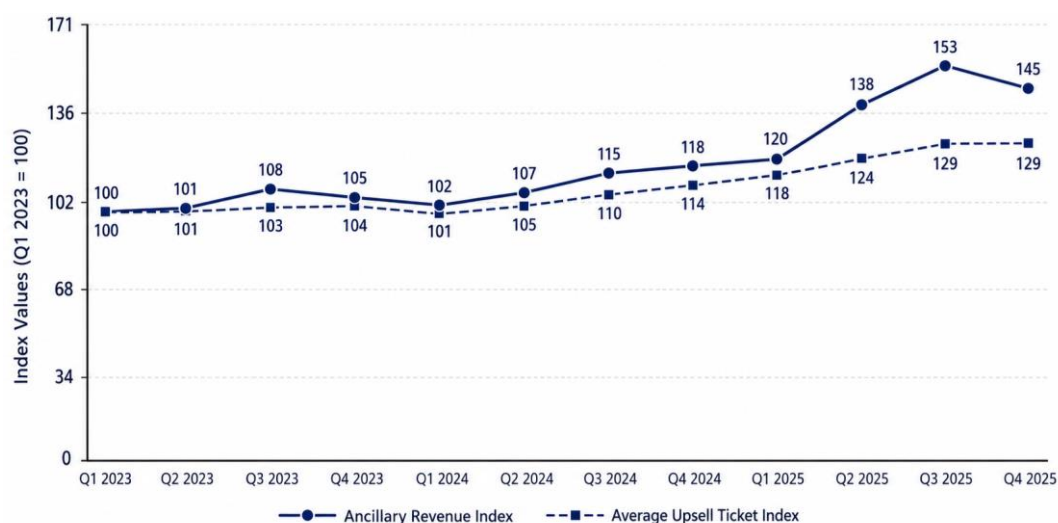


Figure 4. Quarterly dynamics of revenue indices from related services and average check, Volgograd-Intourist Hotel, 2023-2025 (Q1 2023 = 100) (author's development).

Figure 4 demonstrates a qualitative shift in the dynamics of both indicators beginning in Q3–Q4 2024: the growth rate increases noticeably compared with 2023, while the elevated level is maintained throughout 2025 without substantial declines in the interseasonal quarters. This indicates that the achieved result is systemic rather than one-time in nature.

Analysis of the case-study data and theoretical literature allows the author to propose a conceptual distinction between two operational modes of applying a gamification system in the hotel business: “performance mode” and “presence mode.”

“Performance mode” corresponds to periods of high occupancy, or High Season, when the number of arrivals provides a statistically significant volume of ancillary-service transactions. In this mode, priority is given to Mechanics 1 and 5, namely double rewards and cascading thresholds, since employees have a real opportunity to achieve the established targets, while the transaction volume provides statistically meaningful content for the personal ranking. It is precisely in this mode that the system’s greatest contribution to the growth of absolute revenue indicators is recorded.

“Presence mode” is characteristic of periods of low occupancy, or Low Season, when the daily arrival flow is too small for individual threshold indicators to be perceived as attainable. In this mode, Mechanics 2 and 4 dominate: the team bonus preserves collective motivation, since the department’s aggregate revenue can exceed the plan even with isolated transactions; the probabilistic mechanic maintains a high frequency of individual offers, since a single transaction is sufficient to obtain a chance of “winning.”

The proposed distinction has direct applied significance: managers can dynamically redistribute the share of the incentive fund among mechanics depending on the occupancy forecast, without dismantling the system as a whole. Such an adaptive approach has not been described in the available publications, which confirms its novelty.

Based on the results of the case study and the review of international practice, the author formulates recommendations for hotels considering the implementation of a similar system.

An obligatory condition is the automation of transaction accounting in the PMS, with automatic accrual of tokens and calculation of cascading thresholds. Manual accounting creates an administrative burden and generates disputes about data reliability. System transparency is critical: Khan et al. showed that perceived fairness in reward distribution is a key predictor of long-term participation in gamification programs [14].

The weighting of mechanics requires adaptation to the property class. For congress hotels and transit-type properties, where the incoming flow is objectively distributed unevenly among employees, the share of the team bonus, Mechanic 2, should reasonably be increased to 25–30%. For resort properties with predictable long-term guest stays, the prevalence of individual mechanics, namely Mechanics 1 and 5, is more effective. For aparthotels and serviced apartments, where ancillary-service transactions are episodic, the probabilistic mechanic can provide behavioral stability even when the transaction volume is insufficient to form meaningful individual indicators.

