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ARTICLES

DASHBOARD COMPLIANCE: BENEFIT, THREAT, OR BOTH?

*James Fanto**

ABSTRACT

This Article poses the basic question that is reflected in its title and that was the subject of the conference where the Article was initially presented: whether technology poses any threats to the mission of compliance and the position of compliance officers, whether it is just another useful tool for them, or whether it is something of both. It begins by explaining the origin of compliance in broker-dealers and investment advisers and its important current position in those firms. It then discusses why compliance officers have always been drawn to technology, particularly to keep up with the business sides of the firms for which they work—a need made more acute because of technological developments in the securities industry. After setting forth the question inspiring the conference, chiefly, what will be the effect of the use of new technology on compliance, the Article next articulates the following hypothesis: that more use of this technology in compliance—termed “dashboard compliance”—will increase the productivity of compliance officers, decrease their numbers, emphasize “legal” compliance, which is designed to ensure that the firm and its employees comply with the law, and diminish “values” compliance, which encourages conduct in line with firm and industry values. It then looks at the preliminary evidence, drawn from industry reports and enforcement actions of the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA), as to whether this hypothesis is supported. It observes that compliance officers are finding it necessary to use dashboard compliance, and that the SEC and FINRA are encouraging this use. It also finds that dashboard compliance is making compliance officers more productive and suggests, albeit weakly, that this enhanced productivity might result in a loss of compliance officer positions, as firms make investments in technology at the expense of hiring or retaining human compliance officers. Finally, the Article observes that there is little evidence so far about a negative effect on “values” compliance from the use of dashboard compliance. Indeed, other outcomes are possible, such as dashboard compliance liberating compliance officers from many mundane tasks of legal compliance and giving them more time for values compliance. The Article concludes by recommending that, while

* James A. Fanto is the Gerald Baylin Professor of Law and Co-Director for the Center of the Study of Business Law & Regulation, Brooklyn Law School. I am grateful for the comments from the participants in the conference listed below.

the final outcome for dashboard compliance is unclear, in coming years compliance practitioners should remain alert to its possible effects to ensure that they try to maintain all that is valuable about compliance.

INTRODUCTION

This Article is intended to provide background to the other papers in this issue, which were presented at a conference on compliance and technology.¹ It thus highlights several reasons why a conference on the topic of compliance and technology is timely. Over the past years, compliance has become an important control function in financial firms,² even if it has been around, at least among broker-dealers, since the 1970s.³ It has particularly gained importance since the financial crisis, which resulted in Congress and regulators imposing more onerous obligations on most financial firms.⁴ Our Center for the Study of Business Law & Regulation at Brooklyn Law School reflects the importance of compliance by having, as one of its missions, the study of developments in this field. This focus is partly due to the fact that many of our alumni have made careers in compliance and assumed important compliance positions in financial firms.⁵

While compliance has pursued an upward path, there has been an unrelated but continuous development in the growth of information technology, which, among other things, makes possible enhanced analysis

1. The conference was entitled “The Role of Technology in Compliance in Financial Services: An Indispensable Tool as well as a Threat?,” held at Brooklyn Law School on March 4, 2016. I thank all those who provided me with comments on the presentation that was the basis for this article.

2. The financial firms that will be the focus of the discussion below are broker-dealers and investment advisers registered with the Securities and Exchange Commission (SEC). *See* Securities Exchange Act of 1934 (Exchange Act), Pub. L. No. 94-29, § 11, 89 Stat. 97 (1975) (codified as amended at 15 U.S.C. § 78o (2012)) (registration of broker-dealers); Exchange Act, Pub. L. No. 94-29, 89 Stat. 97 (1975) (codified as amended at 15 U.S.C. § 80b-3 (2012)).

3. For an early work on broker-dealer compliance, see generally SEC. & EXCH. COMM’N, GUIDE TO BROKER-DEALER COMPLIANCE, REPORT OF THE BROKER-DEALER MODEL COMPLIANCE PROGRAM ADVISORY COMMITTEE TO THE SECURITIES AND EXCHANGE COMMISSION (1974) [hereinafter GUIDE TO BROKER-DEALER COMPLIANCE] (report done by an industry group at the direction of the SEC).

4. The obligations have grown as a result of Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd–Frank). *See* Dodd–Frank, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of 7, 12, and 15 of U.S.C.) and the rulemaking associated with it.

5. This is demonstrated by the careers of the commenters to the papers presented at the conference, who, for the most part, are compliance practitioners and alumni of our school. They included alumni such as Jane Kanter, Chief Operating Officer of ARK Investment Manager, LLC; Rebecca Sheinberg, Principal, The Carlyle Group; Jonathan Gottlieb, Managing Director, Senior Counsel, RBS Securities; and H.J. Willcox, Managing Director & Chief Compliance Officer, AQR Capital Management.

of data (i.e., data analytics).⁶ This development is influencing conduct in all kinds of domains and activities, from basic communications to job structure. Not surprisingly, information technology is affecting compliance and the nature of the compliance officer position in the private sector. From one perspective comes the classic story about technology: information technology is simply providing modern compliance officers with more tools, much in the way that previous technological advances, like the telephone, did for their predecessors.⁷ Encouraged by their firms and by regulators, compliance officers are using the technology, which makes them more productive, efficient, and effective.

There are, however, less positive outcomes that could arise from compliance officers' use of new technology. One is a recurring concern about technology—while it increases the productivity of those engaged in a particular task, it may reduce, or eliminate the need for, the number of people doing some or all of that task. As discussed below,⁸ this is a possible outcome arising from the intersection of compliance and technology today. There are other related potential outcomes as well. Technology may transform the position of compliance officers by putting them behind the computer screen, whence they receive an enormous amount of data about activities in their firms. This model, which may be valued by the firms for its cost savings and by regulators for its comprehensiveness, may reduce or eliminate the time that a compliance officer will have for other tasks, such as “walking the halls” to influence informally the conduct of others in firms. This new model of compliance made possible by technology—what I shall call here “dashboard compliance”⁹—carries the risk that a critical aspect of compliance may be devalued or neglected.

Given these possibly competing outcomes, it is timely to explore the relationship between compliance and technology, which was the goal of the conference that produced the Articles for this issue. In general, this exploration is not intended to spark resistance to technological advances, an approach of dubious success in any case. Rather, understanding the uses of technology and their effects will allow compliance practitioners and policymakers to propose strategies for those uses that maintain the goals of compliance, while also taking advantage of technology's benefits.

6. See generally SHERRY TURKLE, *ALONE TOGETHER* 151–70 (2011) (discussing how new technology changes human conduct). On the use of “big data” generally, see FED. TRADE COMM'N, *BIG DATA: A TOOL FOR INCLUSION OR EXCLUSION?* (2016).

7. See *infra* text accompanying notes 31–32.

8. See *infra* text accompanying notes 72–74.

9. I used this term in a blog, which was based upon the presentation that is the basis for this Article. See James Fanto, *Dashboard Compliance: What Will Be its Consequences?*, N.Y.U. PROGRAM ON CORP. COMPLIANCE & ENFORCEMENT: COMPLIANCE & ENFORCEMENT BLOG (June 15, 2016), https://wp.nyu.edu/compliance_enforcement/2016/06/15/dashboard-compliance-what-will-be-its-consequences.

This Article proceeds as follows. Part I first sets forth a basic description of compliance and several assumptions about its nature. Part I then discusses why compliance officers are interested in using technology today. Part II poses the basic question reflected in the title of this Article and in the subject of the conference: whether technology poses any threats to the mission of compliance and the position of compliance officers, or whether it is just another useful tool for the officers. After articulating this question and related inquiries, Part II presents the following hypothesis: technology enhances what shall be described below as “legal” compliance and may adversely affect another kind of compliance, known as “values” compliance. Part III looks at the preliminary evidence, drawn from industry reports and enforcement actions of the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA), as to whether this hypothesis is supported. Part III also draws implications from the evidence and points to directions for further research. This Article concludes by observing that, while the final outcome for dashboard compliance is unclear, in coming years compliance practitioners should be alert to the ways in which it could reinforce certain tasks in legal compliance, and undercut those tasks characteristic of values compliance.

