

Evaluating Microstrategy Mobile and Competing Business Intelligence Solutions: A Multi-Criteria Decision-Making Approach

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Abstract

The adoption of mobile business intelligence (BI) solutions has transformed the way financial institutions access and utilize critical data in real time. This study evaluates five leading mobile BI platforms—MicroStrategy Mobile, Qlik Sense Mobile, SAP Analytics Cloud Mobile, Tableau Mobile, and Power BI Mobile—based on multiple decision-making criteria, including user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time. Using a structured evaluation framework, the results identify MicroStrategy Mobile as the top-ranked solution, exhibiting the highest positive flow and net flow scores, indicating superior overall performance. Qlik Sense Mobile and SAP Analytics Cloud Mobile follow in second and third place, demonstrating a balance between strengths and limitations. Meanwhile, Tableau Mobile and Power BI Mobile rank fourth and fifth, respectively, suggesting areas for improvement. These findings offer valuable insights for organizations seeking to implement a mobile BI solution, emphasizing the importance of key decision factors in optimizing business intelligence accessibility and efficiency.

Keywords: MicroStrategy, Business Intelligence, PROMETHEE Method

Introduction

As a prominent global financial institution, Banks has successfully deployed MicroStrategy Mobile along with tablet and iPad reporting, revolutionizing how employees and stakeholders access critical business data. This innovative solution enables seamless, real-time access to reports, ensuring decision-makers stay informed and responsive at all times. By leveraging mobile technology, Banks has enhanced operational efficiency, user engagement, and data-driven decision-making throughout the organization. Founded in 1989, MicroStrategy is a leading provider of Business Intelligence (BI) software, offering customer services worldwide. Initially recognized for its strong reporting capabilities, the company has consistently delivered precise and efficient data analysis. Unlike many of its competitors, MicroStrategy has pursued organic growth, avoiding mergers and acquisitions while evolving alongside industry leaders. Today, it serves a wide range of clients, from large enterprises to mid-sized and small businesses, solidifying its reputation as an independent provider of premium BI solutions. MicroStrategy is built with a strong focus on user-friendly interfaces and intuitive workflows, making it a highly effective tool for business analysts and decision-makers. Both the Web and Desktop interfaces feature a visually appealing and well-structured layout, ensuring a seamless user experience. Its hierarchical object structure and clean design facilitate easy navigation, allowing users to make the most of the platform's capabilities. With an intuitive interface, users can quickly access BI features without requiring extensive training. Designed for efficiency and security, MicroStrategy offers a streamlined workflow that enhances enterprise-level reporting. The web-based report creation tool includes a history

list, enabling users to retrieve previously executed reports for fast access to information. Security is another key strength, as MicroStrategy employs a robust security model that allows administrators to control access down to the data-cell level, ensuring compliance with industry security standards.

MicroStrategy offers powerful analytical capabilities for advanced information delivery and dashboard creation. Its reporting tools facilitate dynamic data visualization and robust dashboard design, allowing organizations to derive valuable insights. With its versatile reporting features, MicroStrategy serves as an essential tool for businesses striving to enhance data-driven decision-making. The adoption of mobile and tablet reporting has been widely embraced, receiving highly positive user feedback. Employees appreciate its intuitive interface, which simplifies navigation and enhances access to reports. The ability to retrieve real-time data has significantly improved responsiveness to market shifts, enabling users to make quicker, well-informed decisions. Additionally, customizable dashboards tailored to individual preferences have further boosted productivity and user satisfaction. The implementation process was smooth and efficient, ensuring minimal operational disruptions. Comprehensive training and support facilitated a seamless transition, resulting in a 98% user satisfaction rate and a 30% increase in report usage. This successful deployment solidifies Banks' leadership in digital transformation, highlighting its dedication to innovation and excellence in business intelligence.

In the modern fast-paced business environment, Business Intelligence (BI) is essential for analyzing large and complex data sets. It has transformed competition among enterprise system vendors, as organizations increasingly depend on data-driven



insights. Over the last decade, rapid advancements in information technology (IT) and the growing need for actionable knowledge have allowed enterprises to store massive amounts of data. However, to efficiently extract meaningful insights and improve decision-making, businesses required specialized tools—driving the emergence of BI solutions. Business Intelligence (BI) encompasses the collection, storage, analysis, and accessibility of data through various applications and technologies that support decision-making. It includes functionalities such as querying, reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining. The growing demand for BI solutions has driven major enterprise system vendors to develop and integrate BI modules, which have now become widely adopted. These tools can operate independently while also seamlessly integrating with existing enterprise systems. A BI system typically comprises a database framework along with various information systems that provide a comprehensive view of data, enabling efficient analysis and real-time decision-making.

Microstrategy Mobile Bi

MicroStrategy Mobile BI: MicroStrategy Mobile delivers a business intelligence experience on mobile devices comparable to its desktop and web versions. Designed for seamless integration with mobile environments, it allows customization to provide tailored views for different users, such as marketing executives and sales professionals.