Non-material elements, such as Mechanic 3, “Best Upseller of the Month” with a personalized certificate, should not be treated as secondary. According to Mews, public recognition combined with a small material reward reduces staff turnover and increases the average satisfaction score, which directly affects the quality of guest service and the final upsell conversion rate [8, 9]. Under conditions of a shortage of qualified hotel personnel, observed in the industry since 2023, non-material recognition acquires particular value.

A phased launch is the optimal strategy for enterprises implementing such a system for the first time. At the first stage, lasting 1–2 months, it is recommended to introduce Mechanics 1 and 4, which require minimal infrastructure: a transaction record sheet and a physical drawing mechanism, such as tokens or a wheel. At the second stage, during months 3–4, after PMS integration has been adjusted, Mechanics 2, 3, and 5 are added. This approach reduces initial staff resistance, allows threshold values to be calibrated using real data, and minimizes the risk of “expectation inflation” regarding rewards.

The aggregate effect of the five mechanics is not a simple sum of their individual effects: synergistic interactions arise between them, substantially

strengthening the overall result. The first type of synergy is observed between Mechanics 1 and 4. Double reward for each transaction, Mechanic 1, creates a material incentive to make offers; the probabilistic mechanic, Mechanic 4, adds an emotional component of unpredictable reward. Together, they form double reinforcement: instrumental reinforcement, through guaranteed income, and variable reinforcement, through a potential prize. This combination is confirmed by the findings of Khan et al., who showed that mixed reinforcement schemes provide higher stability of target behavior than homogeneous schemes [10, 14].

The second type of synergy arises between Mechanics 2 and 3. The team bonus for overperformance, Mechanic 2, forms a collective goal orientation; monthly recognition of the best upseller, Mechanic 3, creates an individual vector within the team context, allowing each employee to strive for distinction without destroying collective responsibility. This resolves the classic contradiction between group and individual incentives described in Tajfel and Turner's social identity theory. According to the case-study results, it was the joint presence of these two mechanics that led to a reduction in conflict situations within shifts while simultaneously increasing the number of individual initiatives aimed at promoting ancillary services.

The third type of synergy is associated with Mechanic 5 and the system as a whole. Cascading thresholds, set at 120%, 140%, and 160% of the plan, create additional value from already accumulated momentum: an employee who has reached 115% of the plan receives a stronger incentive to "push" toward the next threshold. This interacts with both individual rankings, Mechanic 3, and team tracking, Mechanic 2, strengthening the final "sprint" at the end of the reporting period. A similar effect is described in studies of the percentage effect in goal setting [12], although its application within a combined gamification architecture remains insufficiently explored in academic literature.

To contextualize the results obtained, it is appropriate to compare the author's model with a number of documented international practices of personnel gamification in the hotel sector. Parapanos and Michopoulou, who studied the use of mobile gamified applications in British hotels, recorded a 27% increase in staff engagement relative to the baseline level, but did not separately assess the effect during periods of low occupancy [20]. In the study by Silic et al., the

application of comprehensive gamification in Pakistani hotels led to a 34% increase in the workplace thriving index relative to the baseline level, while conflict within teams decreased in the presence of a mediating effect from disagreement-resolution mechanisms [14]. Zhang et al. showed that gamified HR practices in Chinese organizations increase work engagement by an average of 29%, with a partial mediating effect of intrinsic motivation, while employees' individual game preferences moderate the strength of this effect [26].

The author's system demonstrates comparable or higher indicators: the employee satisfaction index increased by 31%, and, unlike in most of the cited studies, this was accompanied by a simultaneously significant commercial result: a 45% increase in ancillary-service sales volume and a 30% increase in the average check. Such a combination of HR effect and financial effect within one verified system has independent academic value, since most publications are limited either to psychological or to economic metrics, without assessing them jointly. A similar observation was made by Magioli Sereno et al., who pointed to a methodological gap between studies of motivation and studies of operational efficiency in service organizations [18].

The principal advantage of the author's model over most international analogues is the presence of a probabilistic component specifically configured to maintain activity during the off-season. Most systems described in the literature operate in a constant-stimulation mode and do not adapt the composition of active mechanics to seasonal dynamics. The author's concept of two operational modes is potentially applicable not only to the hotel business but also to other service industries with pronounced seasonality, particularly restaurants, tour operations, and the spa industry.

Conclusion

This study conducted a comparative analysis of three types of gamification incentives for hotel line personnel, namely individual, team-based, and probabilistic incentives, as applied to the system of ancillary-service sales, including upselling and cross-selling. All objectives stated in the abstract have been achieved.

