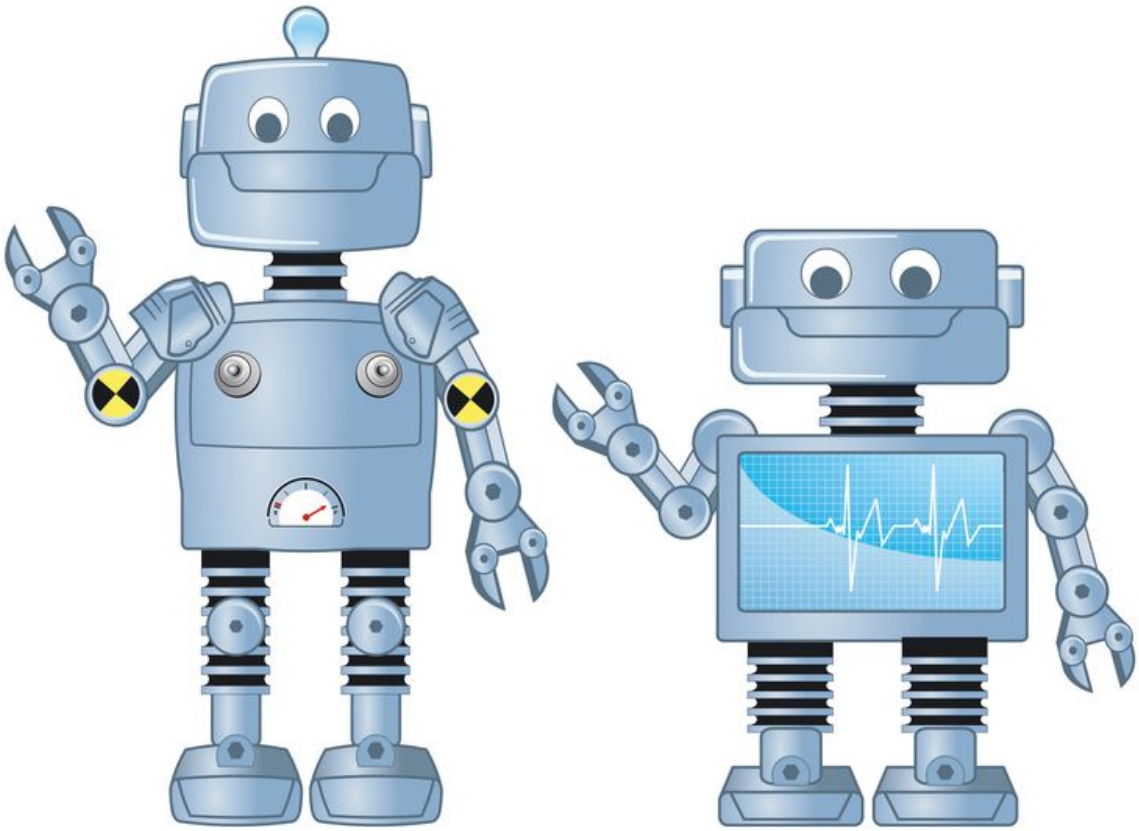
Attack of the M&A Robots:
Automating the Acquisition Process



Technology entered the M&A world as a way to make our lives easier.

The advent of computerized spreadsheets and word processing in the late 1970s and early 1980s made modeling less difficult and documents more accurate (and probably longer). Pencil and paper and literal cut-and-paste of documents became obsolescent. Database searches were slower to penetrate the market but ultimately became part of the due diligence process. New communications tools, like fax machines, added to the development of the 24 hour workday for M&A professionals.

These things seem quaint now. Even some of the companies that developed them are names out of history books. WordStar. Lotus 123. Time made them into everyday items, then passed them by. Some of their competitors thrived, while others disappeared into Wikipedia footnotes. Incremental changes, year after year, made yesterday's advanced technologies into today's

basic tools. Going back a decade before, the handheld calculator was replacing the slide rule. Now we just use our phones.

Today's M&A technology world is experiencing rapid changes that will have the same transformative effects as we saw 35 years ago when personal computers began appearing on desktops. Under the intense competitive pressures of the M&A environment, the combination of machine learning, the ability to manipulate vast databases and the omnipresence of cloud computing are combining with new insights into best practices and deal management to create new, creative approaches to streamlining the process and achieving better deal outcomes.

