Journal of Advanced Research in Wireless, Mobile and Telecommunication
Volume 6, Print Issue 1 - 2023, Pg. No. 11-15
Peer Reviewed Journal

Research Article

Enhancing Web Services through HRM Integration and AI: Advancing Triple Bottom Line Sustainability

Deepak More[1], Rachna Goyal[2]

[1]Assistant Professor, Annamalai University Computer science and engineering.
[2]student Annamalai University Computer science and engineering.

I N F O

Corresponding Author:
Deepak More, Annamalai University Computer science and engineering.
Orcid Id:
https://orcid.org/0009-0008-6087-0397
E-mail Id:
moredrdeepak@gmail.com
How to cite this article:
More D, Goyal R. Enhancing Web Services through HRM Integration and AI: Advancing Triple Bottom Line Sustainability. *J Adv Res Wire Mob Telecom* 2023; 6(1): 11-15.

Date of Submission: 2023-03-15
Date of Acceptance: 2023-04-22

A B S T R A C T

Modern technology has enabled businesses to perform essential tasks like planning, performance monitoring, recruiting, payroll. Companies can access HRM software through traditional applications or cloud-based Software-as-a-Service (SaaS). The balanced scorecard, a sustainability framework, considers financial and non-financial indicators, decision support frameworks, decision support frameworks. AI systems have a negative impact on 59 targets of 17 sustainable development goals. The balanced scorecard serves as the foundation for various approaches to the triple bottom line, focusing on accounting and reporting. Businesses determine social, environmental, economic benchmarks, measure performance, report on their findings.

Keywords: Management of human resources, triple bottom line, United Nations goal, HRM, AI

Introduction

Web-based HR software allows HR professionals to quickly start using the service without waiting time or requiring extensive implementation. This eliminates the need for a lengthy process, as most platforms require little effort to run in a web browser. Developing a physical system requires significant IT staff and infrastructure preparation. To achieve sustainable development, resources must be used in a way that fulfills the present needs and preserves them for future generations. The balanced scorecard methodology is a business and sustainability framework that accounts for social, environmental, economic attributes.[1-2]

The triple bottom line approach focuses on accounting and reporting, with businesses defining social and environmental performance measures alongside economic criteria. Companies can use benchmarking tools like the Global Reporting Initiative (GRI) to monitor and improve performance over time. Advancements in Artificial Intelligence (AI) have created various applications for sustainable development, with nearly all 17 Sustainable Development Goals (SDGs) including AI. The study aims to evaluate the effectiveness of AI in achieving sustainable development objectives by defining it as the ability of computers to intelligently understand patterns, processes, results to enhance outcomes in a time- and resource-efficient manner.[3-4]

Literary Overview

In the 1990s, John Elkington introduced the triple bottom line concept, which focuses on accounting for the full cost and benefit of doing business across three different bottom lines: planet, people, prosperity. The United Nations' Sustainable Development Goals (SDGs) have 17 SDGs that account for people, the planet, prosperity. Research suggests that AI can help accomplish 79% of the 17 SDGs, while 35% may suffer a negative effect. This study aims to compare the positive and negative impacts of AI on the 169

SDGs and determine its potential use in achieving them. Further research is needed to understand the potential impact of AI on achieving these goals.[5-7]

Brief

They are using those objectives to come up with and then evaluate multiple different courses of action within the organization, they are being very explicit about trade-offs prepared to leave money on the table in the name of sustainability or, on the other hand, Figure 1.

Figure 1

Strategies of Triple Bottom line

Accounting and reporting are essential to benchmark, benchmarking is essential to making strategic decisions. However, strategic decision-making is impossible without accounting and reporting. Therefore, it is necessary for all of these disparate parts to be compatible with one another. In order to make sustainability gains at the level that we really want to make them, we can no longer afford to simply be less unsustainable. Instead, we need to make large evolutionary leaps on the sustainable side. From the perspective of the triple bottom line, those large evolutionary leaps aren't going to happen by accident, they won't happen in a vacuum; rather, they require strategic triple-bottom-line thinking. Market transformation is really the idea that in order to make sustainability gains at the level that we really want to make.

Methods

We will split the Sustainable Development Goals (SDGs) into three areas, namely Environment, Economy, Society, for the aim of conducting a comparative assessment of the impact and effect that AI has on 169 goals included within the 17 SDGs.[7]

The Sustainable Development Goals (SDGs) that are included under each category are as follows:

Society: SDG-1, SDG-2, SDG-3, SDG-4, SDG-5, SDG-6, SDG-7, SDG-11, SDG-16 • Environment: SDG-13, SDG-14, SDG-15

Economy: SDG-8, SDG-9, SDG-10, SDG-12, SDG-17 • Environment: SDG-13, SDG-14, SDG-15 • Economy: SDG-8, SDG-9, SDG-10, SDG-12.

