# Ensuring efficiency through employee onboarding: case from Latvia

**Nadezda KOLEDA, Guna CIEMLEJA**
Faculty of Engineering Economics and Management, Riga Technical University
Riga, LV-1048, Latvia

**Jarmila STRAKOVA**
Institute of Technology and Business in Ceske Budejovice, Czech Republic
370 01 Ceske Budejovice, Czech Republic

## ABSTRACT

New employee onboarding plays a crucial role in efficiency of companies operating in the contact centre industry, where the share of labour costs is very high. There is a strong relationship between employee experience and company profitability ratios. Research shows that companies with a high positive new employee experience can increase their efficiency ratios; however, many companies still require a lot of improvement in their employee onboarding process. The purpose of this research is development of concept for new employee onboarding to improve contact centre companies' efficiency. The new employee onboarding concept developed was introduced and approved in a contact centre in Latvia using LEAN, case study, and experimental design approaches. Key conceptual improvement was: 1) use of the A3 method for problem solving sessions; 2) Fishbone approach for root cause analysis; 3) implementation and monitoring of onboarding KPIs; 4) identification of critical performance points as a tool for managerial decisions to minimize excessive costs for onboarding at different stages of employee integration.

**Keywords**: new employee onboarding; speed to proficiency; efficiency, LEAN.

## 1. INTRODUCTION

New employee onboarding plays a crucial role in the efficiency of companies operating in the contact center industry, where the share of labor costs can reach 70% of total costs [1]. There is a strong relationship between employee experience and profitability ratios. Research shows that companies with positive new employee experience have double to triple higher efficiency ratios than those with negative new employee experience [2]. Despite this, surveys show that 88% of companies still require significant improvements in the onboarding process of their employees [3]. The purpose of this research is the development of a concept for the onboarding of new employees for companies operating in the contact center industry to improve the efficiency of companies.

## 2. INSIGHTS INTO NEW EMPLOYEE ONBOARDING CONCEPT

### 2.1. New employee onboarding concept

The concept of new employee onboarding is a controversial issue among scientists, managers, and practitioners. The literature review presents varying interpretations of the new employee onboarding concept connected to organizational socialization, new employee integration processes and methods, self-confidence, new hire (new employee) performance, and proficiency. Some authors, like Talya N. Bauer, Berrin Erdogan, define onboarding as the process of supporting a new employee (new hire) to adapt quickly and smoothly to social and industrial dimensions [4], a process through which new employees move from being organizational outsiders to becoming organizational insiders [5]. Connie Wanberg suggests distinguishing the term 'onboarding' from organizational socialization, pointing out that onboarding is more related to applied practices (mentoring, clarification of roles, etc.) and is one of the factors influencing successful organizational socialization [6]. Within the framework of this study, the term "adaptation" is defined by authors as the process and methods used to integrate a new employee into job role from the moment of hiring to the moment of special autonomy in the performance of direct duties.

There is a lot of literature on practices of onboarding and organizational socialization, such as: development of onboarding programs for self-confidence and related tracking tools, conversation guides, role clarity, social integration, knowledge of culture, application of feedback tools, etc. Despite numerous studies of programs, needs and components for successful onboarding, insufficient attention is paid to indicators for assessing, monitoring and managing onboarding process, as well making proper managerial decisions during onboarding process [7, 8].

Currently, the quality and effectiveness assessment of new employee onboarding is based mainly on metrics such as the the employee net promoter score (e-NPS), quality of hire, employee experience, retention, earlier attrition, time to proficiency, speed to proficiency (i.e. speed to competency) [9, 10, 11]. Since e-NPS is a subjective measure provided by the employee, retention and attrition rates are impacted by labour market, the authors of this paper focus on time and speed to proficiency (competency) as a key indicator of onboarding quality and effectiveness, which represents the alignment of performance to the employer expectations and is driven by decisions and actions that the company takes from recruitment moment to the end of On Job Training (OJT). Within this research the quality definition is used as a measure of excellence of interrelated work items (like tasks, procedures, steps). It is a measurement characteristic that indicates whether a given process is carried out with tolerant defects, minimized deficiencies, and insignificant variations. Higher quality of a process means that relationships between the components of the process are successfully built and sustained throughout the process lifecycle, so the entire process is completed according to the needs and requirements [12].