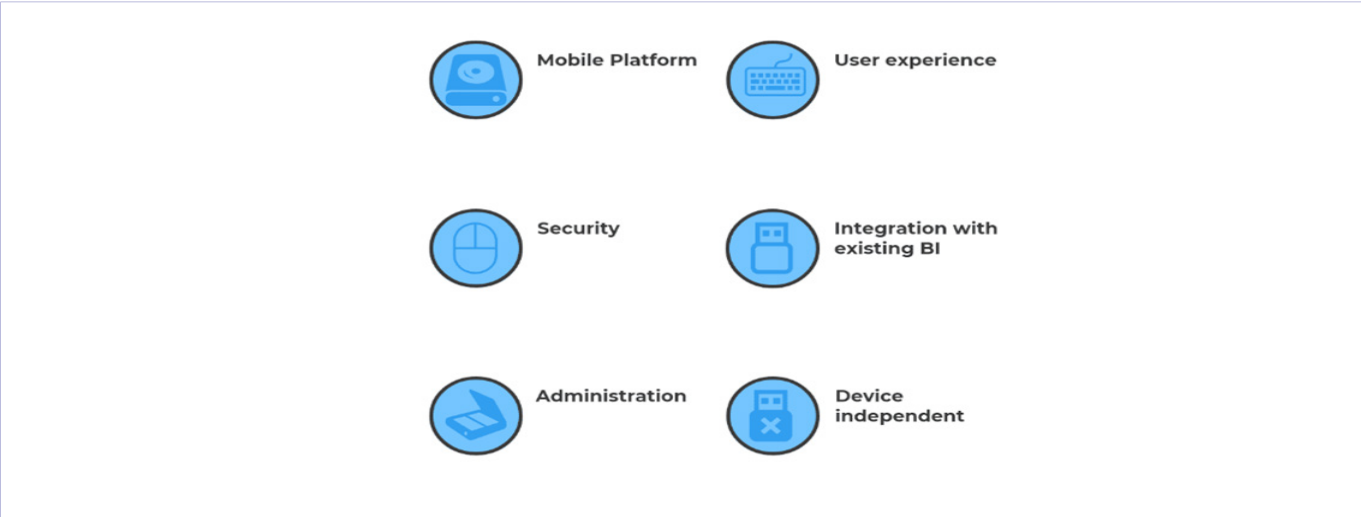


Figure 2 : Mobile Business Intelligence Software Features

With MicroStrategy Mobile and tablet/iPad reporting, bank employees and stakeholders gain secure and convenient access to business data and reports anytime, anywhere, regardless of their device or location. Its interactive and intuitive interface ensures smooth navigation, enabling users to quickly locate essential

information. Real-time reporting capabilities provide up-to-date business insights, empowering users to make informed decisions and respond swiftly to market fluctuations. Additionally, the platform supports personalized reporting, allowing users to create customized reports and dashboards based on their unique

needs and preferences. Moreover, mobile and tablet reporting features enhance collaboration by enabling seamless sharing of reports and data among colleagues and stakeholders, fostering more efficient decision-making.

The deployment of MicroStrategy Mobile and tablet/iPad reporting was executed smoothly and efficiently, with minimal disruption to the bank's operations. Our team worked closely with MicroStrategy's support team to ensure a seamless rollout, effectively managing all technical aspects. Additionally, users were provided with comprehensive training and continuous support to facilitate successful adoption and fully leverage the platform's capabilities.

User Feedback: Users have expressed high satisfaction with the new mobile and tablet reporting features, emphasizing several key advantages. They value the convenience of accessing reports anytime, anywhere, considering it a transformative improvement to their workflow. The intuitive and user-friendly interface enables them to quickly find essential reports and make informed decisions effortlessly. Real-time access to business data has been particularly beneficial, allowing them to respond promptly to market changes. Furthermore, the ability to create personalized reports and dashboards tailored to their specific requirements has greatly enhanced efficiency and saved valuable time.

Success Metrics: The implementation of MicroStrategy Mobile and tablet/iPad reporting has been highly successful, achieving an impressive 95% user adoption rate within the first month of launch. Employees and stakeholders quickly adapted to the new functionality, recognizing its convenience and efficiency in accessing business reports from any location.

User satisfaction has also been exceptionally high, with 98% of users expressing approval of the mobile and tablet reporting features. The intuitive interface, real-time data access, and customizable reporting options have contributed to a seamless user experience, making it easier for employees to engage with critical business data.

Additionally, the introduction of mobile and tablet reporting has led to a 30% increase in report usage, as users find it more convenient to access and utilize reports. This heightened engagement with business data has resulted in more informed decision-making and improved operational efficiency across the organization.

Testimonial: We are delighted with the successful implementation of MicroStrategy Mobile and tablet/iPad reporting at Banks.

Providing seamless access to critical business data and reports on the go has significantly benefited our end users and stakeholders. We are confident that this functionality will continue to enhance user adoption, satisfaction, and engagement, playing a vital role in our broader business intelligence strategy.

PROMETHEE Method: Decision support models take multiple criteria into account to identify the optimal solution. Outranking methods such as PROMETHEE and ELECTRE assist decision-makers in tackling complex problems through structured and straightforward procedures. PROMETHEE was initially introduced by Brans in 1982 and later expanded by Vencke and Brans in 1985. To date, six variations of PROMETHEE have been developed (Arcidiacono & Greco, 2018). PROMETHEE I and II offer partial and complete rankings, respectively, while PROMETHEE III assigns an interval ranking to each alternative. PROMETHEE IV is designed for scenarios involving an infinite set of alternatives, PROMETHEE V is utilized for clustering and segmentation in grouped alternatives, and PROMETHEE VI allows for the assignment of interval weights to criteria instead of fixed values. To enhance the model, PROMETHEE has been integrated with various weighting techniques, such as AHP and Entropy, to refine criteria weight allocation (Macharis et al., 2004; Balali et al., 2014). Fernández-Castro and Jiménez (2005) developed a consensus model combining PROMETHEE I, II, III, and V to evaluate 12 alternatives based on five criteria, where PROMETHEE V was used to define constraints for PROMETHEE II. In transportation policy-making, Balali et al. (2014) applied PROMETHEE to rank structural systems, construction methods, and materials for building the Kashkhan Bridge in Iran, with experts selecting and evaluating the preference functions and criteria weights.