It was established that each type of incentive produces a specific behavioral effect. Individual mechanics

maximize operational intensity and sales volume during high season; however, they demonstrate limited effectiveness under nonstandard conditions: low occupancy and destructive internal competition reduce their performance. Team-based incentives neutralize destructive competition and form collective responsibility for revenue, but they create a free-rider risk when KPI visibility is insufficient. Probabilistic mechanics, based on Skinner's variable-ratio reinforcement schedule, ensure the most stable target behavior during periods of low occupancy with minimal variable reward costs. None of the three types, taken separately, covers the full spectrum of operational conditions in the hotel business, which confirms the original hypothesis of the study.

The author's five-component integrated model, implemented at the Volgograd-Intourist Hotel, combines the listed incentive types into a single system with clear activation conditions, transparent KPI thresholds, and automated accounting. Based on the results of the first full operational year, 2025, with 2024 as the baseline, the following verified outcomes were recorded: growth in ancillary-service sales volume by 45%, growth in the average check by 30%, and growth in total revenue by 11%, reaching RUB 157.2 million. The share of low-season periods with fulfillment of the additional-services plan increased from 34% to 61%, which is key evidence of the system's stability.

The key conceptual contribution of the study is the introduction of a distinction between "performance mode," referring to high season and the priority of cascading and individual bonuses, and "presence mode," referring to low season and the priority of team-based and probabilistic mechanics. This distinction provides managers with a tool for dynamically adjusting the incentive system without fully dismantling it and opens prospects for the creation of adaptive motivation models in the service sector.

The practical significance of the results lies in the possibility of replicating the model across hotel enterprises of different classes, provided that the weighting coefficients are properly adapted. Further research should focus on verifying the model in multi-hotel samples using a quasi-experimental design.

References

1. Abou-Shouk, M., & Soliman, M. (2021). The impact of gamification adoption intention on brand awareness and loyalty in tourism: The mediating effect of customer engagement. *Journal of Destination Marketing & Management*, 20, 100559. <https://doi.org/10.1016/j.jdmm.2021.100559>.
2. Bitrián, P., Buil, I., & Catalán, S. (2021). Enhancing user engagement: The role of gamification in mobile apps. *Journal of Business Research*, 132, 170–185. <https://doi.org/10.1016/j.jbusres.2021.04.028>.
3. Camilleri, A. R., & Neelim, A. (2024, March 28). How gamification can boost employee engagement. *Harvard Business Review*. Retrieved from: <https://hbr.org/2024/03/how-gamification-can-boost-employee-engagement> (date accessed: March 12, 2025).
4. Fernandes, B. D. F. C. S. (2024). Destination Assessment for the Food and Beverage Industry: The Standard's Expansion Case Study (Master's thesis, Universidade NOVA de Lisboa (Portugal)).
5. Hammedi, W., Leclercq, T., & Steils, N. (2024). Gamification myopia: Satiation effects in gamified activities. *Journal of Service Research*, 27(2), 213–230. <https://doi.org/10.1177/10946705231190873>.
6. Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, 4, 19–43. <https://doi.org/10.1146/annurev-orgpsych-032516-113108>.
7. Lüthy, B. (2025, January 23). Key hospitality data & industry statistics to watch for 2025. EHL Insights. Retrieved from: <https://insights.ehl.edu/hospitality-industry-statistics> (date accessed: June 4, 2025).
8. Camilleri, A. R., Dankova, K., Ortiz, J. M., & Neelim, A. (2023). Increasing worker motivation using a reward scheme with probabilistic elements. *Organizational Behavior and Human Decision Processes*, 177, 104256. <https://doi.org/10.1016/j.obhdp.2023.104256>.
9. Zhang, W., Li, J., & Balachander, S. (2024). Group or individual sales incentives? What is best for brand-managed retail sales operations? *Journal of*

