

Why Large Enterprises Struggle to Close Their Books—and How Automation Can Help

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Abstract: Closing the books at the end of the month or quarter is one of the most important activities in any multinational company. However, many organizations still depend on manual journal entries, spreadsheet-based reconciliations, disconnected systems, and repeated follow ups between finance teams. These issues can delay reporting and make it difficult for executives to make timely decisions. This article explains the common reasons why large companies struggle to close the books on time. It also presents a finance automation model that can help reduce manual effort, improve accountability, and create a more reliable close process. The article discusses areas such as automated journal entry workflows, account reconciliation tools, fixed asset depreciation, foreign exchange revaluation, intercompany accounting, and financial certification. The goal of this article is to show how modern finance systems can help companies close their books faster while also improving audit readiness.

Keywords: Automation; Enterprises; Close Cycle; Accounts; Fiscal Period

1. Introduction

The financial period-end close processes, that every multinational accounting team carries out during the month-end, quarter-end and year-end to present their financial reports to the market is traditionally considered as the most complex process in the accounting and corporate finance world. The accounting teams of large multinational companies with multiple business units across geographies with diverse cultures are common. They undergo severe pressure to close the books and publish the financial reports to market on time due to disconnected systems and tight deadlines. [1]. The intricacy of the close process is directly related to the number of worldwide branches that enterprises acquire over a period of time with disconnected ERP systems and no well-defined uniform closing processes.

There were significant developments in technology during the mid of 2000s in financial business processes automation. The large organizations were either slow to adapt the technology in their firms or adapted it partially that did not solve the structural problems underneath. The main challenges that the large enterprises faced were mainly due to integration, data quality and poor change management within the organization. [2]. This paper will look at the unique aspects that slows the speed of closing books of large business organizations and explore how automation can be accurately measured in terms of actual close cycle performance, error rates, and cost measures. Based on the secondary quantitative data through the enterprise surveys, and industry benchmarking studies carried out before 2018, the analysis aims at determining the trend of adoption and best practice that demonstrate performance differentials within organizations.

2. Literature Review

Since the late 1990s, when enterprise resource planning systems began to revolutionize the infrastructure of corporate accounting, the processes of financial reporting and accounting have received scholarly articles [20]. Initial analysis indicates that close cycle variance was widespread in large firms from 2004 to 2010. Variance spanned from less than five days to ten days with regards to the monthly closes [3]. Researchers ascribed this gap to variations in



the level of system integration maturity, complexity of chart of accounts, and the level of reconciliation automation rather than manual reconciliation by accounting staff.

The virtual close intensified the urge to keep financial records up-to-date, and instant periodic close become a hypothetical trend in the management accounting literature in the early 2010s. Although no big business had gone completely virtual by 2017, the discussion stimulated the investment in ongoing accounting activities and real-time data integration measures [4]. The researchers have presented examples of incremental investments in automation led to gradual declining close duration over time. The research also noted that the performance of an organization with an established automated closing process enhanced considerably when compared to the organizations where technology in implemented in parts [19]. Absence of strategic sequencing and structured closing playbooks was one of the primary reasons why technology investments did not bring significant closing process improvements.

One of the barriers was intercompany reconciliation which was especially well recorded in the literature. By 2008-2015, intercompany transactions continued to be the biggest source of close delays in multinational enterprises, varying between 28 and 43% of close time in firms with more than fifty employees [5]. Tightening of transfer pricing rules warranted more documentation and precision in the intercompany accounting regulations throughout the world increased the reconciliation timings [21]. Automation systems utilized for intercompany matching had reported high profile returns and reduced the manual intercompany effort by approximately 60 to 75%.

The inefficiencies of human element inside close process were studied which included the impact of organizational structure and change management in determining the automation outcome [22]. According to the published literature (2012-2017), the argument was that the ability of technology in itself was not fruitful to achieve close cycle enhancement; it also required restructuring of finances capabilities, reformation of worker functions, and staff reskilling. Firms that treated automation as a strictly technical project and not involving process redesign achieved less efficiency [6]. The literature also found a positive relationship between adoption of shared service centre and reduction of the close cycle duration. The centralized finance operations reflected shorter close cycle and low per-transactions costs as opposed to the decentralised ones.