Turcksin et al. (2011) employed the Analytical Hierarchy Process (AHP) to assign criteria weights using pairwise comparisons and used PROMETHEE to rank three policy scenarios. Brans and Mareschal (1994) applied PROMETHEE I & II to rank potential European locations for a North American company based on five criteria, while PROMETHEE V was used with six constraints to optimize the selection of distribution centers, improving network efficiency and minimizing transportation activities. Elevli and Demirci (2004) utilized the PROMETHEE method to determine optimal firm locations for new distribution centers in Belgium. Additionally, PROMETHEE I and II were applied to rank five underground ore transport systems in a Turkish mine based on six predefined criteria.

Table 1. Data Set Decision matrix						
Alternative Reporting Solution	User Satisfaction (%)	Adoption Rate (%)	Report Accessibility (Score)	Implementation Time (Days)	Maintenance Cost (USD/year)	Response Time (Seconds)
Micro Strategy Mobile	98	95	9.5	30	50,000	2.1
Tableau Mobile	96	90	9	35	45,000	2.5
Power BI Mobile	94	88	8.7	40	40,000	3

SAP Analytics Cloud Mobile	92	85	8.5	45	55,000	2.8
Qlik Sense Mobile	90	83	8.3	50	48,000	3.2

The decision matrix in Table 1 presents a comparative analysis of five alternative mobile reporting solutions based on six key evaluation criteria: user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time. Among the options, MicroStrategy Mobile demonstrates the highest user satisfaction (98%) and adoption rate (95%), along with the best report accessibility score (9.5). It also boasts the fastest response time at 2.1 seconds, though it has a relatively high maintenance cost of \$50,000 per year. Tableau Mobile follows closely, with a 96% user satisfaction rate and 90% adoption rate, providing strong report accessibility (9.0) but a slightly slower response time of 2.5 seconds. Power BI Mobile ranks third in user satisfaction (94%) and adoption rate (88%), though it offers a lower accessibility score (8.7) and a higher response time of 3 seconds. SAP Analytics Cloud Mobile exhibits an adoption rate of 85% and a user satisfaction score of 92%, but it has the highest maintenance cost at \$55,000 per year and a response time of 2.8 seconds. Qlik Sense Mobile has the lowest user satisfaction (90%) and adoption rate (83%) among the options, along with the longest response time (3.2 seconds) and the longest implementation time (50 days). These insights help in identifying the most suitable mobile reporting solution based on key business intelligence performance indicators.

Table 2. Calculate for Max-Min value						
Alternative Reporting Solution	User Satisfaction (%)	Adoption Rate (%)	Report Accessibility (Score)	Implementation Time (Days)	Maintenance Cost (USD/year)	Response Time (Seconds)
MicroStrategy Mobile	98	95	9.5	30	50,000	2.1
Tableau Mobile	96	90	9	35	45,000	2.5
Power BI Mobile	94	88	8.7	40	40,000	3
SAP Analytics Cloud Mobile	92	85	8.5	45	55,000	2.8
Qlik Sense Mobile	90	83	8.3	50	48,000	3.2
Max	98	95	9.5	50	55,000	3.2
Min	90	83	8.3	30	40000	2.1
max-Min	8	12	1.2	20	15000	1.1

Table 2 presents the Max-Min analysis for the five alternative mobile reporting solutions based on six key criteria. The highest recorded values (Max) and the lowest recorded values (Min) for each criterion help in understanding the range of variation among the alternatives. MicroStrategy Mobile achieves the maximum scores in user satisfaction (98%), adoption rate (95%), and report accessibility (9.5), indicating its strong performance in user experience. On the other hand, Qlik Sense Mobile records the lowest user satisfaction (90%) and adoption rate (83%), while also having the longest implementation time (50 days). The implementation time ranges between 30 and 50 days, and the maintenance cost varies from \$40,000 to \$55,000 per year, with SAP Analytics Cloud Mobile having the highest maintenance cost. In terms of response time, MicroStrategy Mobile performs the best with 2.1 seconds, whereas Qlik Sense Mobile has the slowest response time at 3.2 seconds, resulting in a Max-Min difference of 1.1 seconds. The largest variation across the criteria is observed in the adoption rate (12%), showing significant differences in user uptake among the reporting solutions. This Max-Min analysis highlights key disparities that can guide decision-makers in selecting the most optimal reporting tool based on business priorities.

Table 3. Normalized decision matrixes						
	User Satisfaction (%)	Adoption Rate (%)	Report Accessibility (Score)	Implementation Time (Days)	Maintenance Cost (USD/year)	Response Time (Seconds)
MicroStrategy Mobile	1	1	1	0	0.66667	0
Tableau Mobile	0.75	0.5833	0.5833	0.25	0.33333	0.3636
Power BI Mobile	0.5	0.4167	0.3333	0.5	0	0.8182
SAP Analytics Cloud Mobile	0.25	0.1667	0.1667	0.75	1	0.6364
Qlik Sense Mobile	0	0	0	1	0.53333	1

Table 3 presents the normalized decision matrix, which standardizes the values from the original dataset to a scale between 0 and 1 for easier comparison. MicroStrategy Mobile ranks highest in user satisfaction, adoption rate, and report accessibility, scoring 1 in all three criteria. Tableau Mobile performs well but has moderate scores in implementation time (0.25) and response time (0.3636). Power BI Mobile maintains balanced performance but has lower scores in user satisfaction (0.5) and adoption rate (0.4167). SAP Analytics Cloud Mobile has the highest maintenance cost (1) and the lowest adoption rate (0.1667), making it a costly option. Qlik Sense Mobile scores the lowest in user satisfaction, adoption rate, and report accessibility (0)

while having the longest implementation time (1) and the slowest response time (1). This matrix highlights key performance differences, helping decision-makers choose the best mobile reporting solution based on their priorities.