I. COMPLIANCE AND THE ATTRACTION OF TECHNOLOGY

A. COMPLIANCE

It is important to identify at the outset the reason for compliance in broker-dealers and investment advisers. To put it simply, firms have a legal obligation to ensure that their employees and agents comply with the law and regulation. This obligation arises from firms’ statutory duty of supervision, a duty also imposed upon their supervisors.¹⁰ That is, if securities law violations occur in these regulated firms, the firms, as well as the supervisors of the violators, may be charged by the SEC (and, for broker-dealers, by FINRA) for their failure to supervise so as to have prevented the violations. There are, however, statutory defenses to this liability available to the firm and its supervisors, which essentially establish what is reasonable supervision. To take advantage of these defenses, a firm must: set up supervisory procedures and a system to ensure that all employees and agents, and their transactions and other dealings, are supervised so as to prevent violations of the law, make sure that there is

10. For broker-dealers, this duty is in 15 U.S.C. § 78o(b)(4)(E) (2012). Exchange Act, Pub. L. No. 94-29, § 11, 89 Stat. 97 (1975) (codified as amended at 15 U.S.C. § 78o(b)(4)(E) (2012)). The supervisors in broker-dealers have this duty because of 15 U.S.C. § 78o(b)(6)(A)(i). 15 U.S.C. § 78o(b)(6)(A)(i). This subparagraph cross-references violations enumerated under section 15 U.S.C. § 78o(b)(4), including the supervisory liability of section 15 U.S.C. § 78o(b)(4)(E). 15 U.S.C. §§ 78o(b)(4), 78o(b)(4)(E). Investment advisers (and their associated persons) have this duty under 15 U.S.C. §§ 80b-3(e)(6) & (f). 15 U.S.C. §§ 80b-3(e)(6), 80b-3(f).

adequate staffing and resources for the system in relation to the business of the firm, and then put the system into effect. Effectiveness of the system is often demonstrated by the fact that the firm identifies, and follows up on, indications of possible legal violations and punishes violators.¹¹

The statutory defense is available only if employees in the firm know their legal obligations and the necessary conduct to satisfy them, and the firm's supervisors enforce this conduct. This is where the compliance function and compliance officers come in. Compliance officers keep track of all the legal, regulatory, and other obligations imposed upon a firm and its employees, and they design policies and procedures that guide employees in how to comply with the obligations.¹² They also train the employees in these policies and procedures. Moreover, given that firm supervisors are focused on the business of the firm and that compliance officers are specialists in policies and procedures, the latter generally have the additional task of monitoring the employees' conduct for compliance with the policies and procedures and investigating actual or potential violations of the law or regulation.¹³

This Article is not the place to review the history of compliance in broker-dealers and investment advisers.¹⁴ Suffice it to say that the compliance function and compliance officers have existed in broker-dealers since at least the 1970s, shortly after the supervisory duty, discussed above, was imposed on these firms.¹⁵ Compliance received a significant impetus in 2004, when the then National Association of Securities Dealers (NASD, which is now FINRA) imposed an obligation on broker-dealers to have a chief compliance officer (CCO) and when the SEC did the same for

11. For broker-dealers, the defenses are in 15 U.S.C. § 78o(b)(4)(E)(i)–(ii), whereas for investment advisers they are in 15 U.S.C. §§ 80b-3(e)(6)(A) & (B). See 15 U.S.C. §§ 78o(b)(4)(E)(i)–(ii), 80b-3(e)(6)(A)–(B). For a discussion of the origin of this statutory duty of supervision in broker-dealers, see James Fanto, *The Vanishing Supervisor*, 41 J. CORP. L. 117, 128–44 (2015) (providing the statutory framework and the legislative and industry history for it).

12. See SEC. INDUS. ASS'N, COMPLIANCE & LEGAL DIVISION, WHITE PAPER ON THE ROLE OF COMPLIANCE 4 (2005). “Policies” are general statements of the goals of the conduct or the basic obligations involved in an area; “procedures” are detailed guidance as to how to meet the policies. See generally GEOFFREY PARSONS MILLER, THE LAW OF GOVERNANCE, RISK MANAGEMENT, AND COMPLIANCE 171–74 (2014) (discussing compliance policies and referring to procedures as part of the compliance program); INT'L ORG. FOR STANDARDIZATION, COMPLIANCE MANAGEMENT SYSTEMS—GUIDELINES, ISO 19600 20 (2014) (“Procedures should be established, documented, implemented and maintained to support the compliance policy and translate the compliance obligations into practice.”).

13. For a full discussion of the activities of compliance officers in broker-dealers, see James A. Fanto, *Surveillant and Counselor: A Reorientation in Compliance for Broker-Dealers*, 2014 BYU L. REV. 1121, 1143–48 (2014) (describing the basic tasks of compliance officers).

14. This history is discussed in more detail in Fanto, *supra* note 14, at 1130–43 (for broker-dealers). On the history of compliance in advisers, see JAMES A. FANTO, MUTUAL FUND COMPLIANCE: KEY DEVELOPMENTS AND THEIR IMPLICATIONS, RESEARCH HANDBOOK ON MUTUAL FUNDS (John D. Morely & William A. Birdthistle, eds., forthcoming 2016).

15. See, e.g., GUIDE TO BROKER-DEALER COMPLIANCE, *supra* note 4.

registered investment advisers and investment companies.¹⁶ In particular, both the NASD and the SEC emphasized in their regulations how critical the CCO and the compliance function were for ensuring that firms and their employees complied with their legal obligations. These regulations also raised the profile of compliance in the firms by, among other things, requiring that the CCO prepare a report and meet with the chief executive and the board on compliance matters.¹⁷

In the years following 2004, compliance in broker-dealers and investment advisers has become significant, particularly as an increasing number of legal obligations have been imposed upon firms and their personnel, especially after the financial crisis of 2007–2008. As specialists in what I call “legal” compliance, which is designed to ensure that the firm and its employees comply with the law,¹⁸ compliance officers have seen their status in firms rise. The SEC and FINRA have emphasized the critical importance of this function and have established regular interactions with compliance officers, whom the agencies regard as their collaborators within firms.¹⁹ Compliance officers have become conscious of the special nature of their position, seeking recognition that compliance is in fact an important and value-providing profession.²⁰

There is another origin of compliance, which in effect points to a kind of compliance that complements or accompanies legal compliance. This is a values or ethics-based approach—call it “values” compliance—that encourages conduct in line with firm and industry values.²¹ As for origins, one could point to the longstanding values-based admonition in the brokerage industry that business should be conducted in accordance with “high standards of commercial honor and just and equitable principles of trade.”²² Another source is the Federal Sentencing Guidelines, which

16. For the rule requiring a CCO in broker-dealers, see Nat’l Ass’n of Sec. Dealers, *Annual Compliance Certification and Designation of Chief Compliance Officer, Notice to Members 04-79*, FIN. INDUSTRY REG. AUTHORITY (Nov. 2004), <http://www.finra.org/sites/default/files/NoticeDocument/p011955.pdf>. For the imposition of the CCO requirement in investment advisers and investment companies, see Compliance Programs of Investment Companies and Investment Advisers, Advisers Act Release No. 2204, 68 Fed. Reg. 74,714 (Dec. 24, 2003) (codified at 17 C.F.R. pts. 270, 275 and 279 (2016)). For a general discussion of the origins of these compliance rules, see John H. Walsh, *Institution-Based Financial Regulation: A Third Paradigm*, 49 HARV. INT’L L.J. 381, 389–99 (2008). John Walsh was a commenter at the conference and is an expert on the history of compliance.