3. Research Framework

The study adheres to the general scheme of qualitative research based on the systematic analysis of the literature of period end closing for select enterprises prior to 2018 [25]. The secondary qualitative approach enables the generation of patterns, themes and explanatory models, at a large scale of evidence without necessarily depending on the resources from the primary data collection [7]. This paradigm is appropriate to the investigation of structural and organizational phenomena, including the close processes design and the introduction of automation.

The analysis included the quantitative analysis of data [24]. Organized and analysed with the assistance of Microsoft Excel, a collected secondary quantitative data (enterprise surveys published, financial benchmarking databases, and industry association's reports) serves as a means of determining the numerical patterns, correlations, and performance differentials between segments of enterprises [8]. This technique of study is a combination which includes descriptive qualitative thematic analysis as well as the precision of quantitative measures and involves both contextual and empirical results. This hybrid method would be consistent with the essence of multi-dimensional approach to study close process performance.

In the study, the comparative analysis technique has been employed in which high-performing enterprises are the ones that execute the monthly financial close process in five calendar-days as compared to those enterprises that perform at medium and at the bottom [23]. This degree of performance segmentation coincides with the generally accepted benchmarking methodology literature on the financial close and makes it possible to identify the distinguishing practices and capabilities that can be used to justify the difference in the degree of performance [9]. The secondary data is quantitatively analysed to study the difference in performance at different levels and assess the connection between specific investment in automation and the improvement in the closing cycle.

4. Results and Discussion

A longitudinal analysis of benchmarking data within the research period presents an in-depth and performance across different levels of an enterprise in relation to financial close-time [10]. As indicated in Table 1, the performance of top quartile was statistically more by approximately 60 to 65% than that of bottom quartile performers. The timelines drawn between 2008 and 2017 were also disproportional and were more concentrated on top-quartile performers.

Table 1. Average Monthly Financial Close Duration by Performance Tier (2008–2017)

Performance Tier	2008 (Days)	2011 (Days)	2014 (Days)	2017 (Days)	Change 2008-2017
Top Quartile	4.8	4.2	3.9	3.4	-29.2%
Second Quartile	7.3	6.9	6.4	5.8	-20.5%
Third Quartile	10.6	10.1	9.5	8.9	-16.0%
Bottom Quartile	14.2	13.8	13.1	12.4	-12.7%
Industry Average	9.2	8.8	8.2	7.6	-17.4%

The pace at which top-quartile enterprises had made improvements in the cycle significantly over the study period was 29.2% or 1.4 days as compared to 1.8 days or 12.7 in bottom-quartile performers. The rising relative change in tiers suggests disproportionately high investment in automation may not completely reduce the closing cycle. The close duration of industries dropped to 7.6 days as compared to the 9.2 days, yet, there was still a wide interquartile range, meaning that there was still structural variance in enterprise performance that could not be solved by technology availability.

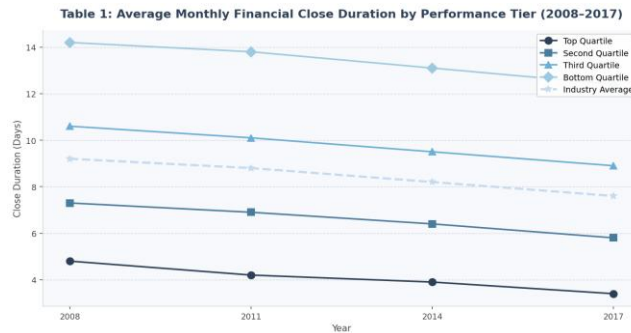


Fig 1. Average Monthly Financial Close Duration by Performance Tier (2008–2017)

The time assignment of close process to the functional activities groups reveals that the close cycle time allocation to the reconciliation and intercompany activities comprises the largest share of the total time at all the levels of performance, but the proportion of the time allocated is remarkably different between high and low performers [11]. Table 2 includes a time allocation analysis of time and movement research of enterprises surveyed between 2013 and 2016.