**2.2. Time and speed to proficiency (competency) as metrics of new employee onboarding process**

In the academic and business environment, there is no common understanding of definitions and metrics of time to proficiency (T2P) and speed to proficiency (competency). Despite the high dependence of proficiency standards on industry, company, and employee role, some authors provide rather specific definitions and criteria for time-to-competence, such as:

− Time to proficiency is the length of time from the first day in a new job role to the day that the employee becomes proficient. Proficiency is reached when an employee can perform tasks without assistance and without errors. Essentially, proficiency is reached when the employee is independently productive [13];

− Time to proficiency is the number of days or weeks it takes for a new agent to become fully proficient, etc. Meeting production standards in terms of Average Handle Time (AHT), Quality Assurance (QA) scores, Customer Satisfaction (CSAT) scores, Hold Time, Ability to handle 90% of calls without asking for help [14];

− Time to proficiency means the length of time it takes to bring people with different attributes to target levels of task performance [15].

Time-to-proficiency can be measured in days, months, or years, and it varies depending on industries and roles. Some surveys and studies show that the time to performance of new bankers is 11-14 months, of pilots, 1500 hours, of call center agents, more than 6 months, of new sales representatives, approximately one year [16]. The term speed to proficiency (S2P) is often used as the same T2P, i.e., the, the, the time an individual or team takes to reach the level of competence, however, analysis of the literature shows that the terminology of S2P is applied mostly within practices to shorten T2P [17]. Most researchers focus on the target level for the proficiency KPI and do not offer the methodology for determining the critical point of the corresponding KPIs to eliminate waste - minimize irrational costs of onboarding underperforming employees by taking managerial decisions in a timely manner.

**2.3. The impact of speed to proficiency on the efficiency of a contact center company**

The time it takes an individual to acquire the skills necessary to reach a level where his performance can be considered 'proficient' is called time to proficiency [18]. This is generally measured either from his day of hire or from the day he takes the first training course. The achievement of proficient level on the timeline is presented below, Figure 1.
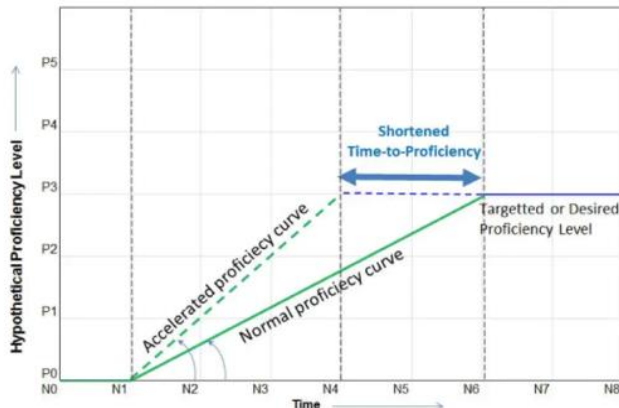


**Figure 1.** Level of proficiency on the timeline [19].

During the onboarding period the costs for employee integration include hiring and training costs, as well as costs related to assistance and OJT while the employee is not completely independent and, as a result, productive (Figure 2).
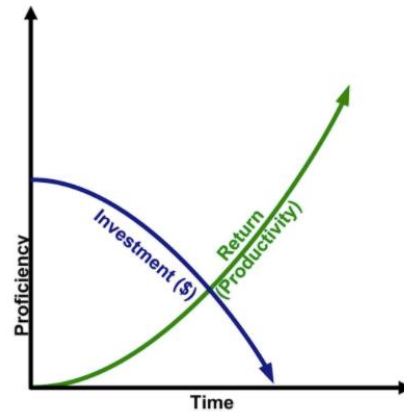


**Figure 2.** Impact of onboarding on efficiency of company [13].

Understanding this length of time from Day 1 to Graduation Day, and from Graduation Day to Independence Day is one of the first steps in developing the Learning Path (Figure 3) [13].
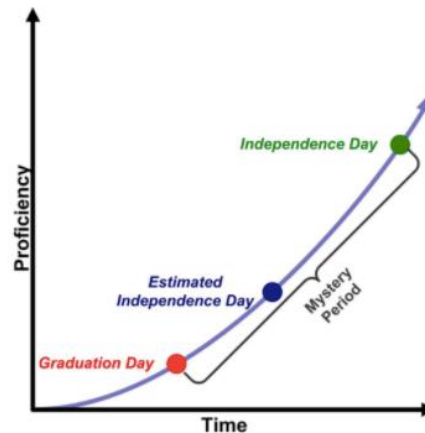


**Figure 3.** Learning Path [13].

Rather often contact centres measure training time and ignore the importance of time to independence, which is important for productivity of employee.