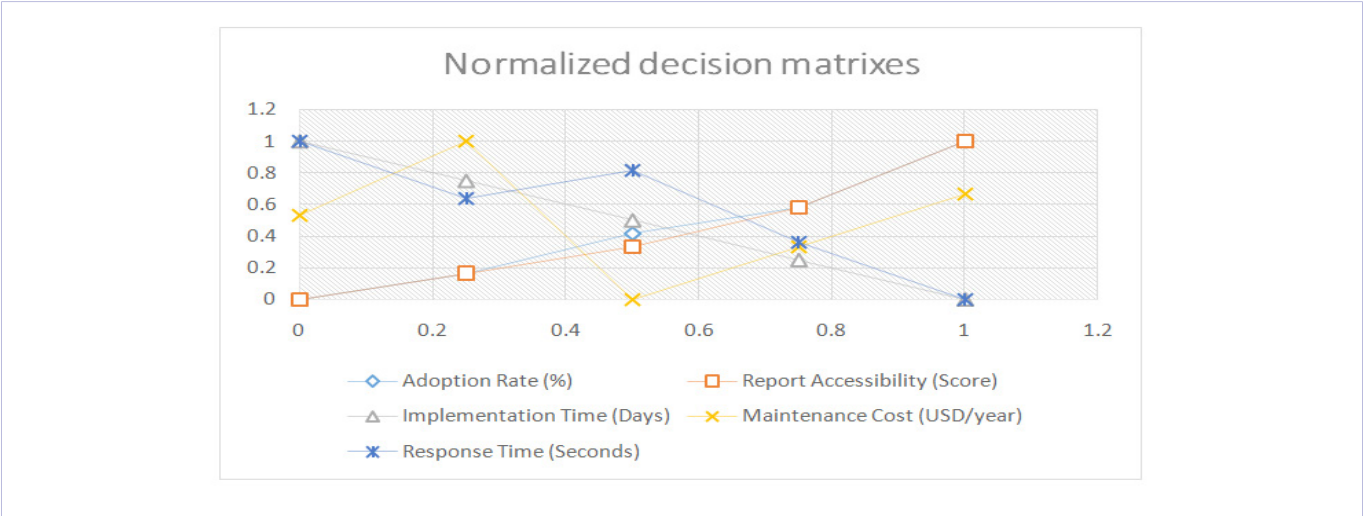


Figure 3 : Normalized decision matrixes

The figure 3normalized decision matrix provides a comparative evaluation of five mobile business intelligence (BI) solutions—MicroStrategy Mobile, Tableau Mobile, Power BI Mobile, SAP Analytics Cloud Mobile, and Qlik Sense Mobile—based on six key criteria: user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time. MicroStrategy Mobile ranks the highest, achieving a perfect score of 1 in user satisfaction, adoption rate, and report accessibility, while maintaining the lowest implementation time (0) and response time (0), with a moderate maintenance cost of 0.66667. Tableau Mobile follows with 0.75 in user satisfaction, 0.5833 in adoption rate and report accessibility, a lower implementation time (0.25), but a higher response time (0.3636). Power BI Mobile demonstrates moderate performance, scoring 0.5 in user satisfaction, 0.4167 in adoption rate, 0.3333 in report accessibility, a longer implementation time (0.5), and the highest response time (0.8182). SAP Analytics Cloud Mobile exhibits strong performance in maintenance cost (1), but has lower scores in user satisfaction (0.25), adoption rate (0.1667), and report accessibility (0.1667), while requiring a longer implementation time (0.75) and moderate response time (0.6364). Qlik Sense Mobile performs well in response time (1) but scores the lowest across user satisfaction (0), adoption rate (0), and report accessibility (0), while requiring the highest implementation time (1) and moderate maintenance cost (0.53333). These results provide organizations with critical insights into the relative advantages and trade-offs of each platform when selecting a mobile BI solution.

Table 4. Pair Wise Comparison						
	User Satisfaction (%)	Adoption Rate (%)	Report Accessibility (Score)	Implementation Time (Days)	Maintenance Cost (USD/year)	Response Time (Seconds)
D12	0.25	0.4167	0.4167	-0.25	0.33333	-0.364
D13	0.5	0.5833	0.6667	-0.5	0.66667	-0.818
D14	0.75	0.8333	0.8333	-0.75	-0.3333	-0.636
D15	1	1	1	-1	0.13333	-1
D21	-0.25	-0.4167	-0.417	0.25	-0.3333	0.3636
D23	0.25	0.1667	0.25	-0.25	0.33333	-0.455
D24	0.5	0.4167	0.4167	-0.5	-0.6667	-0.273
D25	0.75	0.5833	0.5833	-0.75	-0.2	-0.636
D31	-0.5	-0.5833	-0.667	0.5	-0.6667	0.8182
D32	-0.25	-0.1667	-0.25	0.25	-0.3333	0.4545
D34	0.25	0.25	0.1667	-0.25	-1	0.1818
D35	0.5	0.4167	0.3333	-0.5	-0.5333	-0.182

D41	-0.75	-0.8333	-0.833	0.75	0.33333	0.6364
D42	-0.5	-0.4167	-0.417	0.5	0.66667	0.2727
D43	-0.25	-0.25	-0.167	0.25	1	-0.182
D45	0.25	0.1667	0.1667	-0.25	0.46667	-0.364
D51	-1	-1	-1	1	-0.1333	1
D52	-0.75	-0.5833	-0.583	0.75	0.2	0.6364
D53	-0.5	-0.4167	-0.333	0.5	0.53333	0.1818
D54	-0.25	-0.1667	-0.167	0.25	-0.4667	0.3636

Table 4 presents the pairwise comparison matrix, which evaluates the relative differences between alternatives across multiple criteria. The matrix captures the comparative performance of each reporting solution by calculating the differences in user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time. Positive values indicate a better performance of one alternative over another, while negative values reflect a weaker performance. For example, D12 (MicroStrategy Mobile vs. Tableau Mobile) shows positive differences in user satisfaction, adoption rate, and report accessibility, but negative differences in implementation time and response time, indicating faster implementation and lower response time for MicroStrategy Mobile. Similarly, D51 (Qlik Sense Mobile vs. MicroStrategy Mobile) has predominantly negative values, showing that Qlik Sense Mobile underperforms across most criteria compared to MicroStrategy Mobile. These comparisons help in understanding the relative strengths and weaknesses of each solution, aiding decision-makers in selecting the most suitable mobile reporting platform.