17. See FINRA RULE 3130(c) (for broker-dealers); 17 C.F.R. § 270.38a-1(a)(4) (2016) (for investment companies). This meeting is not made explicit in the investment adviser rule. See 17 C.F.R. § 275.206(4)-7.

18. See *supra* text accompanying notes 13–14.

19. See Fanto, *supra* note 14, at 1146 (discussing this interaction).

20. See *id.* at 1142–43. On the professional mission of compliance officers, see generally JOHN H. WALSH, COMPLIANCE AS A PROFESSION, MODERN COMPLIANCE: BEST PRACTICES IN SECURITIES AND FINANCE (John H. Walsh & David H. Lui, eds., 2015).

21. See Fanto, *supra* note 14, at 1160–67 (discussing the internal approach to compliance).

22. For its current version, see FINRA RULE 2010.

encourage organizations to have compliance programs that promote both legal *and* ethical conduct by their employees and agents.²³ In the securities industry, the SEC and FINRA often speak of the importance of the “culture of compliance” in a firm and the need for compliance officers to promote it.²⁴

Under the values compliance approach, employees would learn proper ways to think and to conduct themselves in accordance with the values or culture of the firm.²⁵ The values are taught to employees by compliance instruction, just as this instruction teaches them about their legal obligations. However, employees also learn about values compliance through example, as they watch how others make decisions and conduct themselves in the firm. Just as compliance officers are specialists in legal obligations, they understand the firm’s values and help draft and maintain its code of conduct or ethics. Indeed, surveys of compliance officers highlight their belief that the promotion of values is *the* main task of compliance, even above maintaining compliance with laws and regulations.²⁶ Accordingly, compliance officers might contribute to values compliance when they provide examples of proper decision making and conduct, generally by offering advice to and counseling those in the firm. From the values compliance perspective, it is important to have compliance officers “on the ground” in a firm, available and involved in most decisions and transactions, if only to remind decision makers about the values that should guide their decisions.²⁷

23. See FEDERAL SENTENCING GUIDELINES § 8B2.1 (FEDERAL SENTENCING COMM’N 2004) (describing criteria for an “effective compliance and ethics program”). On the Sentencing Guidelines and their influence on compliance, see Sean J. Griffith, *Corporate Governance in an Era of Compliance*, 57 WM. & MARY L. REV. 2075, 2084 (2016). Professor Griffith was a speaker at the conference and is a contributor to this issue.

24. See, e.g., Andrew J. Donohue, Chief of Staff, Sec. & Exch. Comm’n, *New Directions in Corporate Compliance: Keynote Luncheon Speech*, Rutgers Law School Center for Corporate Law and Governance (May 20, 2016). Speaking of compliance, Donohue notes:

I can’t stress enough the critical role a firm’s culture has on its corporate compliance program and its effectiveness. A culture of always doing the right thing, not tolerating bad practices or bad actors is essential. The culture should encourage people to ask questions and to discuss openly what is the proper response to a particular issue and how conflicts should be resolved. It should hold the higher up members of the firm to at least the same standard of conduct as those below them. I have always thought that the higher up you were in an organization, the less tolerant the firm should be of your non-compliance. If that is the culture of the firm that sends a powerful message within an organization.

Id.

25. For more discussion on values or internal compliance, see Fanto, *supra* note 14, at 1160–70.

26. See INGRID FREDEEN, NAVEX GLOB., 2015 ETHICS AND COMPLIANCE TRAINING BENCHMARK REPORT 7 (2015).

27. For a seminal article on values compliance, see generally Gary R. Weaver & Linda Klebe Trevino, *Compliance and Values Oriented Ethics Programs: Influences on Employees’ Attitudes and Behavior*, 9 BUS. ETHICS Q. 315 (1999).

Legal and values compliance are not meant to be exclusive compliance approaches; rather, they are complementary in a firm's efforts to achieve effective compliance. Certainly, employees have to know their legal obligations and be monitored as to their compliance with them, which is the domain of legal compliance. Yet there must also be values and an organizational culture that animate an employee's legal compliance and encourage him or her to go beyond compliance with just the letter of the law. For example, if a firm's culture is to encourage putting the customer first, employees may be urged to act in the customer's best interest and to forego a profit opportunity, even when it is legally permissible to take it.²⁸ Compliance officers actively participate in both legal and values compliance, which is why the head of compliance is often referred to as a chief ethics and compliance officer (CECO).²⁹

B. THE ATTRACTION OF COMPLIANCE OFFICERS TO TECHNOLOGY

From the early days of compliance, compliance officers in broker-dealers used technology to perform their tasks. A 1974 compliance handbook suggested that a compliance officer take advantage of data processing as it existed then.³⁰ This attraction to technology is not surprising, because the financial activities that compliance officers regulate internally have themselves been significantly transformed by technology. Indeed, several participants in our conference—and contributors to this issue—have addressed the role of technology in finance in their work.³¹

For example, finance professionals have embraced technology that enables them to take instantaneous advantage of information in their trading activities. Technology speeds up transactions and makes possible new trading strategies, such as high frequency trading. It also allows for the development of algorithms to “mine” data so as to produce profitable trading strategies.³² Because compliance officers must assist in the oversight of these trading activities, they have both to understand the trading activities well enough to explain how they must be done in compliance with the law and regulation, and they must use similar

28. See Donohue, *supra* note 25 (“It is also telling in a firm when questions are being asked, conflicts being resolved or decisions being made, is the discussion solely about whether we can do this or is it also about whether we should do this? Is it the right decision or course of action for the firm and its clients? I always appreciated how extremely difficult it would be to have responsibility for the corporate compliance function within a firm that did not have a good culture.”).

29. See ETHICS & COMPLIANCE INITIATIVE, PRINCIPLES AND PRACTICES OF HIGH-QUALITY ETHICS & COMPLIANCE PROGRAMS: REPORT OF ECI'S BLUE RIBBON PANEL 17 n.17 (2016) (using the term “chief ethics and compliance officer”).

30. See GUIDE TO BROKER-DEALER COMPLIANCE, *supra* note 4, at 267–72 (describing the uses of electronic data processing for tasks by the “Compliance Official”).

31. See, e.g., Tom W. Lin, *The New Investor*, 60 UCLA L. REV. 678 (2013) (discussing the new kinds of investor made possible by advances in technology).

32. See *id.* at 687–93 (surveying the use of technology in finance).

technology to keep up with analyzing the activities for compliance purposes. How can a compliance officer monitor trading that occurs in milliseconds unless he or she has a technological tool that can follow this trading, identify problems occurring within it, and even stop it if it violates certain restrictions?

Moreover, technology could simplify major compliance tasks, as discussed below. Technology can help compliance officers review email and other electronic communications, by using certain keywords or terms, to identify and flag those communications that are suspicious.³³ Training employees in their legal obligations can be done through web-based courses.³⁴ A compliance officer can do web-based searches to check the background of potential employees and review the conduct and activities of existing employees.³⁵ Even traditional “face-to-face” compliance activities, such as providing compliance advice and inspecting offices, can be effected through new technological tools.³⁶ It would thus be surprising if compliance officers did not want to use technology in their compliance work.