**3. RESEARCH METHODOLOGY: DEVELOPMENT OF NEW EMPLOYEE ONBOARDING AS A TOOL FOR INCREASING EFFICIENCY**

**3.1. Research approach**

In the preliminary stage of study, the authors applied exploratory research approach to investigating a complex and poor defined problem. The authors adjusted research directions based on the revelation of new data and insights. The authors considered the scenario in which the review and implementation of new methods for new employee onboarding would improvement speed to proficiency and increase efficiency. Research question was: what new practices and methods for employee onboarding will ensure speed to proficiency and improve company's efficiency in a contact centre industry? The speed to competency as a metric of onboarding process was a main subject of the study. The research

methodology was based on LEAN approach at all stages of onboarding concept development focusing on minimization of waste [20]. As a part of this approach the problem-solving session was conducted using a structured problem-solving method - A3 format [21]. The algorithm of it supposed the following steps:

- Determination of the problem statement, breaking down and prioritization of problems;
- Determination of current and future state;
- Root-cause analysis;
- Developing countermeasures;
- Implementation of countermeasures (approbation);
- Assessment of results and corrective actions.

The authors have applied mixed approach for development of new employee onboarding concept and its approbation, used case study research and experimental design. The case study approach is particularly useful to employ when there is a need to obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural real-life context. In contrast to experimental designs, which seek to test a specific hypothesis through deliberately manipulating the environment, the case study approach lends itself well to capturing information on more explanatory 'how', 'what' and 'why' questions [22]. Experimental research is a scientific approach to research, where one or more independent variables are manipulated and applied to one or more dependent variables to measure their effect on the latter. The effect of the independent variables on the dependent variables is observed over some time, to aid researchers in drawing a reasonable conclusion regarding the relationship between these variable types. It is based on the comparison between two or more groups, experimental research designs involve collecting quantitative data and performing statistical analysis on them during research [23]. Case study sampling was 192 New Hires (January 2018-April 2019) and experimental research sample was 236 New Hires (from April 2019).

### 3.2. Exploration of research question and preliminary data analysis: case study approach

The evaluation of impact of new employee onboarding process on efficiency of investigated company was based on monitoring of 1 year and 2 months financial, HR, standard contact centre and some new introduced KPIs: the average size of new hire group; the average time for onboarding of new hire group before on job training (OJT); average time to proficiency, i.e. reaching level of independence 70% of proceeded contact volumes; AHT (average handling time). The authors proposed the following formula for onboarding costs per year (1):

$$C = CP + LO, \qquad (1)$$

where:
$C$ – onboarding costs per year;
$CP$ - costs to proficiency;
$LO$ - lost opportunities.

$$CP = ADC * ADP * ANE, \qquad (2)$$

where:
$CP$ – costs to proficiency per year;
$ADC$ – average daily costs per new employee;
$ADP$ – average number of days to proficiency;
$ANE$ – average number of hired new employees per year.

$$LO = P * V * (AHTne - AHTee)/AHTee, \qquad (3)$$

where
$P$ – price per contact paid by companies' client, who outsource

the contact centre services, EUR per call without VAT;
$AHT \ ne$ – average handling time per 1 new employee, seconds/call;
$AHT \ ee$ – average handling time per 1 experienced employee, seconds/call;
$V$ – call volume handled by new hires per year.

Lost opportunities were defined by authors as potentially paid contact volumes that could be proceeded if the average handling time (speed of proceeding the contact) of new employee would be the same as experienced employee. Mentioned calculations allowed to explore the research problem and question. Gathered data presented that the share of onboarding costs (incl. lost opportunities) in total costs of the investigated company was 14%.

The impact of new employee onboarding on efficiency of company was defined as difference between potential ROC (Return on total costs excluding onboarding costs) and actual ROC. The investigated company would increase the ROC by 16% maximum in the positive theoretical scenario, supposing attrition rate is 0% and company is fully staffed.

### 3.3. Determination of the problem statement, breaking down and prioritization of problems by A3 format

The performance of employees in the investigated company is measured by attainment to the target of indicators: Average Handling Time (AHT) – speed to complete the request and quality assurance score (QA). Achievement of both targets means that employee gets the Inliers status. The analysis of performance of new employees in 2018-2019 years showed that more than half of new employees can't reach the Inlier status within 3 months after OJT completion (Table1). The share of Inliers among new hires and its trend by tenure is the most crucial indicator of speed to competency and quality of onboarding process in the company.