We determined whether AI has a good or negative influence on each of the 169 goals that make up the 17 Sustainable Development Goals by using the expert elicitation approach and the data-driven process, respectively. The goal was to determine the total magnitude of the detrimental effects that AI has on the process of attaining sustainability. If the extent of a particular target's negative impact is less than that of its positive impact, then artificial intelligence will act as an enabler on that target and will contribute to the achievement of sustainability. On the other hand, if the negative impact is greater than the positive impact, then the next question to ask is whether or not some technological advancement in the technology could reduce the impact, we used the data-driven approach to determine whether or not such technological advancements could reduce the impact.

So, the analogy we used was that when it comes to sustainability, we're basically looking at the bunch of alternatives that we could consider and that we're trying to get to a place where we can make science-based decisions that at the same time align better with both our business and sustainability inroads. And the way that we think we can get there is by actually adding some much-needed structure to the kinds of decisions that we have to make. As we have spoken about the technique of triple bottom line accounting and reporting, as well as the concept of benchmarking and strategic decision-making, we want to stress that all three are important; nevertheless, you really can't do level 3 without level 2, you can't do level 2 at that level 1. Therefore, we see this more as a system than anything else, if the transformation of the market is truly the objective of the move toward sustainability in business, then we need to start thinking about and recognizing that more strategic shifts and how we as firms make decisions is going to be absolutely critical. If this is the case, then we need to start thinking about and recognizing that more strategic shifts and how we as firms make decisions are going to be absolutely

Performance Analysis and Challenges

The institutional challenge is going to be obstacles on accounting and reporting and benchmarking, these are going to persist regardless of how you want to take your sustainability and TBL methodology. They're going to be methodological challenges, such as how do we actually operationalize tools and techniques so that businesses can use them on a regular basis and in a very sort of routinized manner. The TBL decisions have to wrestle with balancing

social, economic, environmental goals,[8] our research is focused on how people confront these trade-offs, in particular, whether or not people really look at the ratio between cost and benefit when they make trade-offs to help them inform that choice. This approach actually worked when it was done in the forestry sector, this was people who are making decisions about wildlife management.

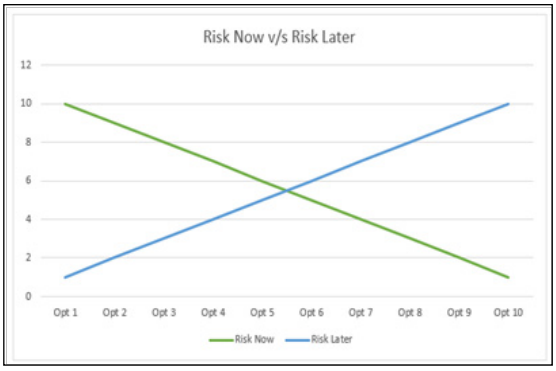

Figure 2

The Above Graph Represents Cognitive Limitations

The relationship between an increased risk now, which represents the red line, a decreased risk in the future, which represents the blue line, means that if we imagine people who are concerned about the risk of forest fires, one thing that could be done to reduce the risk of a forest fire in the future is to burn off all of the fuel that is on the ground today. If you burn off that fuel today in a controlled manner, there is less fuel left over for an accidental lightning strike. This can be presented to people as a choice as to how aggressive do, they want to be today in exchange for some benefit in the future, they can pick either the status quo or one of 10 options. What we propose is to make this choice carefully about the ratio between cost and benefit. In other words, the more aggressive course of action today can reduce the risk in the future because there will be less fuel available.

Overcoming Cognitive Limitations

When we are trying to make decisions based on the triple bottom line, there are a few different ways that if we want to make better sustainability, we need to give people better high-quality information and often access to quality information upon which to base their concerns and choices. If we want to make better decisions, we need to make better sustainability. The challenge that is at the core of the current business and sustainability story is the reality that while we profess that we want to accomplish certain objectives, our actions do not necessarily represent those aspirations. It is not because we are awful people, it is not because we don't care; rather, it is simply because there is a lot of cognitive machinery that we have to deal with and overcome in order to be able to make preferences in the manner that we would like to believe that we are able to make them.