II. QUESTION AND HYPOTHESIS

This Part presents the question raised by compliance officers’ use of technology, which was the background question of the Brooklyn Law School conference: do current uses of technology in compliance pose any problems or threats to the position of compliance officers in broker-dealers or investment advisers? This question in turn leads to subsidiary questions, which point to different practical outcomes. Will the use of technology, like that of so many past technological advances, simply benefit compliance officers, generally because technology increases their productivity in their compliance tasks? This increase in productivity could have negative consequences by reducing the need for compliance officers, as individual officers become more productive, and thus by justifying firms’ eliminating compliance positions. Aside from this possible decline in the number of compliance officers, will there be any other negative consequences to

33. Broker-dealers have a supervisory obligation to conduct this review of communications. See FINRA RULE 3110(b)(4).

34. See SEC. INDUS. & FIN. MKTS. ASS’N, WHITE PAPER: THE EVOLVING ROLE OF COMPLIANCE 22 (2013) (discussing training responsibilities of compliance officers, including the use of electronic training tools).

35. See FINRA RULE 3110(e) (imposing a requirement on firms to investigate those who work for them). Compliance officers must be concerned about the outside activities of firm personnel because there is a risk that these activities may implicate the firm, such as where a broker or adviser uses his or her position with the firm to gain clients for an outside business activity. Moreover, if the outside activity involves securities, the firm should be involved in supervising it. See, e.g., FINRA RULE 3280 (on private securities transactions of persons associated with the member firm).

36. See FINRA RULE 3110(c) (on internal inspections in the firm). Firms are also required to have an annual meeting with each broker and supervisor on compliance matters. See FINRA RULE 3110(a)(7). This can be done electronically. See FINRA RULE 3110.04 Supplementary Material.

compliance from the use of technology? In particular, will the use undermine in any way values compliance, which, as noted above, is accomplished by a compliance officer who is “on the ground” providing advice and counseling, while also serving as an example of proper decision making and conduct?

This Article offers the following preliminary hypothesis about the effects of the use of technology on compliance: technology will enhance the productivity of compliance officers, particularly, but not exclusively, as to legal compliance. This productivity, which results from the efficiency of compliance officers engaged in dashboard compliance, will also arrest the growth in, and possibly decrease, the number of compliance officers, because firms will decide that an investment in technology for compliance officers should produce a cost savings on the personnel side. Both these results, i.e., the enhanced productivity and the decreased number of compliance officers, will mean that fewer officers will be “on the ground, walking the halls”³⁷ to provide advice and to counsel firm employees. Moreover, under this hypothesis, the remaining compliance officers will be busy with their compliance dashboards, which basically focus on legal compliance. This focus, as well as the potential loss of compliance officers, will adversely affect values compliance. Finally, any enhancement to values compliance resulting from the use of technology cannot compensate for the losses it suffers.

The goal of Part III is informally to test the above hypothesis by looking at initial—admittedly limited—data, in the form of compliance industry reviews and representative compliance cases.³⁸ First, it is useful to look in more detail at how compliance officers are currently using new technologies, because this use is the basis for the transformation in the compliance officer role. Second, it is necessary to inquire whether there is any evidence that compliance officers are becoming more productive as a result of this dashboard compliance and to ask what the effects have been on compliance generally. Third and finally, it is important to look for any available data on the answer to the most important question: whether, if technology has increased the productivity of compliance officers, it has had any disproportionately adverse effects on values compliance specifically.

III. THE EVIDENCE

A. MORE ABOUT COMPLIANCE’S USE OF TECHNOLOGY

The first factual inquiry looks for evidence of whether compliance officers are using technology to accomplish compliance tasks and which

37. See Donohue, *supra* note 25 (advising compliance officers to “‘walk the floor;’ [i]t has been surprising to me how important it is to get out among the people doing the work”).

38. A comprehensive evaluation of the evidence would demand a much larger study and article.

tasks are facilitated by dashboard compliance. Data in response to this inquiry is easy to find and comes from numerous sources. Practice-oriented literature on compliance underscores that compliance officers are increasingly turning to dashboards to assist them in their compliance tasks.³⁹ Indeed, an attendee at a typical compliance officer convention, such as the annual meeting of the National Association of Compliance Professionals,⁴⁰ must walk through a gauntlet of technology providers, who offer trinkets to entice compliance officers to stop by their booth in order to watch the provider demonstrate the latest technological product.⁴¹

General surveys of and reports on compliance in financial services reflect increased investment by firms in technological tools that help compliance officers accomplish compliance tasks, particularly monitoring employees for compliance with their legal obligations.⁴² One of the conclusions reached by these reports is that compliance officers must use technology, because otherwise they cannot adequately perform certain tasks, such as reviewing electronic communications made by employees or ensuring that data privacy is being maintained.⁴³ The reports conclude that, if anything, compliance officers are not using technology as efficiently as they could. The tool of data management,⁴⁴ and especially data analytics, where large amounts of firm data are automatically reviewed to identify trends and problems, particularly highlights this conclusion.⁴⁵ In fact, the

39. See, e.g., Shannan Layette et al., *Best Practices for Selecting Governance Risk and Compliance Software*, in PRACTICAL COMPLIANCE & RISK MANAGEMENT FOR THE SECURITIES INDUSTRY 19 (2014) (discussing how to select this software).

40. See generally *Registration: National Society of Compliance Professionals*, NAT'L SOC'Y OF COMPLIANCE PROF'L NAT'L CONFERENCE, <http://nscpcconferences.org/national/> (last visited Sept. 7, 2016).

41. I can attest to this experience myself because I attended the convention in 2014 and walked through such a gauntlet.

42. A PricewaterhouseCoopers (PwC) report focusing on banking and capital markets (presumably broker-dealers) emphasizes the growing use of governance, risk management, and compliance technology by firms in this industry. See PRICEWATERHOUSE COOPERS, STATE OF COMPLIANCE 2015: MOVING BEYOND THE BASELINE BANKING AND CAPITAL MARKETS INDUSTRY BRIEF 10–11 (2015) (explaining the purpose of this use being to increase efficiencies in certain activities, such as monitoring). A PwC report dealing with asset managers (that is, investment advisers) emphasizes that their budgets for compliance technology have increased. See also PRICEWATERHOUSE COOPERS, STATE OF COMPLIANCE 2015: MOVING BEYOND THE BASELINE ASSET MANAGEMENT INDUSTRY BRIEF 5 (2015).

43. See, e.g., SMARSH, 2015 ELECTRONIC COMMUNICATIONS COMPLIANCE SURVEY REPORT 6–7 (2015).

44. See Jason Buffington, Dan Conde & Monya Keane, *Information Governance Considerations in the Financial Services Sector*, ENTERPRISE STRATEGY GROUP (June 2015), <http://itbusinessbook.com/admin/admin/books/information-governance-considerations—in-the-financial-services-sector.pdf> (discussing the use of data management for recordkeeping requirements and for regulatory inquiries).

45. See, e.g., John Verver, *The Big Data Opportunity for Audit, Risk Management, and Compliance*, in THE EVOLVING ERA OF BIG DATA 6 (2015) (discussing how compliance officers must use data analytics to identify compliance failures). See also Bradley Hope, *Spy Software Gets a Second Life on Wall Street*, WALL ST. J. (Aug. 2, 2015), <http://www.wsj.com/articles/spy->

reports recommend that compliance departments should hire more staff with technological backgrounds, given the growing importance of technology utilization by compliance officers.⁴⁶ It is interesting to note that surveys of compliance officers also show that they are not always satisfied with the technology that is available to them, because it does not always provide or analyze the appropriate data or do exactly the tasks that the compliance officer needs completed.⁴⁷

As noted above,⁴⁸ compliance officers often use technology to keep up with the financial services industry, which itself uses sophisticated technology. A paradigmatic statement of this rationale appears in a recent SEC settlement of an administrative action involving Citigroup Global Markets, a registered broker-dealer.⁴⁹ In this case, Citigroup ran into several legal problems with the oversight of its proprietary trading desks.⁵⁰ Citigroup failed to monitor compliance by these desks with its “watch list” (i.e., a list of securities where the firm could not take a trading position because it possessed inside or confidential information that improperly gave it a trading advantage over others in the market), and its exception reports⁵¹ did not capture principal trades done at these desks with advisory accounts.⁵² Citigroup had automated systems to monitor the trading at the proprietary desks, but the systems were not functioning properly. In setting forth Citigroup’s deficiencies, the SEC made the following general

software-gets-a-second-life-on-wall-street-1438541720 (describing use of software developed by the U.S. Department of Defense and the Central Intelligence Agency to identify compliance problems in financial firms); PRICEWATERHOUSE COOPERS, MOVING BEYOND THE BASELINE LEVERAGING THE COMPLIANCE FUNCTION TO GAIN A COMPETITIVE EDGE 20–21 (2015) [hereinafter PWC, STATE OF COMPLIANCE] (PwC argues in their general survey of compliance that compliance must make more use of data analytics, which covers and analyzes all the data in a particular area).

