Short Paper

Improve IT Business Process Performance Using AI and Deep Learning

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Abstract

Perfection is an ambitious goal. However, it's right to say that in-Service Management we aspire to do the best we possibly can. We improve our performance through practice, but for real acceleration, we need to take a fresh approach. "IT is the backbone of the modern enterprise"—if this is the case and we demand a consistently high level of performance from our IT staff now is the time to think about how best to achieve this. With the use of AI powered autonomous micro-learning coupled with machine learning, employees can now be evaluated and coached by providing instance learning and feedback in real time so as to improve process performance.

Keywords

IT business, service management, CSI (Continual Service Improvement) Machine learning, artificial intelligence, employee coaching, micro coaching, performance improvement

1. Introduction

Today's business leaders are faced with multifaceted issues of managing talents in the organization. The process of managing performance is now more complex which has led to organizational managers to seek out a novel and more effective performance in the IT services using machine learning, continuous micro coaching and feedback, and other management techniques (Mike, 2018). From declining employee commitment levels (only 33% of U.S. employees were retained as of Oct. 2017, according to Gallup) to increase turnover rates, the issues hounding the modern workplace can't be solved using outdated feedback approaches (Sushman, 2018).

Appraisal periods are stressful and high overhead for both the employee and manager. They take a long time to prepare and deliver and often end up as a chore, rather than something to look forward. Appraisals aren't iterative enough. Even with bi/annual appraisals, we are limiting ourselves to very

few opportunities for feedback. If the average IT worker changes jobs every four years or so it's incredible to think that we only took eight opportunities to improve.

In my opinion, this is an ineffective method for many reasons.

1.1 Research Objective

The broad objective of this paper is to ascertain how to increase IT Services and Process performance using Machine Learning powered virtual coach and Continuous Feedback Loop. The specific objectives include:

– To determine the importance of improvement in performance due to a real-time micro coaching and instance learning feedback.

– To understand the effect of machine learning powered virtual coaching on organization performance.

1.2 Research Question

– Does improvement with micro coaching and learning feedback affect organization performance?

– How does AI and Deep Learning help affect organizational performance by automatically providing assessment feedback and real-time micro learning recommendation?

1.3 Conceptual Framework

With newness and changes going on in the workplace variables such as in workers demographics, new technologies coming into play, and a briskly embryonic talent marketplace, IT organizations need to move beyond annual or semi-annual performance evaluation to real-time performance management and continuous feedback loop (Mike, 2018). Most importantly, IT organizations now have started taking note of this changes in the performance evaluation process. Organization leaders have now realized the importance of engaging in an open dialogue on employee contribution throughout the year instead of holding employees accountable for past behaviors (Randall & Jim, 2015). Posited that this continuous evaluation and feedback loop offers ample opportunity to managers to have a meaningful and forward-looking conversation and professional development for IT personals. This continuous process feedback loop results in better engagement and improves performance and productivity.

1.4 Machine Learning (ML) and Increase Performance

There's been much news on the web space and around in recent years on the significance of machine learning and how it is going to change the future of the world and ways of evaluating the performance of employees in the organizations. Machine learning can now aid managers in various sectors of the economy. This help creates some exciting software's and applications in fields such as in the health, education, transport and IT sector. Developing machine learning and improvement in the IT services has left a tangible footprint there. This can be seen in the in-road into machine learning and Artificial intelligence.

Machine learning in the IT delivery deals with task automation. Machine learning focuses on monitoring every step taken in the automation of an application and software delivery process. This ensures that the

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software's work optimally. This machine learning automation helps in augmenting human efforts by setting up a repeatable process of the continuous feedback loop through the promotion of work efficiency and a reduction in erraticism.

ML are perfect fits for the collation of vast amounts of information, so as to help perform menial tasks, freeing the IT staff to do more targeted work. Artificial intelligence through machine learning can learn patterns, anticipate problems and suggest solutions.
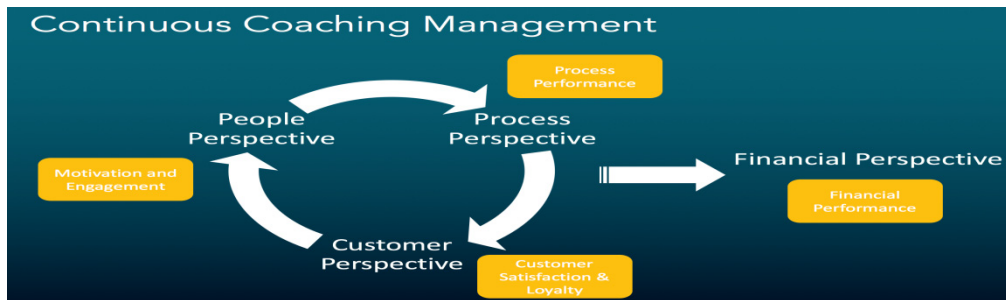