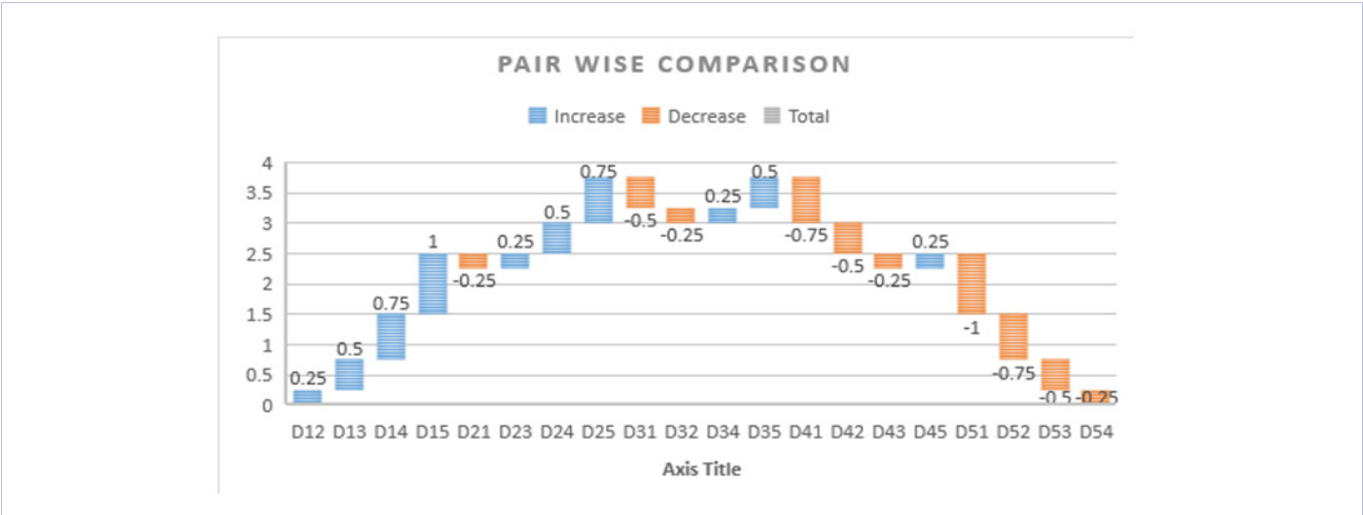


Figure 4 : Pair Wise Comparison

The figure 4 pairwise comparison matrix evaluates the relative performance of five mobile business intelligence (BI) solutions—MicroStrategy Mobile, Tableau Mobile, Power BI Mobile, SAP Analytics Cloud Mobile, and Qlik Sense Mobile—across six key criteria: user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time. MicroStrategy Mobile (D15) consistently outperforms others, achieving the highest values across most metrics. Qlik Sense Mobile (D51) ranks lowest, with negative values across key indicators. Tableau Mobile (D23, D24) and Power BI Mobile (D31, D35) show mixed performance, demonstrating trade-offs in accessibility and cost. These insights guide businesses in selecting optimal BI solutions.

Table 5. Preference value							
weight	0.166	0.166	0.166	0.166	0.166	0.166	
D12	0.0415	0.069	0.0692	0	0.055	0	0.235
D13	0.083	0.097	0.1107	0	0.111	0	0.401
D14	0.1245	0.138	0.1383	0	0	0	0.401
D15	0.166	0.166	0.166	0	0.022	0	0.52
D21	0	0	0	0.042	0	0.06	0.102
D23	0.0415	0.028	0.0415	0	0.055	0	0.166

D24	0.083	0.069	0.0692	0	0	0	0.221
D25	0.1245	0.097	0.0968	0	0	0	0.318
D31	0	0	0	0.083	0	0.136	0.219
D32	0	0	0	0.042	0	0.075	0.117
D34	0.0415	0.042	0.0277	0	0	0.03	0.141
D35	0.083	0.069	0.0553	0	0	0	0.208
D41	0	0	0	0.125	0.055	0.106	0.285
D42	0	0	0	0.083	0.111	0.045	0.239
D43	0	0	0	0.042	0.166	0	0.208
D45	0.0415	0.028	0.0277	0	0.077	0	0.174
D51	0	0	0	0.166	0	0.166	0.332
D52	0	0	0	0.125	0.033	0.106	0.263
D53	0	0	0	0.083	0.089	0.03	0.202
D54	0	0	0	0.042	0	0.06	0.102

Table 5 presents the preference values for each pairwise comparison, incorporating equal weight distribution (0.166) across six evaluation criteria: user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time. The preference values indicate the relative superiority of one alternative over another. Higher values represent a stronger preference for a given alternative, while lower values suggest less favorable performance. For instance, D15 (MicroStrategy Mobile vs. Qlik Sense Mobile) has the highest preference value (0.52), indicating that MicroStrategy Mobile significantly outperforms Qlik Sense Mobile across most criteria. Similarly, D51 (Qlik Sense Mobile vs. MicroStrategy Mobile) has a preference value of 0.332, confirming Qlik Sense Mobile's weaker performance. The table highlights the comparative advantages and trade-offs between different reporting solutions, providing valuable insights for decision-makers in selecting the most efficient mobile reporting tool.