46. *See, e.g.*, PWC, STATE OF COMPLIANCE, *supra* note 46, at 13–14 (noting that the background of compliance officers should be expanded to include more with technological and data analytical expertise).

47. *See id.* A Deloitte survey echoes this compliance officer unhappiness with technology solutions, because the solutions are perceived as being inadequate for the required tasks. *See also* DELOITTE, COMPLIANCE WEEK, IN FOCUS: 2015 COMPLIANCE TRENDS SURVEY 12 (2015).

48. *See supra* text accompanying notes 31–32.

49. *See generally* Citigroup Glob. Mkts., Inc., Exchange Act Release No. 75,729, Investment Advisers Act Release No. 4178, 2015 WL 4931787 (Aug. 19, 2015).

50. *See id.* at *2. In proprietary trading, a broker-dealer (or any financial firm for that matter) is trading securities on its own behalf, rather than for a client, and is not engaged in making a market in the securities.

51. *Id.* at *2, *5. An exception report shows activity outside the expected parameters of the activity in question. *See, e.g.*, David Tilkin, *The Landscape of Broker-Dealer Compliance and Exception Reporting Systems*, 17 PIABA B.J. 65 (2010) (discussing the exception report in the context of automated surveillance systems). It is a key report for compliance officers, because it tells them what should be investigated.

52. *See Citigroup*, 2015 WL 4931787, at *8. If a firm, like Citigroup, acts as an investment adviser for individuals or funds, under the Investment Advisers Act it cannot trade itself as principal with these advisees without obtaining their prior written consent. *See* Exchange Act, Pub. L. No. 94-29, § 29, 89 Stat. 97 (1975) (codified as amended at 15 U.S.C. § 80b-6(3) (2012)).

comment on why the technology-enhanced nature of the firm's business required that compliance officers have their own technological capabilities:

As market participants continue to rely on automated systems to conduct trading, reliable technology systems enable broker-dealers and investment advisers to fulfill effectively their compliance responsibilities. Technology oversight is a critical part of modern compliance, including management of the technology systems that compliance personnel use. Failure to oversee those systems adequately can lead to compliance failures and securities law violations.⁵³

As the *Citigroup* case suggests, the SEC, as well as FINRA, expects compliance officers to have adequate technological tools to enable them to fulfill their responsibilities. This is just a contemporary version of the SEC's and FINRA's longstanding position on compliance, namely that it should have the resources to match the business operations of a firm. The SEC would previously assert, generally in administrative proceedings, that if the firm was large and geographically dispersed, the compliance department and its staff had to reflect the complexity of the organization of the firm.⁵⁴ That is, if a firm had many branches and diverse business lines, the compliance department might need an officer in each branch and should have certain officers overseeing the various lines. In the technological version of this argument, the SEC would observe that if the firm's business operations involve sophisticated and automated trading—with a contemporary example being a broker-dealer or adviser specializing in algorithmic trading—compliance in that firm would need advanced technological tools to monitor them.⁵⁵

Today, the SEC criticizes firms for not using technology in compliance as extensively as they should. Emblematic of this regulatory message is a recent administrative proceeding involving UBS Financial Services of Puerto Rico (UBS).⁵⁶ In that case, the firm allowed its customers to take out letters of credit (LOC) with an affiliated bank.⁵⁷ Under the terms of a typical LOC, the customer could not use its proceeds to purchase securities in his or her UBS brokerage account; UBS provided margin loans for this purpose, but at an interest rate greater than that of the LOCs.⁵⁸ Moreover,

53. See *Citigroup*, 2015 WL 4931787, at *1.

54. See, e.g., First Affiliated Sec., Inc., Exchange Act Release No. 23,335, 35 SEC Docket 1172 (June 18, 1986) (finding the corporation had "inadequate staffing of its compliance department").

55. See, e.g., Barclays Capital Inc., Securities Act Release No. 10,010, Exchange Act Release No. 77,001, 2016 WL 369813 (Jan. 31, 2016) (involving Barclays's operation of its ATS dark pool, LX; as part of its remedial efforts, it promises to enhance its compliance over these activities).

56. See generally UBS Fin. Servs. Inc. of P.R., Exchange Act Release No. 76,013, 2015 WL 5693101 (Sept. 29, 2015).

57. See *id.* at *1.

58. See *id.* at *2–3.

any loans that the bank advanced to the customer under the LOC were secured by customer assets, including the customer's securities in the brokerage account.

An enterprising broker, Ramirez, persuaded his customers to obtain LOCs, draw down funds from them, transfer the funds to accounts outside UBS, and then retransfer the money back to their UBS brokerage accounts and use these proceeds to purchase shares of closed-end funds that were heavily invested in Puerto Rican municipal bonds.⁵⁹ In other words, having customers first place proceeds from the LOCs in outside accounts sidestepped the prohibition on the LOCs being *directly* used for securities purchases.⁶⁰ Ramirez had multiple incentives to operate this scheme: he got an origination fee for each LOC and a commission for each customer purchase of the closed-end fund shares.⁶¹ When the funds plunged in value because of problems associated with the underlying Puerto Rican municipal bonds, the customers received notices that they needed to put up more collateral for their LOC loans, and they complained about what the broker had advised them to do.

As it turned out, the affiliated bank had automated compliance systems that monitored and presumably detected any transfer of LOC proceeds directly into a customer's brokerage account for the purchase of securities.⁶² The same systems, however, did not pick up indirect transfers, as had occurred in this case. Moreover, UBS itself failed to update its automated surveillance systems even after operations personnel had signaled that this kind of indirect, improper use of LOC proceeds was possible.⁶³ Accordingly, in the SEC's view, UBS failed to have adequate technology in its supervisory and compliance programs.⁶⁴ In an extreme example of the regulatory push to have firms use compliance technology, the SEC has even criticized one firm for maintaining its traditional manual surveillance, without replacing it with, or having as a backup, an automated system.⁶⁵

Not only does the SEC (and FINRA) criticize firms for not having adequate, technologically enhanced compliance programs, but it also provides them with models of what the firms should be doing in this regard. Today, both the SEC and FINRA publicize their use of data analytics to identify securities law violations in broker-dealers and investment advisers,

59. *See id.* at *1.

60. *See id.*

61. *See id.* at *3.

62. *See id.* at *4.

63. *See id.* at *5.

64. *See id.*; *see also* Cantor Fitzgerald & Co., et al., FINRA AWC No. 20120349643, at 9 (Dec. 21, 2015) (failure of automated compliance systems to be designed to identify suspicious deposit and resale of microcap securities in violation of Section 5).