Table 2. Close Process Time Allocation by Activity Category and Performance Tier (2013–2016 Average)

Close Activity Category	Top Quartile (%)	Top Quartile (Hrs)	Bottom Quartile (%)	Bottom Quartile (Hrs)
Data Collection & Aggregation	8%	6.5	22%	66.5
Data Correction & Cleansing	5%	4.1	18%	54.4

Account Reconciliation	24%	19.6	26%	78.6
Journal Entry Processing	15%	12.2	14%	42.3
Consolidation & Elimination	12%	9.8	10%	30.2
Review, Approval & Sign-off	18%	14.7	9%	27.2

The top-quartile enterprises average hours used in a close of a month is approximately 81.6 and the bottom-quartile participants average hours used is approximately 302.7. The proportion is approximately 1:3.7. The largest proportional differences can be found in data collection (8% vs 22%) and data correction (5% vs 18%), which proves that upstream data quality failures are the main source of the close duration inflation in low-performing enterprises.

Table 2: Close Process Time Allocation by Activity Category and Performance Tier

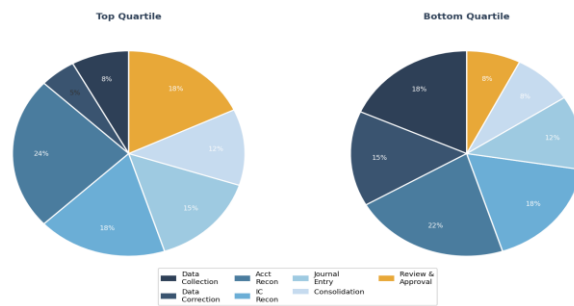


Fig 2. Close Process Time Allocation by Activity Category and Performance Tier

The rates of automation technology adoption within the main close sub-process segments indicate that there has been no general investment across all close processes. Among all the sub-process, consolidation and financial reporting automation have been widely adopted. Journal entry automation and continuous monitoring capabilities seem to be concentrated only with the early adopters [12]. The prevalence of adoption of specific automation technologies is shown in Table 3. It presents the survey of large enterprises that were conducted between 2014 and 2017.

Table 3. Automation Technology Adoption Rates and Average Efficiency Gains in Large Enterprises (2014–2017)

Automation Technology	2014 Adoption Rate	2016 Adoption Rate	2017 Adoption Rate	Avg. Efficiency Gain
Financial Consolidation System	74%	81%	86%	32%
Automated Account Reconciliation	38%	52%	61%	48%
Intercompany Matching Automation	29%	41%	54%	57%
Journal Entry Automation	18%	27%	36%	43%
Close Task Management/Workflow	42%	58%	67%	29%

Continuous Transaction Monitoring	11%	19%	26%	61%
Robotic Process Automation (RPA)	4%	14%	23%	38%

Financial consolidation systems had the greatest adoption rates with 86% penetration among the large enterprises by the year 2017, but with relatively moderate efficiency benefit of 32. Intercompany matching automation and continuous monitor of transactions offered the highest efficiency benefits of 57% and 61% respectively, but still the adaptability is comparatively lower (55% and 61% respectively,). RPA adoption increased from 4% to 23%, showing a high rate of adoption by enterprises with large volume of financial transactions after 2015.