Triple Bottom-Line Building

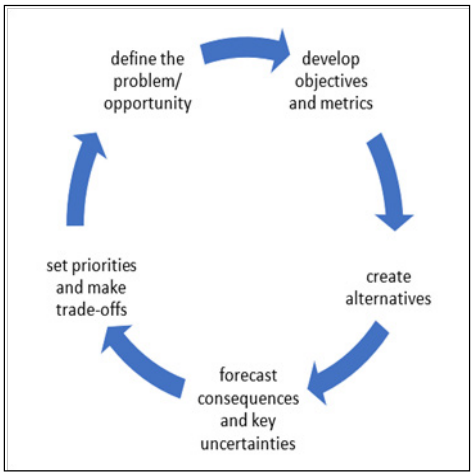

Figure 3

Building Code for Triple Bottom Line

In our heads, the construction code looks something like this; this is only one possible interpretation of it. Although many TBL practitioners, in the sense that we understand the term, follow somewhat different construction rules, the TBL, in its essence, may be broken down into five essential components.[1] The first step is to have an understanding of the challenge or opportunity that is now being faced by experts in the field of sustainability about the topic of what it is that we genuinely want to accomplish as a final outcome of the talks that one is required to have.[2] The second step is to give careful consideration to the goals and objectives that will be affected by the choice that will be made, as well as to how the performance will be measured and how one will determine if they have been successful or not.

You want to be able to create alternatives in a creative systematic and comprehensive way we don't have to look at some alternatives at the expense of others we want to be as broad in our thinking about what our options are as possible we want to forecast the consequences of those options we want to be as broad in our thinking what our options are as possible There's that famous quote about not being able to know where you're going if you don't have a map to get you there so these objectives and metrics sort of performing the function

Results and Discussion

The following findings were obtained, in which the color green means that AI operates as a facilitator, the colour orange shows that AI acts as an inhibitor, the colour Gray indicates that no such relevant evidence was discovered on the influence of AI.

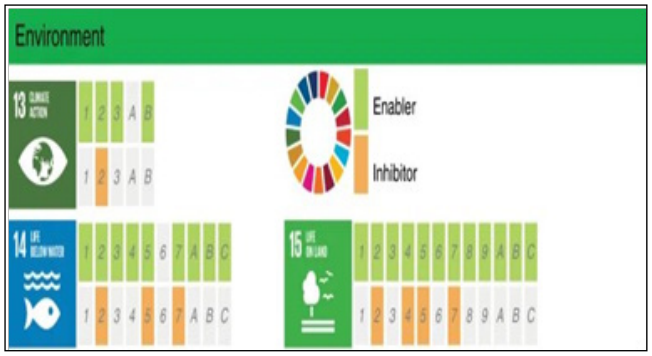

Figure 4

Influence of AI on SDG Target under the category of Environment

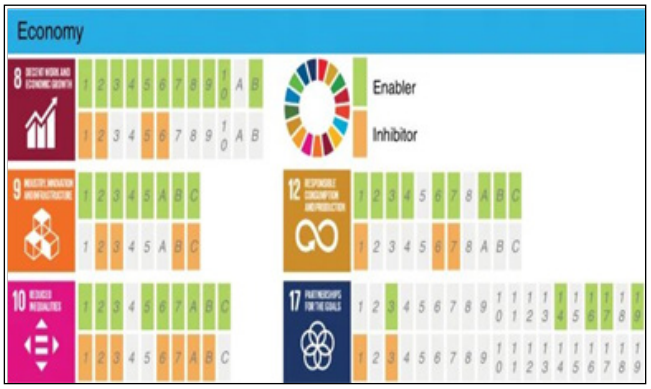

Figure 5

Influence of AI on SDG Target under the category of Economy

Figure 6

Influence of AI on SDG Target under the category of Society

According to our research, certain targets may be inhibited by artificial intelligence (AI). To put it another way, the advantages that one target experiences might have the opposite impact on a different target. Figure 6 is an example of the SDG-1 No Poverty First Target, which is to "eradicate extreme poverty for all people by 2030." All over the world, where poverty is currently defined as people making less than $1.25 per day, AI may act as an enabler by generating new employment opportunities in the technology sector and could also lead to an increase in per capita income; however, on the other hand, AI may also act as an inhibitor in the same target by widening the gap between people living in poverty and people living in higher, However, by allowing AI to contribute to SDG-4 Quality Education in the process of upgrading people's skill sets so they can be employed in the future, the issue that was raised might be resolved, which would have a positive impact on the overall endeavour to attain sustainability.