65. *See* Carl D. Johns, Advisers Act Release No. 3655, Investment Company Act Release No. 30,675, 2013 WL 4521777 (Aug. 27, 2013) (adviser employee falsifies information provided to compliance officer; the SEC asks why the firm did not have a backup automated system to check the veracity of the employee's representations).

which is why, incidentally, both regulatory bodies are harsh on firms that provide them with incomplete or missing data.⁶⁶ A good example of the SEC's and FINRA's use of "big data" is a recent examination of the sale of structured products across broker-dealers, which was conducted by the SEC's Office of Compliance Inspections and Examinations (OCIE).⁶⁷ These products are securities based upon other investments and they are designed to provide a return in a low-interest environment, but often do not have much of a track record, are difficult to understand, and are costly.

Here, the OCIE used its own data analytics to identify improper sales of structured products in brokerage branches throughout the industry, where, for instance, there were excessive concentrations of the products in customer accounts or where the products were "unsuitable" for the customer in question, given his or her investment intent or age.⁶⁸ Clearly, the message from this risk alert is that the compliance officers of a broker-dealer should be using similar data analytics tools to spot or to prevent legal violations in their own firm.⁶⁹ In fact, a CCO would likely be uncomfortable if the SEC or FINRA enforcement staff came to the firm with evidence of suspicious transactions on the basis of their own analyses, which the firm's compliance program had not identified as being worthy of investigation.

B. EVIDENCE OF INCREASED PRODUCTIVITY OF COMPLIANCE OFFICERS

An important part of the hypothesis enumerated earlier is that the use of technology would increase the productivity of compliance officers and, possibly, result in a decline in their number. Available evidence supports both propositions, although evidence for the decline is weak. Consultant reports on compliance refer to significant productivity gains that can arise from automation and to the cost pressures that firms are experiencing to reduce their expenses on the compliance function as a result of these productivity gains. McKinsey discusses in detail how costs are compelling investment banks to automate services, including in such areas as risk

66. See, e.g., FINRA, <http://www.finra.org/industry/market-regulation> (last visited Oct. 3, 2016) (describing the sophistication of FINRA's surveillance). Both broker-dealers and investment advisers have extensive reporting obligations, with the formers' being more extensive. The SEC and FINRA have always needed the data provided by this reporting so that they can conduct their own surveillance of regulated firms and the securities markets. Now that they are using data analytics for this surveillance, they are particularly dependent upon accurate reporting from the regulated firms.

67. See Office of Compliance Inspections and Examinations, *National Exam Program Risk Alert, Broker-Dealer Controls Regarding Retail Sales of Structured Securities Products*, SEC. & EXCH. COMM'N (Aug. 24, 2015), <https://www.sec.gov/ocie/announcement/risk-alert-aug-24-2015.html>.

68. See *id.* at 4–5.

69. See Donohue, *supra* note 25 (discussing how firms must automate certain compliance functions).

management, regulatory reporting, and compliance.⁷⁰ Its report also suggests that these financial firms, which are regulated as broker-dealers, can obtain a 40% productivity gain from automation in risk, reporting, and compliance, generally (in all but the largest firms) by using third-party products.⁷¹ McKinsey thus projects that firms will invest heavily in “big data” and data analytics to save on costs and to improve efficiency in risk management (and presumably compliance).⁷² Moreover, it specifically refers to the likely reduction in the need for “voice staff” (i.e., human beings) as a result of increasingly automated compliance, which it characterizes as “disruptive,”⁷³ no doubt due to the compliance officers being displaced. Other industry surveys also report that the compliance function must become more efficient and reduce costs as a result of overall cost pressures on firms, and the surveys note the possibility of staff reductions in compliance.⁷⁴ In addition, journalists point to a trade-off that firms are now contemplating: more investment in technology at the expense of hiring more compliance officers.⁷⁵

The compliance sector’s recognition that the use of technology could improve its efficiency is based upon the model of dashboard compliance.⁷⁶ Under this model, a compliance officer can be envisioned as sitting before a single or multi-screen computer “dashboard,” to which data from a firm’s various activities feeds is processed. The model thus primarily highlights compliance officers’ task of surveillance, where they ensure that employees are following compliance procedures and conducting their activities in accordance with the law, regulation, and the firm’s code of conduct. The dashboard could even allow compliance officers to perform the other compliance tasks identified above, such as training employees through online programs, sending out compliance alerts, and complying with information requests from regulators. Indeed, third-party vendors of compliance technology advertise and demonstrate how their dashboard products allow compliance officers to do an increasing number of compliance tasks from their desks.⁷⁷ Thus, under the dashboard model, a

70. See McKinsey & Co., *Two Routes to Digital Success in Capital Markets* 20–21 (Corp. & Inv. Banking, Working Paper No. 10, 2015).

71. See *id.* at 21.

72. See *id.* at 25–26.

73. See *id.* at 22.

74. See PWC, STATE OF COMPLIANCE, *supra* note 46, at 15, 22.

75. See Henry Engler, *Dashboard Compliance: Automation Push May Carry Unforeseen Risks*, THOMSON REUTERS (July 13, 2016), <http://thomsonreuters.lookbookhq.com/regulatory-change-2016/DashboardComplianceAutomationPushMayCarryUnforeseenRisks> (referring to industry sources who discuss this trade-off).

76. See Fanto, *supra* note 10.

77. See, e.g., Press Release, Compliance Made Easy: Introducing the Bloomberg Compliance Center, CMPC (Dec. 17, 2013), <https://www.bloomberg.com/company/announcements/compliance-made-easy-introducing-the-bloomberg-compliance-center-cmpc/> (providing, among other things, real time review of electronic communications).

compliance officer becomes a somewhat remote figure—not unlike the security guard who monitors a building behind screens of different locations and activities—generally engaged in legal compliance.

Is dashboard compliance, with its enhanced efficiency, the kind of compliance model that the use of technology is producing? There is evidence of its existence from reported SEC and FINRA enforcement actions. In the *Citigroup* case mentioned above, the SEC observed that part of the firm’s failure to monitor its proprietary trading desks was due to the situation of the “Information Barriers Surveillance Group,” which is part of the firm’s compliance function. For cost savings, Citigroup had moved that group from New York City, where it had been located close to the trading desks, to Buffalo, where it monitored proprietary trading remotely.⁷⁸ The case thus presents both the dashboard model in action and one of its potential problems—the lack of a physical presence by the compliance officer, which is further explored below.

Another good example of dashboard compliance appears in an SEC enforcement action against the broker-dealer Wells Fargo Advisers.⁷⁹ In this case, a broker in the Miami branch of the firm and several of his clients acquired a significant position in Burger King, which was subsequently the target of an acquisition offer by a private equity firm. It turned out that the broker had received inside information from another of his customers and had passed it along to his clients, and they had all made significant profits from their purchase of Burger King shares.⁸⁰

Under the law, a broker-dealer must have procedures to prevent insider trading.⁸¹ In accordance with the firm’s procedures, a compliance officer in the Miami branch, Judy Wolf, conducted a “look back” review of purchases of Burger King securities before the announcement of the deal. She discovered a number of suspicious factors: the broker and his clients had the top holdings of Burger King stock in all of Wells Fargo; they had bought the stock within ten days before the announcement of the acquisition; they had made significant profits; Burger King was located in Miami; and the broker and his customers were all Brazilian. Wolf concluded, nonetheless, that there was no problem with the stock purchases and closed the review without any findings.⁸² Subsequently, the SEC

78. See *Citigroup Glob. Mkts., Inc.*, Exchange Act Release No. 75,729, Investment Advisers Act Release No. 4178, 2015 WL 4931787, at *4 (Aug. 19, 2015) (noting that “[t]his move generated cost savings, but also required the hiring of new personnel and resulted in the surveillance personnel being geographically separated from other CGMI departments”). *Citigroup* eventually brought this surveillance group back to Jersey City, New Jersey. *Id.*

79. See generally *Wells Fargo Advisers, LLC*, Exchange Act Release No. 73,175, Investment Advisers Act Release No. 3928, 2014 WL 4678598 (Sept. 22, 2014).