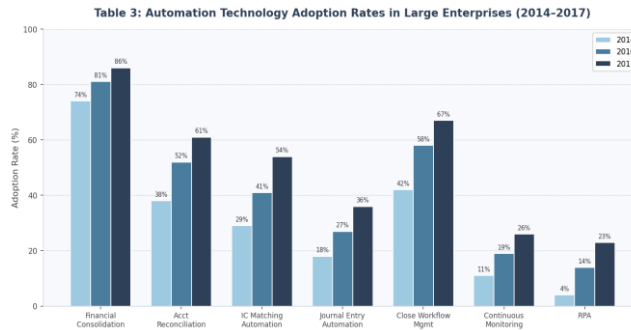


Fig 3. Automation Technology Adoption Rates in Large Enterprises (2014–2017)

Research indicates there is a negative correlation between number of unique automation technologies and days of financial close cycles (both statistically important values) meaning the closing timing decreased with the increase in the technology numbers. Table 4 presents cross-sectional data from enterprise benchmarking panels which were completed in the period between 2015 and 2017 [12]. The companies with four or more modules with automated technologies brings almost the closing cycle time by half when compared to organizations with 2 or less automations.

Table 4. Financial Close Performance by Number of Automation Technologies Deployed (2015–2017 Average)

Automation Technologies Deployed	Avg. Close Duration (Days)	Avg. Error Rate (%)	Avg. Cost per Close (\$000)	% Achieving <5 Day Close
0-1 Technologies	11.8	4.2%	\$487	4%
2 Technologies	9.4	3.1%	\$412	11%
3 Technologies	7.2	2.2%	\$338	27%
4 Technologies	6.1	1.5%	\$271	43%
5+ Technologies	5.8	0.9%	\$198	68%

On 5.8 days (average close times for organizations with 5 or more automated technologies for closing) and 11.8 days (limited automation) the ratio decrease for average close duration is 50.8. The errors got reduced to 0.9% from 4.2% constituting a reduction of the close related errors by 78.6%. Cost per close fell from \$487,000 to \$198,000, a saving of 59.3%. The percentage of the enterprises with a close less than five days increased to 68% with 5+ technologies automation. This indicates that there was a close relationship between the scope of the close process automation and the best-in-class performance.

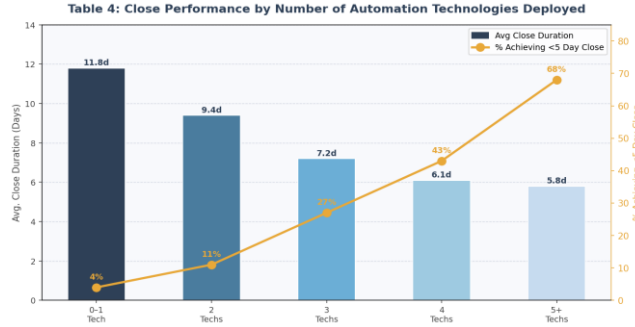


Fig 4. Close Performance by Number of Automation Technologies Deployed

The organizational model and the close performance have a positive relationship [13]. Close performance results are documented in table 5. The table shows the four different organizational models of large enterprises from surveys of 2012-2016. In centralized models, it is easy to standardize process by focusing on the centralization of expertise, and consequently achieving the economies of scale through process automation. This can barely be achieved in the fragmented organizational structures.

Table 5. Financial Close Performance by Finance Organizational Model (2012–2016 Average)

Finance Organizational Model	Avg. Close Duration (Days)	Automation Adoption Score (0-100)	FTE per \$1B Revenue	Close Cost % of Revenue
Fully Centralized / Shared Service	5.9	74	12.3	0.038%
Hybrid (Shared Service + Local)	7.8	61	16.8	0.051%
Coordinated	9.6	48	21.4	0.067%
Fully Decentralized	12.3	31	28.7	0.089%

Fully centralized models or shared service excelled over the fully decentralized models on all the metrics. Close period duration was decreased by 6.4 days (52.0%). Automation adoption was rated as 43% higher, the number of FTEs per revenue unit was low and close cost per revenue was 57.1 times lower. The hybrid model's performance proves that the level of centralization is positively correlated with the maturity and efficiency of automation adoption and reflects strongly with close cycles duration.