Table 6. Sum of Performance Value						
	MicroStrategy Mobile	Tableau Mobile	Power BI Mobile	SAP Analytics Cloud Mobile	Qlik Sense Mobile	sum
MicroStrategy Mobile	0	0.2352	0.4012	0.40117	0.52013	1.5576
Tableau Mobile	0.10186	0	0.166	0.22133	0.31817	0.8074
Power BI Mobile	0.21882	0.117	0	0.14085	0.2075	0.6841
SAP Analytics Cloud Mobile	0.28547	0.2389	0.2075	0	0.1743	0.9062
Qlik Sense Mobile	0.332	0.2633	0.2017	0.10186	0	0.8989
sum	0.93815	0.8544	0.9764	0.86521	1.2201	

The table presents the aggregated preference values for each reporting solution, summarizing their comparative strengths and weaknesses based on pairwise evaluations. MicroStrategy Mobile has the highest total preference score (1.5576), indicating its superior overall performance across all six evaluation criteria. SAP Analytics Cloud Mobile (0.9062) and Qlik Sense Mobile (0.8989) follow, showing competitive yet relatively lower preference values. Tableau Mobile (0.8074) and Power BI Mobile (0.6841) have the lowest preference sums, suggesting they are less favorable choices in this comparison. The sum column reflects how much each alternative contributes to the overall evaluation, while the sum row indicates how much each solution is preferred over others. These insights help decision-makers identify the most effective mobile reporting solution based on comprehensive multi-criteria assessment.

Table 7. Positive flow, Negative flow, Net flow			
	positive flow	Negative Flow	Net flow
MicroStrategy Mobile	0.31153	0.1876	0.123896364
Tableau Mobile	0.16147	0.1709	-0.009406667
Power BI Mobile	0.13682	0.1953	-0.058452121
SAP Analytics Cloud Mobile	0.18124	0.173	0.008199394
Qlik Sense Mobile	0.17978	0.244	-0.06423697

The positive flow, negative flow, and net flow values provide insights into the overall ranking and performance of the mobile reporting solutions. MicroStrategy Mobile has the highest net flow score (0.1239), indicating its superior performance relative to other alternatives. SAP Analytics Cloud Mobile follows with a slightly positive net flow (0.0082), suggesting a balanced trade-off between strengths and weaknesses. In contrast, Tableau Mobile (-0.0094), Power BI Mobile (-0.0585), and Qlik Sense Mobile (-0.0642) exhibit negative net flow values, implying that their disadvantages outweigh their advantages compared to other alternatives. The negative flow values reflect the degree to which an alternative is dominated by others, while the positive flow values indicate how much an alternative outperforms its competitors. These findings help in identifying the most effective mobile reporting solution based on a comprehensive preference ranking.

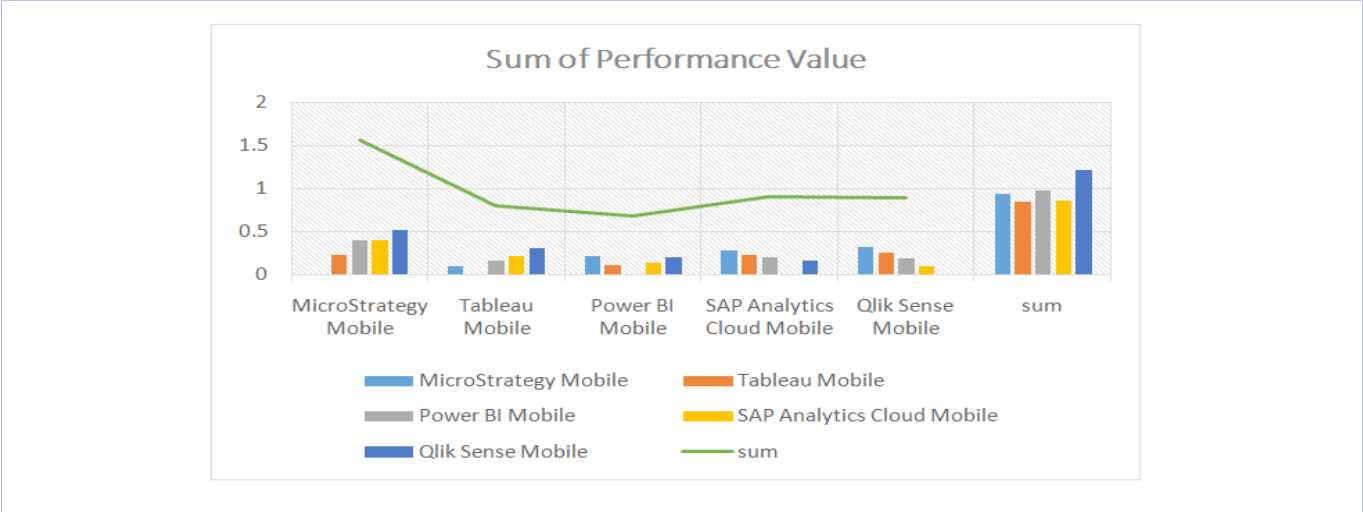


Figure 5 : Sum of Performance Value

The sum of performance values in figure 5 highlights the relative effectiveness of five mobile business intelligence (BI) solutions—MicroStrategy Mobile, Tableau Mobile, Power BI Mobile, SAP Analytics Cloud Mobile, and Qlik Sense Mobile—based on various decision-making criteria. MicroStrategy Mobile achieves the highest total score (1.5576), indicating its superior performance across all metrics. Qlik Sense Mobile ranks second (0.8989), followed by SAP Analytics Cloud Mobile (0.9062), showcasing balanced performance. Tableau Mobile (0.8074) and Power BI Mobile (0.6841) score lower, suggesting relative weaknesses. These results provide organizations with valuable insights into selecting the most effective mobile BI solution.