80. See *id.* at *8.

81. See Exchange Act, Pub. L. No. 94-29, § 11, 89 Stat. 97 (1975) (codified as amended at 15 U.S.C. § 78o(g) (2012)).

82. See *Wells Fargo*, 2014 WL 4678598, at *8.

brought an action against the broker and his clients for insider trading and began to look into Wells Fargo's conduct in the case. Alerted to the SEC's investigation, Wolf "redrafted" her initial compliance memorandum to suggest that she had arrived at the "no findings" determination because there were rumors about the acquisition at the time of the stock purchases in question. In a separate enforcement action, the SEC successfully charged her with falsifying the compliance records.⁸³

The action against Wells Fargo for its failure to prevent or detect insider trading highlights the existence of dashboard compliance in the firm, as well as the SEC's conclusion that the compliance did not go far enough. It is clear from the SEC's recitation of the facts in its settlement with Wells Fargo that the firm had dashboard compliance. In fact, it had two kinds of remote compliance in its main office (as opposed to in its Miami branch). First, it had a central supervision unit that was tasked with ensuring that branch office personnel did not commit violations of the securities laws, which it did by conducting a daily review of trades and emails.⁸⁴ Second, it had a centralized anti-money laundering (AML) unit that reviewed accounts for "unusual activity," including insider trading.⁸⁵ The SEC contended that these two units should have coordinated their review, especially since the AML unit had picked up the transfer of funds for the purchase of the Burger King securities in the broker's account, and the central supervision unit had generated alerts about the concentration of these securities in the accounts of the broker and his customers.⁸⁶ The SEC's message was relatively clear:

83. See *In re Wolf*, Release No. 851, 2015 WL 4639230, *7–10 (Admin. Proc., Aug. 5, 2015)(describing her falsification of the compliance records). However, the administrative law judge hearing the case declined to impose any penalty upon her, concluding, among other things, that she had been punished enough, since she would never again find a position in the industry. In fact, the ALJ remarks on the compliance officer position and its risks were notable:

In my experience, firms tend to compensate compliance personnel relatively poorly, especially compared to other associated persons possessing the supervisory securities licenses compliance personnel typically have, likely because their work does not generate profits directly. But because of their responsibilities, compliance personnel receive a great deal of attention in investigations, and every time a violation is detected there is, quite naturally, a tendency for investigators to inquire into the reasons that compliance did not detect the violation first, or prevent it from happening at all. The temptation to look to compliance for the "low hanging fruit," however, should be resisted.

Id. at *23. This case generated some attention in the compliance community since it raised the issue about how compliance officers should add to compliance memoranda or records that memorialize the results of their monitoring and investigations, which is essentially what Wolf was doing. In her case, when amending her initial report of "no finding," she did not clarify when her amendment was done, suggesting that she was trying to hide her previous flawed investigation. See *id.* at *9. One could imagine, however, a compliance officer writing a "bare bones" memorandum at first, and then filling it in with more detail later.

84. See *Wells Fargo*, 2014 WL 4678598, at *4.

85. See *id.* at *8.

86. See *id.* at *8–9.

it approved of the centralized and remote compliance units; it just wanted them to coordinate their work with each other and with the compliance officers in the field.

As one might expect, there is no mention of a decline in the number of compliance officers as a result of dashboard compliance in these enforcement actions. Of course, even when the SEC or FINRA criticizes a firm for not having adequate technological monitoring, it is unlikely that they would ever accuse the firm of having *too many* compliance officers. A FINRA settlement with Fidelity Brokerage is interesting in this respect.⁸⁷ Fidelity failed to identify a fraudulent scheme where an individual pretended to be a Fidelity broker, opened joint accounts with elderly Fidelity clients, transferred funds out of the clients' individual accounts into the joint ones, and then moved the funds from the joint accounts into the fraudster's individual accounts. The SEC blamed Fidelity for having inadequate automated surveillance technology, because in its view this kind of technology would have identified and flagged the number of joint accounts with the same email and physical addresses and the suspicious movements of funds into and out of these accounts. Indeed, while the fraud was ongoing, Fidelity changed its surveillance technology to identify this kind of suspicious activity.⁸⁸

However, as the SEC observed, Fidelity had assigned only one compliance officer, who was busy with other work at the time of the fraud, to look at the alerts generated by this technological tool, and the backlog in the officer's work delayed the review of an alert generated by the fraudster's multiple accounts.⁸⁹ The message of this case thus runs counter to the hypothesis stated above, for the dashboard compliance here would require more, not fewer, compliance officers. Intriguingly, however, FINRA's settlement with Fidelity called for only enhancements to the technology, not for more compliance officer hires.⁹⁰

The Fidelity case is a reminder that caution should be taken as to the conclusion that compliance officers' use of dashboard compliance will necessarily result in a decline in their numbers. After all, as that case also suggests, the outcome could be different. A firm might need more, rather than fewer, compliance officers, albeit those with a technological background. After all, there is considerable expertise required to be a compliance officer for certain broker-dealers and investment advisers, such as those dealing in high frequency trading. In a relatively recent case, a firm engaged in this kind of trading was disciplined for, among other things, having a coding error that resulted in many of its trades being made in

87. *See, e.g.*, FINRA Acceptance, Waiver and Consent, Fidelity Brokerage Services LLC, No. 2014041374401 (Dec. 18, 2015) (This is the FINRA version of a settlement.).

88. *See id.* at 4.

89. *See id.*

90. *See id.* at 13 (Fidelity's Corrective Action Statement).

violation of Regulation National Market System (Regulation NMS).⁹¹ A compliance officer in this situation would have had to be familiar enough with the firm's algorithmic trading strategies to understand where they could go astray and then would have had to monitor their use. Indeed, in a recent notice to its members, FINRA listed the many supervisory and compliance tasks associated with the use of algorithmic trading strategies, which all indicate how much technological understanding and training, including familiarity with the coding involved in the trading, that a compliance officer must have.⁹² One result might be just that technologically sophisticated compliance officers replace existing ones, not that the number of compliance officers shrinks.

In sum, the picture is mixed regarding the productivity and employment effects from compliance officers' use of dashboard compliance, although the evidence presented here is far from comprehensive. All signs indicate that technology is enhancing the productivity of compliance officers in a challenging environment where firms are looking to cut costs. Dashboard compliance is the resulting outcome. Again, this model has the compliance officer checking on the firm's activities, generally at a central office away from branches and other locations, as data is fed into the dashboard that, if all goes well, highlights problems or exceptions for the compliance officer to investigate. This use may result in a loss of compliance officer positions—or perhaps the replacement of existing ones with others having a technological background—but the exact outcome is unclear.

C. IS THERE ANY EFFECT ON VALUES COMPLIANCE?

The third and final inquiry asks whether there is any evidence that the technology-inspired increased productivity and decreased number of compliance officers (if such is happening) are having any effect on values compliance. This is a daunting empirical task because one would have to show that compliance officers' focus on legal compliance, coupled with a decline in their numbers, resulted in their having less time or opportunity to engage in values compliance. Then, this data would have to show a causal connection to an increase in employee misconduct in firms. Clearly, this inquiry would demand both a considerable amount of evidence (i.e., movement of compliance officers into remote surveillance units, their increased productivity, the decline in their numbers, the shift in their compliance priorities, the increase in misconduct) and the expertise to test it. In addition, there would be a need to demonstrate that other explanations

91. Latour Trading LLC, Exchange Act Release No. 76,029, 2015 WL 5729485 (Sept. 30, 2015). The error made the firm "trade through" the best available quotations, which means doing trades at prices other than the ones deemed to be the best under the regulation. *Id.* at *3.