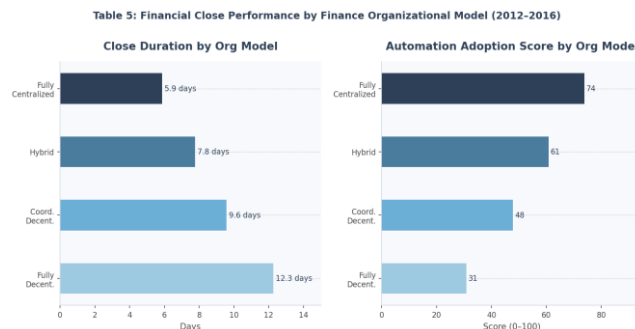


Fig 5. Financial Close Performance by Finance Organizational Model

Among all the closing processes, manual journal entries and manual reconciliation are the highest error prone processes in the closing cycle. Any errors discovered late in the close process can lead to high rework costs. Financial consolidations depend on the manual journal entries and reconciliations and any errors in these processes will impact

consolidations to a larger extent [14]. The figures show that with automation, level of errors in automated journal entries and reconciliation can be reduced 82% to 50%. Among the categories of sampled activities, a major percentage of error reduction occurs in journal entries preparation.

Table 6. Error Rates and Rework Costs by Close Activity and Automation Status (2010–2016 Average)

Close Activity	Manual Error Rate	Automated Error Rate	Error Rate Reduction	Avg. Rework Cost (Manual)	Avg. Rework Cost (Automated)
Journal Entry Preparation	3.8%	0.7%	81.6%	\$28,400	\$5,200
Account Reconciliation	2.9%	0.6%	79.3%	\$19,600	\$4,100
Intercompany Matching	4.1%	0.9%	78.0%	\$31,200	\$6,800
Consolidation Entries	2.2%	0.5%	77.3%	\$16,800	\$3,800
Financial Report Assembly	1.8%	0.6%	66.7%	\$14,200	\$4,700
Variance Analysis	1.4%	0.5%	64.3%	\$9,800	\$3,500

The highest error rate of manual close activities is between 1.4% to 4.1% and the intercompany stream ranks highest on the error rates. The most promising economic opportunity in automation is in intercompany matching and journal entry preparation that has highest rate of manual error and high reworking cost. Automation averts the high error burden cost of \$31,200 and \$28,400 annually in monthly closes to \$6,800 and 5,200 respectively.

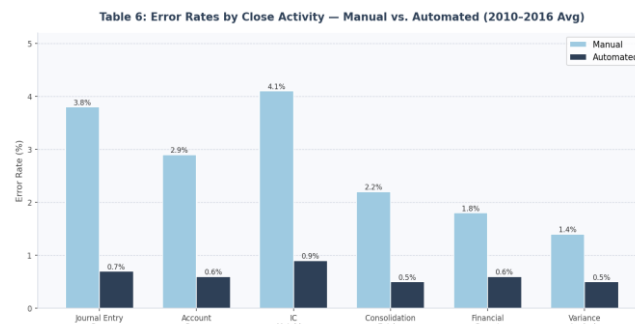


Fig 6. Error Rates by Close Activity — Manual vs. Automated

The analysis of the financial close automation project returns shows that automation projects have positive economic outcomes at a reasonable pay-back period, however the degree and speed of pay-back may vary greatly depending on the technology, the extent of the implementation, and organizational preparedness [15]. Table 7 summarizes the results of ROI analysis of the studies of enterprise automation implementation that were published in the years 2010-2017 with the median of the results displayed according to the category of the technology. It indicates that the intercompany automation and continuous monitoring technologies give the highest returns as it is congruent with the high load of manual costs and errors reported in Table 6.