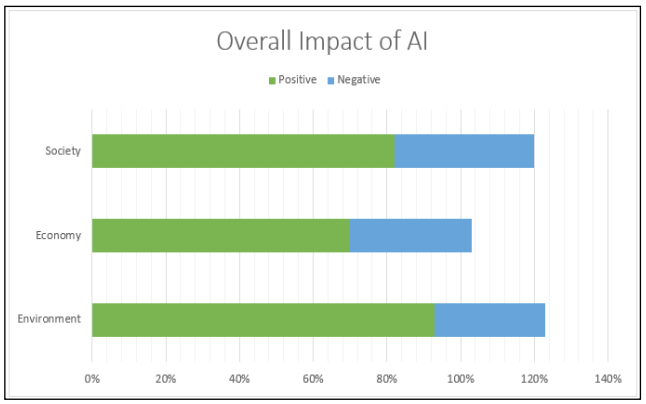

Figure 7

Positive v/s Negative impacts of AI on each of the three SDG categories.

The following methodology was used to evaluate the total influence on each of the aforementioned categories: From Figure 7, it is simple to deduce that AI will almost surely serve as a catalyst in terms of the overall influence it has on the Sustainable Development Goals (SDGs). The beneficial effect of AI on Sustainable Development Goals is much larger than the negative impact in each of the three areas.

Conclusion

If a change towards sustainability in business truly aims to transform the market, then we need to start considering and identifying the more strategic shifts. The three methods of accounting and reporting for the triple bottom line, the concept of benchmarking, lastly the strategic choice we make are all worthwhile, so we should actually consider them as a system. There should be some structure to the main point. They are also there to help us find a balance between the issues that are social, environmental, economic.

We can infer from the data discussed above that AI will become a crucial tool in the development of the circular economy and the achievement of the SDGs. Artificial intelligence has the potential to significantly advance and innovate in nearly all three of the Sustainable Development Goals (SDGs), including the environment, economy, society. We looked at how artificial intelligence affected each of the 169 targets listed in the 17 Sustainable Development Goals (SDGs), both positively and negatively. We found

that the positive effects of AI on other targets can further offset the negative effects of AI on some targets.

References

1. Vinuesa, R., Azizpour, H., Leite, I., Balaam, M., Dignum, V., Domisch, S., Fellander, A., Daniela Langhans, S., Tegmark, M., & Nerini, F. F. (2020). The role of artificial intelligence in achieving the Sustainable Development Goals. NATURE COMMUNICATIONS, 11(1). https://doi.org/10.1038/s41467-019-14108-y
2. Ranjbari, M., Esfandabadi, Z. S., Zanetti, M. C., Scagnelli, S. D., Siebers, P.-O., Aghbashlo, M., Peng, W., Quatraro, F., & Tabatabaei, M. (2021). Three pillars of sustainability in the wake of COVID-19: A systematic review and future research agenda for sustainable development. JOURNAL OF CLEANER PRODUCTION, 297. https://doi.org/10.1016/j.jclepro.2021.126660
3. Garg, V., Srivastav, S., & Gupta, A. (2018). Application of Artificial Intelligence for Sustaining Green Human Resource Management. 2018 International Conference on Automation and Computational Engineering, ICACE 2018, 113–116. https://doi.org/10.1109/ICACE.2018.8686988
4. Pal, S., Das, P., Mandal, I., Sarda, R., Mahato, S., Nguyen, K.-A., Liou, Y.-A., Talukdar, S., Debanshi, S., & Saha, T. K. (2021). Effects of lockdown due to COVID-19 outbreak on air quality and anthropogenic heat in an industrial belt of India. JOURNAL OF CLEANER PRODUCTION, 297. https://doi.org/10.1016/j.jclepro.2021.126674
5. Pierrat, E., Rupcic, L., Hauschild, M. Z., & Laurent, A. (2021). Global environmental mapping of the aeronautics manufacturing sector. JOURNAL OF CLEANER PRODUCTION, 297. https://doi.org/10.1016/j.jclepro.2021.126603
6. Hannan, M. A., Al-Shetwi, A. Q., Ker, P. J., Begum, R. A., Mansor, M., Rahman, S. A., Dong, Z. Y., Tiong, S. K., Mahlia, T. M. I., & Muttaqi, K. M. (2021). Impact of renewable energy utilization and artificial intelligence in achieving sustainable development goals. ENERGY REPORTS, 7, 5359–5373. https://doi.org/10.1016/j.egyr.2021.08.172
7. Pierrat, E., Rupcic, L., Hauschild, M. Z., & Laurent, A. (2021). Global environmental mapping of the aeronautics manufacturing sector. JOURNAL OF CLEANER PRODUCTION, 297. https://doi.org/10.1016/j.jclepro.2021.126603
8. Chang, T.-M., Hsu, M.-F., & Lin, S.-J. (2018). Integrated news mining technique and AI-based mechanism for corporate performance forecasting. INFORMATION SCIENCES, 424, 273–286. https://doi.org/10.1016/j.ins.2017.10.004