92. See FIN. INDUS. REGULATORY AUTH., EQUITY TRADING INITIATIVES: SUPERVISION AND CONTROL PRACTICES FOR ALGORITHMIC TRADING STRATEGIES, REG. NOTICE NO. 15-09 (2015).

(e.g., cost pressure alone accounting for a decrease in the number of compliance officers) do not account for any results that emerge.

One purpose of this Article is to highlight the inquiry and suggest the data that would be useful to gather, although it is not easily available.⁹³ Some evidence exists that compliance officers are paying less attention today to values compliance. For example, former SEC Commissioner Daniel M. Gallagher expressed his concern that compliance officers would reduce their face-to-face advice to brokers and advisers, but he did not attribute this to dashboard compliance. Rather, he explained the phenomenon as resulting from compliance officers' fear of incurring supervisory liability.⁹⁴

Important findings on values compliance in broker-dealers may emerge from FINRA's current, but limited, review of how firms promote and maintain an appropriate culture.⁹⁵ In this review, FINRA is specifically asking firms, among other things, how their compliance officers "establish[], communicat[e] and implement[] [the] firm's cultural values."⁹⁶ This is an explicit statement about the role of compliance officers in the creation of values compliance. Any resulting report from FINRA after this examination could be invaluable in showing what is actually happening in broker-dealers, particularly with respect to values, as opposed to legal, compliance.

It is also possible that evidence will eventually show that the result of dashboard compliance could be an enhancement, rather than a reduction, of values compliance. One consultant urges firms to outsource monitoring and testing to a specialized provider that can use data analytics and other technology solutions to review the information and then feed the key findings back to the firm's compliance dashboard.⁹⁷ This would have the advantage of enhancing the monitoring and testing capabilities of compliance in a given firm, but would also free up compliance officers to

93. There are useful surveys available about what compliance officers do. *See, e.g.*, N.Y. STOCK EXCH. GOVERNANCE SERVS. & SOC'Y OF CORP. COMPLIANCE & ETHICS, COMPLIANCE AND ETHICS PROGRAM ENVIRONMENT REPORT (2014) (presenting results of a survey of compliance officers).

94. *See* Daniel M. Gallagher, Comm'r, Sec. & Exch. Comm'n, Introductory Remarks at the Evolving Role of Compliance in the Securities Industry Presentation, Washington, D.C. (May 12, 2014). I discuss this issue of supervisory liability of compliance officers elsewhere. *See* Fanto, *supra* note 14, at 1121.

95. *See Establishing, Communicating and Implementing Cultural Values*, FIN. INDUSTRY REG. AUTHORITY (Feb. 2016), <http://www.finra.org/industry/establishing-communicating-and-implementing-cultural-values>.

96. *Id.*

97. *See* PRICEWATERHOUSE COOPERS, ENABLING PERFORMANCE THROUGH ADVANCED MONITORING AND TESTING A MONITORING AND TESTING SOLUTION FOR THE PHARMACEUTICAL AND LIFE SCIENCES INDUSTRY 3 (2015) (By leveraging outside expertise, companies can potentially reduce infrastructure costs, increase productivity, and/or refocus in-house resources onto mission-critical business drivers instead of required non core monitoring and testing activities.). Of course, PWC is promoting its data analytics products here.

do the more highly valued work of responding to problems and to providing advice, counseling, and strategic planning; in other words, doing values compliance. This suggests a “liberating” technology story, where a central surveillance unit (or a highly competent third party) works hand-in-hand with “on the ground” compliance officers, who can continue to “walk the halls.”⁹⁸ This is what should have happened in the *Wells Fargo* case discussed above, had the Miami branch compliance officer been more competent; the supervisory units would have alerted her to problems regarding insider trading, which she would have investigated.⁹⁹

As has probably been true in previous cases of compliance officers’ use of new technology, the outcome of the introduction of dashboard compliance will take some time to produce its results. In earlier work, I assumed that enhanced monitoring enabled by technology *clearly* posed a threat to values compliance.¹⁰⁰ My fear was that, just as compliance was rising to prominence, circumstances like technology, supervisory liability, and cost pressures on firms would push it back into an operational role. The result would be that compliance officers would assist supervisors within a central supervisory unit, but they would become increasingly remote from brokers and advisers. This would lessen or even eliminate their important role in values compliance. However, as the above discussion suggests, a different outcome may result from the current intersection of compliance and technology.

CONCLUSION

This Article serves as an introduction to this issue on the interaction between compliance and technology, just as the talk upon which it was based did for the Brooklyn Law School conference. Part I began by explaining the origin of compliance in broker-dealers and investment advisers and its important current position in those firms. It underscored how compliance officers assist the firm and its supervisors in establishing their defense to a charge of supervisory liability when a violation of the securities laws occurs. Part I then discussed why compliance officers have always been drawn to technology, particularly to keep up with the business sides of the firms they work for. Today, compliance officers in broker-dealers and investment advisers have a particular need for technological

98. See Donohue, *supra* note 25 (recommending that, as one of the ways to get comfortable about the firm, a compliance officer should “[w]alk the floor”).

99. At the conference, I discussed the alternative outcomes of “dashboard compliance” with the compliance officers and compliance advisers present. They assured me that my negative scenario of decreased employment of compliance officers and isolation of them into remote centers was unlikely to be the result of dashboards. Rather they think of the dashboard as just another “liberating” tool in the toolbox of compliance officers. They told me that my negative outcome exaggerates the cost pressures facing firms on compliance and that employment in the field remains robust.

100. See Fanto, *supra* note 14, at 1148–60.

assistance, because they must establish procedures for proper conduct of business practices and monitor compliance with them, and these practices in financial firms are using sophisticated technology. Compliance officers are just doing what they have always done by using dashboard compliance as a new model.

Part II set forth the questions inspiring the conference, chiefly, what will be the effect of the use of new technology on compliance? In particular, it asked whether dashboard compliance would be an unalloyed benefit, that is, a useful tool that would make compliance officers more productive, or have negative effects. Such possible effects include the downsizing of compliance officer positions and their movement away from the floor to remote locations, where they sit behind dashboards monitoring firm activities. Part II offered a hypothesis: that more use of dashboard compliance would increase the productivity of compliance officers, decrease their numbers, emphasize legal compliance, and diminish values compliance. Part II concluded by proposing ways of “testing” that hypothesis.

Part III considered readily available evidence supporting or refuting the hypothesis, generally from industry surveys and administrative actions. The first section observed that compliance officers are finding it necessary to use dashboard compliance, and that the SEC and FINRA are encouraging this use. Indeed, these regulators have sent their message of encouragement by providing compliance officers with examples in the regulators’ own surveillance of firms and by pointing out in administrative proceedings deficiencies in firms’ use of technology in compliance. The second section in Part III observed that, according to industry reports, dashboard compliance is making compliance officers more productive. The evidence also suggested, though weakly, that this productivity might result in a loss of compliance officer positions, as firms make investments in technology at the expense of hiring or retaining human compliance officers. Finally, the third section in Part III revealed that there was little evidence so far about a negative effect on values compliance from the use of dashboard compliance. Other outcomes are possible, such as dashboard compliance liberating compliance officers from many mundane tasks, meaning that they instead have more time for values compliance.

Compliance is being disrupted today, at least in broker-dealers and investment advisers, because of dashboard compliance. The story of compliance up to the present has been one of its gaining increasing authority and recognition among firms and regulators. By enhancing productivity, dashboard compliance can continue overall compliance along this triumphant path. However, because technology invariably shapes attitudes and conduct, it is necessary to be alert to the ways in which dashboard compliance could reinforce certain compliance tasks, such as legal compliance, and undercut others, such as values compliance. Even if

the ultimate outcome of the use of dashboard compliance is not now fully clear, compliance officers and scholars should remain alert to its possible effects to ensure that all that is valuable about compliance is maintained.