Table 7. Return on Investment Analysis for Financial Close Automation Technologies (2010–2017 Studies)

Automation Technology	Median Implementation Cost (\$000)	Annual Benefit (\$000)	Payback Period (Months)	3-Year ROI	5-Year ROI
Financial Consolidation System	\$1,840	\$1,120	20	83%	205%
Automated Account Reconciliation	\$680	\$590	14	160%	334%
Intercompany Matching Automation	\$920	\$1,040	11	239%	465%
Journal Entry Automation	\$540	\$460	14	155%	326%
Close Workflow Management	\$380	\$290	16	129%	281%
RPA Implementation	\$620	\$480	15	132%	287%
Integrated Automation Program	\$4,200	\$3,860	13	176%	360%

All the types of automation technologies examined yielded 3 and 5-year ROI that is economical to warrant investing in close process automation [16]. Automation of intercompany matching produced the best ROI of 465% and the shortest payback period of 11 months due to the high manual costs it eliminates. Table 7 presents the portfolio approach to automation investment. The research validates that the integrated automation programs coupled with more than one implementation technology leads to higher three-year ROI 176% higher than the average reported for single technology.

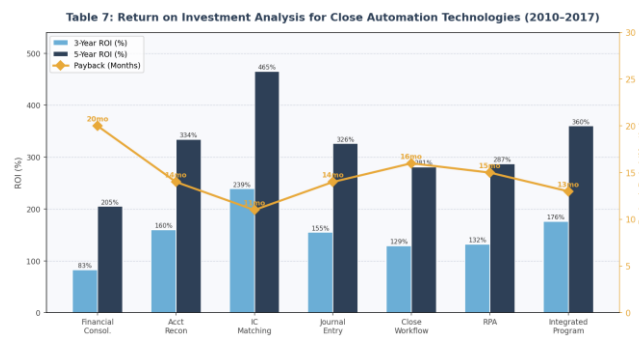


Fig 7. Return on Investment Analysis for Close Automation Technologies (2010–2017)

The close performance of different industry sector shows that transaction volume, regulatory compliance complexity and the standard organizational structure contribute significantly the close cycle performance. Table 8 reports the close performance measures of 2013-2017 survey [17]. Financial services and pharmaceutical businesses exhibit the longest close cycles with more complex reporting requirements and tax procedures, while technology and retail businesses exhibit much shorter close cycles due to less complicated legal entity structure and more prominent automation adoption.

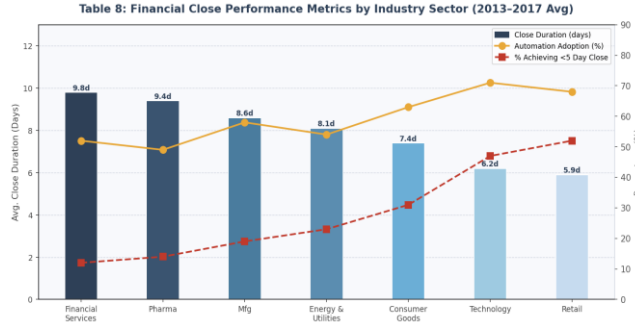


Fig 8. Financial Close Performance Metrics by Industry Sector

Table 8. Financial Close Performance Metrics by Industry Sector (2013–2017 Average)

Industry Sector	Avg. Close Duration (Days)	Automation Adoption (%)	Close Cost % Revenue	% Achieving <5 Day Close	Primary Close Challenge
Financial Services	9.8	52%	0.071%	12%	Regulatory Reporting
Pharmaceutical	9.4	49%	0.068%	14%	Entity Complexity
Manufacturing	8.6	58%	0.059%	19%	Intercompany Volume
Energy & Utilities	8.1	54%	0.055%	23%	Asset Accounting
Consumer Goods	7.4	63%	0.048%	31%	Inventory Valuation
Technology	6.2	71%	0.039%	47%	Revenue Recognition
Retail	5.9	68%	0.036%	52%	Systems Integration

The longest and shortest cycle sector (Financial Services at 9.8 days and Retail at 5.9 days), respectively, have 3.9 days spread and a 39.8% difference, respectively. The highest levels of automation adoption were observed in Technology and Retail sectors at 71% and 68% respectively and accounted the highest levels of sub-five-day close [18]. Financial Services were the least automated followed by pharmaceutical industries due to complex legal entity structure and regulatory compliance requirements. The perception of complexity in these industries are the primary reason for lower automation adoption despite the proven and positive rates of ROI.