**Table 1.** Share of Inliers among New Hires by tenure

| Observed period | 1st month after OJT | 2nd month after OJT | 3rd month after OJT |
|---|---|---|---|
| 2018-2019 February | 2% | 14% | 20% |
| 2019 March-2019-April | 5% | 7% | 38% |

Detailed investigation of speed to proficiency by AHT and Quality, showed that speed to proficiency by QA is high, the share of Quality Inliers is close to 90% already by 10th week after recruitment. However, the AHT target is not reached by majority of new employees within 12 weeks and weekly improvement trend is very slow (Figure 4).
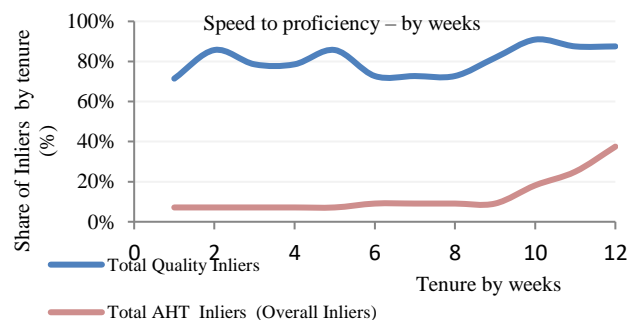


**Figure 4.** Speed to proficiency by weeks

As a result of performance analysis, the strategic goal was defined as "improvement of speed to competency of new employees". Since the established target for share of Inliers within 1st month after OJT in the company is 80%, and actual result is 6%, the statement of the main problem was determined as "at least 74% of new employees needs to achieve Inlier performance level within 1st month after OJT". This problem was broken down during the second stage of problem-solving session into 3 categories - not reachable target, not reaching AHT target, not reaching Quality Target (Figure 5).
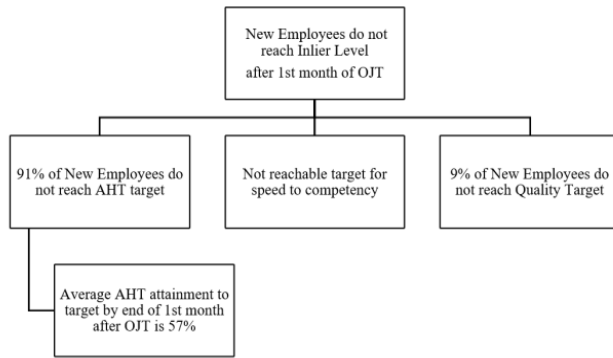


**Figure 5.** Speed to proficiency by weeks

The problem split into categories is a basis for prioritization of issues, which should be solved primary. The prioritized problem was defined as "low AHT target attainment by end of the 1st month after full training completion by new employees". Problem solving target was defined as "improvement of average AHT target attainment for the 1st month after full training completion to 75% by end of Q3 2019 to ensure improvement of speed to proficiency".

### 3.4. Root Cause analysis of problem: case study
The root cause analysis (RCA) of the problem was conducted using Fishbone approach, introduced by Kaoru Ishikawa [24] and widely applied within LEAN methodology. The development of countermeasures (actions) was based on results identified by Fishbone approach, considering root-cause topicality as well as flexibility to change it.

### 3.5. Development of countermeasures: case study
During problem solving session the assessment of required actions was conducted (Table 2):

**Table 2.** Assessment of identified countermeasures

| Countermeasure | Costs | Effectiveness | Feasibility |
|---|---|---|---|
| Implementation of additional KPI | low | high | high |
| Improvement of certification process | high | high | medium |
| Improvement of OJT process | medium | high | medium |
| Improvement of overall onboarding program and implementation of pilot project | medium | medium | medium |

After conducted assessment four actions were accepted for implementation and approbation, positive decision on pilot project implementation for onboarding approach improvement was made.

## 4. RESULTS OF APPROBATION OF THE METHODOLOGY: CASE FROM LATVIA

### 4.1. Experemental design of countermeasures
Experimental design of countermeasure "additional KPI implementation" supposed several stages:
– Implementation of new employee performance criteria for hiring, training and OJT periods (Table 3);
– Monitoring of employee performance by KPI related to speed to proficiency –AHT after onboarding periods;
– Identification of correlation between monitored criteria's and new hire performance KPIs after onboarding process (Table 4).