Figure 1. Continuous Coaching Framework

1.5 Identify Critical Moments for Success

When designing an adoption of Continuous Micro-Coaching an early stage is to review the process flow and identify the critical moments for success. In Incident Management, we can also identify critical moments. The quality of data provided by the customer is not critical to the successful outcome of the Incident Management process. The quality of data we provide at the stage of first response is critical. Failure to perform well here would lose the customers confidence and negatively affect the outcome of the process. How the Incident is categorized is not critical to a successful outcome but proposing a solution to the customer's issue is a critical moment.

1.6 Evaluating Past Performance

Machine Learning is also very important and imperative for I.T developers during the creation of the application. By investigating the success of past applications in terms of build/compile success, successful testing completion and operational performance, machine learning algorithms could make recommendations to developers proactively based on the code they are writing or the application that they are building. The AI engine could direct the developer in how to build the most efficient and highest-quality application.

1.7 Identify Regression and Poor Practices during Testing Using ML

In continuous feedback mechanism in the I.T service, machine learning in the future would be applied to other stages of the development of the software life cycle. This will aid in enhancing the process performance methodology or approach. One vital area in which machine learning can be applied is in the area of software testing. Other areas in which machine learning can be applied include in capacities such as unit tests, functional tests, regression tests, and user acceptance tests. Applying machine learning

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algorithms to these I.T system test results could identify patterns of poor coding practices that result in too many errors caught by the tests. This information could then inform the development teams so that they can become more efficient in the future.

Similarly, leveraging historical data, ML could be used to fine-tune deployment strategies as applications are moved from Dev to Test to Production Environments.

2. Use Machine Learning to Your Advantage

Machine learning also helps in facilitating continuous feedback and automated recommendation for companies. One method by which machine learning has helped in easing the job is through Pulse survey software. This technological innovation helps to monitor team progress and also sent forth an alert when an obstacle is detected (Skymind, 2018). Machine learning also provides an additional outlet for employee feedback outside of the one-on-one meeting. With this system appraisers and software, evaluation can be done anywhere. Furthermore, continuous feedback processes through machine learning can also be implemented using OKR software. With the OKR software which come with mounted goals dashboards with comprehensive analytics, these machine learning tools provide managers with high-level performance data which can also improve their ability to provide relevantly, and a specific feedback loop for improvement in organizational and employees performance.
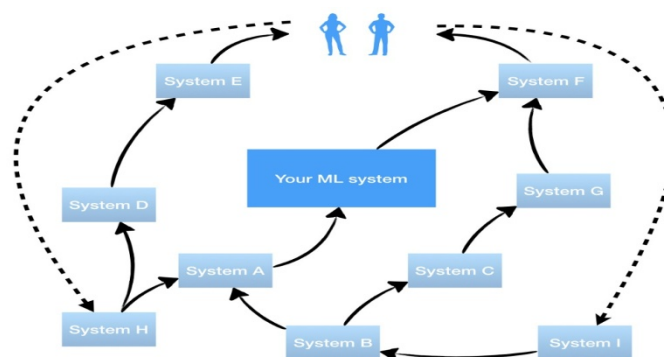

Figure 2. Conceptual Model

Source: Lucidchart (2018).

2.1 Machine Learning in IT Coaching Management

Machine Learning powered Virtual Coach, and Chabot empowers everyone in the organization to use the concept of 24*7. The model will get better over time as it learns from current and historical feedback data. Here are the two use cases that I have implemented in my products:

- – Make a prediction on which Helpdesk agent needs training based on analyzing their Past incident handling data (Resolution time, SLA, reassignment).

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‒   Identify patterns that are not aligning with best practice and Provide Link to Best Practice Guide and Videos.

3. Conclusion

In conclusion, moving from the more traditional annual appraisals to the ongoing and continuous micro-coaching and learning method can be tasking at first, but like anything else, any organization that seriously wish to achieve improved process and people performance can certainty do that. This transition is most needed in the I.T service. Always remember that for a feedback mechanism to be much effective, specific and measurable goals should be set-up. Once your employees have clear, measurable goals they fully understand, managers can then institute an ongoing training loop through which relevant feedback is exchanged to expedite personal growth and upgraded performance (Donald & John., 1981).

4. Recommendation

I believe future advancements in AI/ML will take it beyond just context based conversation and feedback loops and will bring us even newer ways of working, doing and predicting things that will take workplace productivity to a whole other dimension.

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