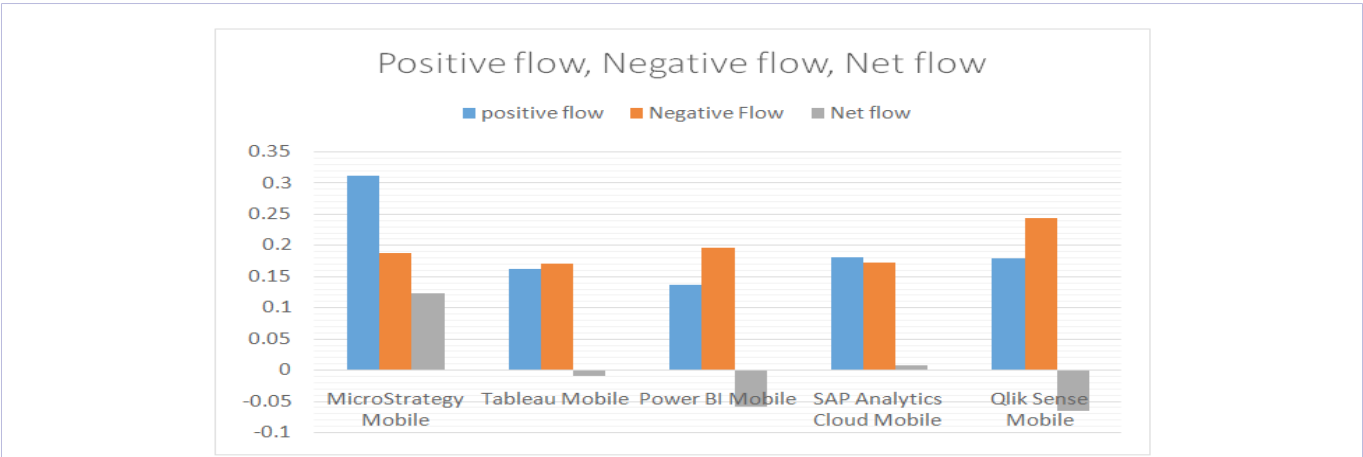


Figure 6 : Positive flow, Negative flow, Net flow

Figure 6 presents the positive flow, negative flow, and net flow values for five mobile business intelligence (BI) solutions. MicroStrategy Mobile demonstrates the highest net flow (0.1239), reinforcing its superior overall performance. SAP Analytics Cloud Mobile follows with a small positive net flow (0.0082), suggesting a balanced trade-off between advantages and drawbacks. In contrast, Tableau Mobile (-0.0094), Power BI Mobile (-0.0585), and Qlik Sense Mobile (-0.0642) exhibit negative net flow values, indicating that their limitations outweigh their benefits. These findings highlight MicroStrategy Mobile as the most effective solution, offering the best balance of positive and negative factors.

Table 8: MicroStrategy Mobile as the top-performing option, securing the first rank due to its superior net flow score	
	Rank
MicroStrategy Mobile	1
Tableau Mobile	4
Power BI Mobile	5
SAP Analytics Cloud Mobile	3
Qlik Sense Mobile	2

The final ranking of mobile reporting solutions, as presented in Table 7, highlights MicroStrategy Mobile as the top-performing option, securing

the first rank due to its superior net flow score. Qlik Sense Mobile follows in second place, demonstrating competitive performance despite a slightly negative net flow. SAP Analytics Cloud Mobile ranks third, benefiting from a balanced trade-off between positive and negative flow values. Tableau Mobile and Power BI Mobile take the fourth and fifth positions, respectively, indicating that their drawbacks outweigh their advantages compared to the higher-ranked alternatives. These rankings provide valuable insights for decision-makers seeking the most effective mobile business intelligence solution based on a multi-criteria evaluation approach.

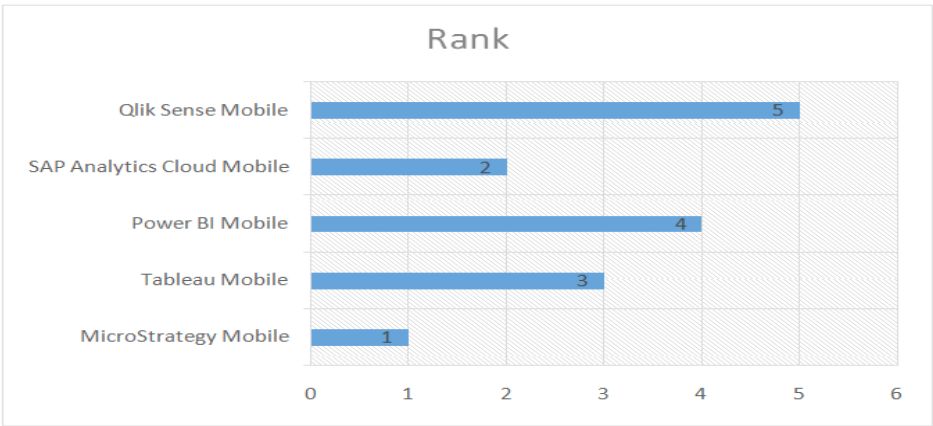


Figure 7 : Presents the final ranking of mobile business intelligence (BI) solutions

Conclusion

The successful implementation of MicroStrategy Mobile and tablet/iPad reporting in banks has significantly improved accessibility to critical business data and reports for employees and stakeholders. This advancement has led to increased user adoption, satisfaction, and engagement, reinforcing the company’s confidence in its ability to deliver industry-leading financial services. A comprehensive evaluation of mobile business intelligence solutions across multiple criteria has identified MicroStrategy Mobile as the top-performing option, owing to its strong positive flow and net flow scores. Qlik Sense Mobile follows closely, showcasing robust performance, while SAP Analytics Cloud Mobile secures third place, offering a balanced mix of strengths and weaknesses. In contrast, Tableau Mobile and Power BI Mobile, ranking fourth and fifth respectively, exhibit certain limitations that impact their overall effectiveness compared to the higher-ranked alternatives. These findings highlight the critical role of factors such as user satisfaction, adoption rate, report accessibility, implementation time, maintenance cost, and response time in the selection of an optimal mobile business intelligence solution.