**Table 3.** New employee performance criteria

| Monitored criteria | Stage of Onboarding | Description |
|---|---|---|
| Score in a role game | Profile screening during hiring | Results of role game - simulative customer service, evaluation made by HR and Team leaders – experts in customer service |
| Score of personality | Profile screening during hiring | Internally developed personality test applicable for agents serving customers |
| Score for numerical skills | Profile screening during hiring | Internally developed test applicable to assess analytical skills |
| Score for multitasking | Profile screening during hiring | Internally developed test applicable to assess multitasking skills |
| Score for simulative tasks: lower complexity level | Training | Internally developed practical task supposing simulation of transaction processing (easiest) in the systems during the contact |
| Score for simulative task: average complexity level | Training | Internally developed practical task supposing simulation of transaction processing (average complexity) in the systems during the contact |
| Score for simulative task: highest complexity level | Training | Internally developed practical task supposing simulation of transaction processing (difficult) in the systems during the contact |
| Average score on daily tests | Training | Internally developed daily express-tests on previous day topics |
| Score for Practical tasks | Training | Internally developed comprehensive practical tests in a written form |
| Average autonomy level during OJT | OJT | Average share of independently handled (without assistance) contacts during OJT period, tracked by assistant using implemented scoring sheets. |

The next results were received after monitoring criteria, KPIs and correlation analysis.

**Table 4.** Results of monitoring the criteria

| Monitored criteria | Correlation between Criteria and Performance of New Hire by AHT (r, Pearson coefficient) |
|---|---|
| Score in a role game | Medium positive correlation (0.32) |
| Score of personality | Poor positive correlation (0.12) |
| Score for numerical skills | Poor positive correlation (0.02) |
| Score for multitasking | Medium positive correlation (0.31) |
| Score for simulative tasks: lower complexity level | Poor positive correlation (0.06) |
| Score for simulative task: average complexity level | Poor positive correlation (0.13) |
| Score for simulative task: highest complexity level | Medium positive correlation (0.31) |
| Average score on daily tests | Poor positive correlation (0.12) |
| Score for Practical tasks | Poor positive correlation (0.15) |
| Average autonomy level during OJT | Very poor correlation (0.05) |
| Autonomy level on last day of OJT | Medium positive correlation (0.31) |

Since the new hire performance mostly correlates to the next criteria – autonomy level on last day of OJT day; simulative task with highest complexity level, score for role game and multitasking – they have been chosen as main certification metrics. The new hire failed under the critical point of them (proposed formula 4) should be removed, go through individual action plans or individual onboarding program.

$$Cr = AVG - STD, \qquad (4)$$

where
$CR$ – critical point for certification metric;
$AVG$ – average score for monitored new employees
$STD$ - standard deviation.

Identification of critical points (Table 5) allows eliminate excessive costs for onboarding new employees.

**Table 5.** Identified critical points for criteria of certification

| Criteria | Identified critical point for the certification |
|---|---|
| Autonomy level during last OJT | 23% |
| Score for simulative task: highest complexity level | 0.7 |
| Score for Role game results | 2.4 |
| Multitasking | 4.14 |

OJT and onboarding process improvements supposed tracking the call handling by speed and quality, monitoring independence ratio, restructuring the training agenda and other specific actions required according to Fishbone Root-cause analysis. Monitoring of the results were continuously reported to HR and quality manager to assess the following risks:
– Too high performance (independence level reaching 73% (bases on case study) may lead to demotivation of employee due to over qualification and requires new additional motivational instruments;
– Too low performance may lead to excessive costs for assistance.

The pilot project was conducted during the 6 months. On each of stage of onboarding the decisions on removal or adjustment of onboarding program were made based on comparison of new employee performance to critical points of certification for the share of new hires:
– Certification during Training - 7%
– Screening during recruitment on multitasking - 4%;
– Screening during recruitment on role game - 20%.

The decisions on corrective actions allowed to minimize excessive costs on onboarding by 2% and minimize lost opportunities (due to AHT improvement) by 27%.

**Table 6.** Results of pilot project

| KPI | Before Pilot | After Pilot |
|---|---|---|
| AHT attainment to target 1st month | 57% | 64% |
| Quality attainment to target 1st month | 109% | 117% |

The share of new employees with performance results higher then critical point of was improved by 15%.

## 5. CONCLUSIONS

As a result of pilot project, the company could decrease salary costs, training costs, recruitments costs, direct production costs and improve attrition. The pilot results during the half of year increased the ROC by 1%, during the long-term period of time it will have a positive effect on customer satisfaction and excessive costs for mistakes due to quality improvement.

The developed concept for new employee onboarding can be applied in other industries with adjustments required for a specific company. The key to successful and efficient implementation of methodology is application of LEAN and experimental design of pilot project. Further study may include more comprehensive overview and guidelines for managing each of factors, identified during the root-cause analysis by Fishbone approach, but in most cases, they will remain applicable to similar companies from similar industry, job roles and types of contacts within customer service.

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