5. Conclusion

The study has provided a theoretical analysis of the structural causes of close process inefficiencies in the large organizations and estimated the performance gains linked to investment in automation technologies. This is supported by the knowledge base that there is wide gap between the top and bottom quartile performers with the best-in-class performing organizations completing close processes 60 times faster than the underperformers (2004–2017). The performance difference cannot be explained by the size of the enterprise or the industry but only through the level of automation.

The quantitative analysis indicates that the benefits of automation are positive. In all close sub-processes, the greatest efficiency and error-reduction were in the areas of intercompany matching, journal entry automation followed by continuous monitoring automation.

Organizations that approach automation as a strategic portfolio rather than a collection of disconnected point solutions are more likely to achieve sustained, compounding improvements in performance. In contrast, organizations that focus only on implementing individual technologies often struggle to realize the same level of long-term value. Research shows that the biggest drivers for the success of automation are organizational capabilities — particularly the adoption of shared service centers and effective change management — rather than technology investments alone.

6. Future Work

This study lays a solid foundation; future researchers need to gather their own primary data to further test and strengthen the framework developed here. Specifically, longitudinal case studies tracking multiple enterprises undergoing automation adoption would help develop causal models to determine whether technology adoption, process redesign, and organizational restructuring independently influence the performance improvements. This type of primary evidence would enable researchers to move beyond the results associated with secondary data and test hypothesized causal relationships with increased precision. It allows researchers to analyze the integration effects among different automation technologies and organizational practices the cross-sectional data used in this study can identify only as associations or explain as causal relationships.

The accelerating changes in machine learning technologies over the next couple of years make it possible that future research will explore the opportunities in machine learning and artificial intelligence that can improve the performance of automation and go beyond the rule-based automation technologies studied in this paper. Even though machine learning applications in finance were at the early adoption stage before the year 2017, new trends show the possibility to further reduce the close cycle through smart detection of anomalies, predictive analysis of variances. The future investment decision of enterprises will depend on the new models from machine learning and cognitive technologies rather than the old automation baselines.

REFERENCES

1. F. Saenz de Ormijana and N. Rubio, “Innovation capture through the alternative technical concept process in PPPs in Texas: A tool for financial viability,” in *Proc. Second International Conference on Public-Private Partnerships*, Reston, VA, USA, May 2015, pp. 275–289.
2. N. Lee, H. Sameen, and M. Cowling, “Access to finance for innovative SMEs since the financial crisis,” *Research Policy*, vol. 44, no. 2, pp. 370–380, 2015.
3. D. Janvrin and M. F. Mascha, “The financial close process: Implications for future research,” *International Journal of Accounting Information Systems*, vol. 15, no. 4, pp. 381–399, 2014.
4. R. S. Dimitrov, “The Paris agreement on climate change: Behind closed doors,” *Global Environmental Politics*, vol. 16, no. 3, pp. 1–11, 2016.
5. B. Moll, “Productivity losses from financial frictions: Can self-financing undo capital misallocation?,” *American Economic Review*, vol. 104, no. 10, pp. 3186–3221, 2014.
6. E. DeHaan, T. Shevlin, and J. Thornock, “Market (in) attention and the strategic scheduling and timing of earnings announcements,” *Journal of Accounting and Economics*, vol. 60, no. 1, pp. 36–55, 2015.
7. E. J. Huang, “The role of institutional investors and individual investors in financial markets: Evidence from closed-end funds,” *Review of Financial Economics*, vol. 26, pp. 1–11, 2015.
8. D. Janvrin and M. F. Mascha, “The financial close process: Implications for future research,” *International Journal of Accounting Information Systems*, vol. 15, no. 4, pp. 381–399, 2014.
9. J. Brown and J. Dillard, “Dialogic accountings for stakeholders: On opening up and closing down participatory governance,” *Journal of Management Studies*, vol. 52, no. 7, pp. 961–985, 2015.
10. P. Cleary and M. Quinn, “Intellectual capital and business performance: An exploratory study of the impact of cloud-based accounting and finance infrastructure,” *Journal of Intellectual Capital*, vol. 17, no. 2, pp. 255–278, 2016.
11. K. V. Pincus, D. E. Stout, J. E. Sorensen, K. D. Stocks, and R. A. Lawson, “Forces for change in higher education and implications for the accounting academy,” *Journal of Accounting Education*, vol. 40, pp. 1–18, 2017.
12. R. K. Mitchell, H. J. Van Buren III, M. Greenwood, and R. E. Freeman, “Stakeholder inclusion and accounting for stakeholders,” *Journal of Management Studies*, vol. 52, no. 7, pp. 851–877, 2015.