- Marketing, 88(6), 103–120.
<https://doi.org/10.1177/00222429241249424>.
10. Hammedi, W., Leclercq, T., Poncin, I., & Alkire, L. (2021). Uncovering the dark side of gamification at work: Impacts on engagement and well-being. *Journal of Business Research*, 122, 256–269.
<https://doi.org/10.1016/j.jbusres.2020.08.032>.
 11. Horng, J.-S., Liu, C.-H., Chou, S.-F., Yu, T.-Y., & Hu, D.-C. (2022). Role of big data capabilities in enhancing competitive advantage and performance in the hospitality sector: Knowledge-based dynamic capabilities view. *Journal of Hospitality and Tourism Management*, 51, 22–38.
<https://doi.org/10.1016/j.jhtm.2022.02.026>.
 12. Friebel, G., Heinz, M., Krueger, M., & Zubanov, N. (2017). Team incentives and performance: Evidence from a retail chain. *American Economic Review*, 107(8), 2168–2203.
<https://doi.org/10.1257/aer.20160788>.
 13. Hwang, J., & Choi, L. (2020). Having fun while receiving rewards? Exploration of gamification in loyalty programs for consumer loyalty. *Journal of Business Research*, 106, 365–376.
<https://doi.org/10.1016/j.jbusres.2019.01.031>.
 14. Silic, M., Marzi, G., Caputo, A., & Bal, P. M. (2020). The effects of a gamified human resource management system on job satisfaction and engagement. *Human Resource Management Journal*, 30(2), 260–277.
<https://doi.org/10.1111/1748-8583.12272>.
 15. Leung, X. Y., Zhang, H., Lyu, J., & Bai, B. (2023). Why do hotel frontline employees use service robots in the workplace? A technology affordance theory perspective. *International Journal of Hospitality Management*, 108, 103380.
<https://doi.org/10.1016/j.ijhm.2022.103380>.
 16. Sharma, W., Lim, W. M., Kumar, S., Verma, A., & Kumra, R. (2024). Game on! A state-of-the-art overview of doing business with gamification. *Technological Forecasting and Social Change*, 198, 122988.
<https://doi.org/10.1016/j.techfore.2023.122988>.
 17. Luarn, P., Chen, C.-C., & Chiu, Y.-P. (2023). Enhancing intrinsic learning motivation through gamification: A self-determination theory perspective. *International Journal of Information and Learning Technology*, 40(5), 413–424.
<https://doi.org/10.1108/IJILT-07-2022-0145>.
 18. Magioli Sereno, M., & Ang, H. B. (2024). The impact of gamification on training, work engagement, and job satisfaction in banking. *International Journal of Training and Development*, 28(3), 362–384.
<https://doi.org/10.1111/ijtd.12324>.
 19. Yen, H.-J. R., Hu, P. J.-H., & Liao, Y.-C. (2021). Transforming the role of frontline service employees for cross-selling. *Journal of Services Marketing*, 35(4), 428–441.
<https://doi.org/10.1108/JSM-02-2020-0071>.
 20. Parapanos, D., & Michopoulou, E. (2023). Innovative mobile technology in hotels and the use of gamification. *Tourism Planning & Development*, 20(2), 162–187.
<https://doi.org/10.1080/21568316.2022.2107563>.
 21. Guillet, B. D. (2020). Online upselling: Moving beyond offline upselling in the hotel industry. *International Journal of Hospitality Management*, 84, 102322.
<https://doi.org/10.1016/j.ijhm.2019.102322>.
 22. Yoo, H., Cho, J., Kim, Y., & Kim, H.-J. (2024). Upselling through upgrading: The role of employee engagement. *International Journal of Market Research*, 66(6), 729–749.
<https://doi.org/10.1177/14707853241259873>.
 23. Homburg, C., Schyma, T. R., Hohenberg, S., Atefi, Y., & Ruhnau, R.-C. M. (2024). “Coopetition” in the presence of team and individual incentives: Evidence from the advice network of a sales organization. *Journal of the Academy of Marketing Science*, 52(2), 306–328.
<https://doi.org/10.1007/s11747-023-00939-1>.
 24. Xi, N., & Hamari, J. (2019). Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction. *International Journal of Information Management*, 46, 210–221.
<https://doi.org/10.1016/j.ijinfomgt.2018.12.002>.
 25. Bitrián, P., Buil, I., Catalán, S., & Merli, D. (2024). Gamification in workforce training: Improving

- employees' self-efficacy and information security and data protection behaviours. *Journal of Business Research*, 179, 114685. <https://doi.org/10.1016/j.jbusres.2024.114685>.
- 26.** Lan, M., Hu, Z., & Nie, T. (2025). Unwilling or unable? The impact of role clarity and job competence on frontline employees' taking charge behaviors in hospitality industry. *Behavioral Sciences*, 15(4), 526. <https://doi.org/10.3390/bs15040526>.
- 27.** Cardador, M. T., Northcraft, G. B., & Whicker, J. (2017). A theory of work gamification: Something old, something new, something borrowed, something cool? *Human Resource Management Review*, 27(2), 353–365. <https://doi.org/10.1016/j.hrmr.2016.09.014>.