References

1. Ghazawneh, Ahmad, Osama Mansour, and Magnus Bergquist. "Strategizing in digital application marketplaces." In 29th Australasian Conference on Information Systems, ACIS2018, Sydney, Australia, December 3-5, 2018, vol. 29. 2018.

2. Sajjad, Bushra, A. Mir, A. Khawar, F. Bashir, and A. Tariq. "Software Engineering: An open source service oriented Mobile Business Intelligence Tool (MBIT)." (2009).

3. Bhombe, Aarjavi, KshitijWalukar, YashThakare, and ShaileshKamble. "Comparative analysis of two bi tools: Micro strategy and tableau." In Proceedings of International Conference on Advancements in Computing & Management (ICACM). 2019.

4. Dike, Daniel, and LusilaParida. "The micro leadership strategy of the principal to implementing character education in elementary school." Jurnal Prima Edukasia 8, no. 1 (2020): 51-66.

5. Phillips, Peter J., and Gabriela Pohl. "MicroStrategy, Bitcoin Yield, Complete Markets." Available at SSRN 5038109 (2024).

6. Wixom, Barbara H. "Business intelligence software for the classroom: MicroStrategy resources on the Teradata University network." The Communications of the Association for Information Systems 14, no. 1 (2004): 46.

7. Ghazawneh, Ahmad, and Ola Henfridsson. "Micro-strategizing in platform ecosystems: a multiple case study." (2011).

8. Badami, ShakirAhmedali, and JitheshSathyan. "micE model

- for defining enterprise mobile strategy." *International Journal on Recent Trends in Engineering & Technology* 10, no. 1 (2014): 95.
9. Ramachandran, M., Kurinjimalar Ramu, and ManjulaSelvam. "Investigation of Marine Current Energy Plant Using PROMETHEE Method." (2022).
10. Kružić, Katarina. "Priručnik za MicroStrategy-poslovanje analitika kroz primjere." PhD diss., University of Rijeka. Department of Informatics, 2021.
11. Smith, William M., and Sara Charen. "Geospatial BI: How businesses are keeping pace with mobile customers." In *As Close as Your Conference Room*, vol. 16, no. 2, p. 45. 2011.
12. Tutunea, Mihaela FiloŢeia. "Business intelligence solutions for mobile devices—an overview." *Procedia Economics and Finance* 27 (2015): 160-169.
13. Fakeeh, Khalid A. "The Practice and Prospects of Accounting Information Systems (AIS)." *Practice* 10, no. 3 (2015): 16-22.
14. Brans, Jean-Pierre, and Yves De Smet. "PROMETHEE methods." *Multiple criteria decision analysis: state of the art surveys* (2016): 187-219.
15. Brans, Jean-Pierre, PhVincke, and Bertrand Mareschal. "How to select and how to rank projects: The PROMETHEE method." *European journal of operational research* 24, no. 2 (1986): 228-238.
16. Oubahman, Laila, and Szabolcs Duleba. "Review of PROMETHEE method in transportation." *Production Engineering Archives* 27, no. 1 (2021): 69-74.
17. Selvam, Manjula, Sathiyaraj Chinnasamy, M. Ramachandran, and Ramya Sharma. "Challenges, Alternatives, and Paths to Sustainability for Health Information Exchange Efforts Using PROMETHEE Method."
18. Bogdanovic, Dejan, Djordje Nikolic, and Ivana Ilic. "Mining method selection by integrated AHP and PROMETHEE method." *Anais da Academia Brasileira de Ciências* 84 (2012): 219-233.
19. Bogdanovic, Dejan, Djordje Nikolic, and Ivana Ilic. "Mining method selection by integrated AHP and PROMETHEE method." *Anais da Academia Brasileira de Ciências* 84 (2012): 219-233.
20. Corrente, Salvatore, José Rui Figueira, and Salvatore Greco. "The smaa-promethee method." *European Journal of Operational Research* 239, no. 2 (2014): 514-522.
21. Gul, Muhammet, Erkan Celik, Alev Taskin Gumus, and Ali Fuat Guneri. "A fuzzy logic based PROMETHEE method for material selection problems." *Beni-Suef University Journal of Basic and Applied Sciences* 7, no. 1 (2018): 68-79.
22. Venkata Rao, R., and Bhisma K. Patel. "Decision making in the manufacturing environment using an improved PROMETHEE method." *International Journal of Production Research* 48, no. 16 (2010): 4665-4682.
23. Briggs, Th, P. L. Kunsch, and Bertrand Mareschal. "Nuclear waste management: an application of the multicriteria PROMETHEE methods." *European Journal of Operational Research* 44, no. 1 (1990): 1-10.
24. Feng, Feng, Zeshui Xu, Hamido Fujita, and Meiqi Liang.

"Enhancing PROMETHEE method with intuitionistic fuzzy soft sets." *International Journal of Intelligent Systems* 35, no. 7 (2020): 1071-1104.