13. M. Whitmire, "Staff churn and the monthly close: Coping with the reality," *Journal of Corporate Accounting & Finance*, vol. 28, no. 6, pp. 46–48, 2017.
14. R. H. Chenhall and F. Moers, "The role of innovation in the evolution of management accounting and its integration into management control," *Accounting, Organizations and Society*, vol. 47, pp. 1–13, 2015.
15. J. Brown and J. Dillard, "Integrated reporting: On the need for broadening out and opening up," *Accounting, Auditing & Accountability Journal*, vol. 27, no. 7, pp. 1120–1156, 2014.
16. M. Arnaboldi, C. Busco, and S. Cuganesan, "Accounting, accountability, social media and big data: Revolution or hype?," *Accounting, Auditing & Accountability Journal*, vol. 30, no. 4, pp. 762–776, 2017.
17. J. D. Warren, K. C. Moffitt, and P. Byrnes, "How big data will change accounting," *Accounting Horizons*, vol. 29, no. 2, pp. 397–407, 2015.
18. R. J. Freeman, C. D. Shoulders, G. S. Allison, G. R. Smith Jr., and C. J. Becker, "Governmental and nonprofit accounting: Theory and practice," *Journal of Public Affairs Education*, vol. 20, no. 3, p. 441, 2014.
19. D. E. O'Leary, "Configuring blockchain architectures for transaction information in blockchain consortiums: The case of accounting and supply chain systems," *Intelligent Systems in Accounting, Finance and Management*, vol. 24, no. 4, pp. 138–147, 2017.
20. F. Belfo, A. Trigo, and R. P. Estébanez, "Impact of ICT innovative momentum on real-time accounting," *Business Systems Research*, vol. 6, no. 2, pp. 1–17, 2015.
21. E. DeHaan, T. Shevlin, and J. Thornock, "Market (in) attention and the strategic scheduling and timing of earnings announcements," *Journal of Accounting and Economics*, vol. 60, no. 1, pp. 36–55, 2015.
22. K. M. Zakaria, A. Nawawi, and A. S. A. P. Salin, "Internal controls and fraud—Empirical evidence from oil and gas company," *Journal of Financial Crime*, vol. 23, no. 4, pp. 1154–1168, 2016.
23. L. J. Abbott, B. Daugherty, S. Parker, and G. F. Peters, "Internal audit quality and financial reporting quality: The joint importance of independence and competence," *Journal of Accounting Research*, vol. 54, no. 1, pp. 3–40, 2016.
24. D. M. Merkl-Davies and N. M. Brennan, "A theoretical framework of external accounting communication: Research perspectives, traditions, and theories," *Accounting, Auditing & Accountability Journal*, vol. 30, no. 2, pp. 433–469, 2017.
25. J. Cohen, G. Krishnamoorthy, and A. Wright, "Enterprise risk management and the financial reporting process: The experiences of audit committee members, CFOs, and external auditors," *Contemporary Accounting Research*, vol. 34, no. 2, pp. 1178–1209, 2017.