The world of the very near future will be divided into tech tools, little robots and big robots. Tools will perform or help humans perform discrete tasks. Little robots will automate series of discrete tasks. Big robots will organize and automate groups of little robots into a cohesive system. As the robots get bigger, they will increasingly be agnostic as to which tools or smaller robots they work with. A lawyer using one brand of hammer will be able to work with an accountant using a different brand of wrench.

The following is a brief overview of the direction the M&A ecosystem is heading.

Strategy Development

Strategy development is almost by definition a task that needs hands-on attention by important people within a buyer's or seller's organization. However, gathering the data needed to make important, big-picture decisions is increasingly an automated process. The future will involve robots that populate "best practices" templates sitting atop company and industry data to enable senior management to predict the results of alternative courses of action with more rigorous analysis than just their gut instinct, and with much less effort. Decreased costs will translate to increased market penetration of the technologies into smaller companies. There will still be a role for the ultimate decision makers.

Deal Origination

Big commercial company databases have been around for a while. They can be expensive. Newer tools harvest data from around the web ("scraping") and allow potential buyers to search for companies that meet their criteria. Free tools provide alerts when targets or buyers are mentioned, but are not always completely accurate; paid tools take alerts to the next level. EDGAR, the clunky SEC database that came online in the mid-1990s, may not be that much easier to use than in its inception, but many of the third parties that already help mine its data are becoming more sophisticated. Most potential buyers also use the Internet to search directly. The future will involve robots that do and continually update even more of the legwork automatically.

For smaller or opportunistic buyers, a daily list of possible targets generated by the robots will be of interest, but the personal and industry relationships that drive these kinds of deals will remain paramount. For larger buyers who are concerned with pipeline management, new robots will assist in the assembly, evaluation and ongoing maintenance of target lists. This will help a decision maker make the final go/no go decision, since the robots will have filtered out possibilities that are highly likely to be no go.

As the robots become more sophisticated, we will see a behavioral analysis and preliminary background checks of owners and target management becoming part of the package. The individual tools used today (which are interesting in their own right) will become better and more integrated into the process.

For smaller sellers, we will see the increased use of web-based marketplaces. These sellers often have a strong DIY inclination, which will further reduce the role of investment bankers and business brokers in the process. However, larger sellers will continue to need financial intermediaries for the foreseeable future. It is hard to imagine a board of directors deciding that it has met its fiduciary duty to maximize shareholder value by online advertising only. Also, the process is complex enough that small companies without human advice on how to run the robots are likely to achieve spectacular failures.

Evaluation

Modeling can be tedious work. Most M&A investment bankers look back on their early years doing this sort of financial analysis as important but best left in the past. Even today, a remarkable amount of this work is automated. However, many people find the process of doing and reviewing modeling to be a place for thoughtful human analysis. The future will see more comprehensive and automated tool sets, with the decision makers being able to set parameters and alternatives much more easily than with today's solutions. Advances in data visualization and the coordination of multiple data sets will open new windows into thinking about whether to push the buy button.

Sell-side: Getting a Company Ready for Sale

A good sell-side process is like getting a house ready for sale: make sure you know all the problems, fix up as many as you can using the resources and time available and put on a fresh coat of paint. As a best practice, this means due diligence like a buyer does, setting objectives and obligations with granularity and feedback and getting management ready for the process. It cannot be a fully automated process, but new approaches to due diligence (see below) and dynamic, goal-based task management systems holding management to industry-specific best practices will reduce the pain threshold. Today, smaller companies do not always follow best

practices to prepare for sale, either because they do not know what to do or they do not have the resources. If the tech vendors can find a way to reach into this market in a cost-effective way, they may find virgin territory.

Due Diligence

For our purposes, there are three main areas of due diligence: business, financial and legal. Since it is expensive and time consuming, due diligence has already been a major focus of technology development. The future will be something I would not have recognized when I first joined the workforce.

Virtual data rooms are fairly ubiquitous in the middle market and above. As the cost continues to decline and the sophistication level of counsel permeates the smaller end of the ecosystem, they will penetrate the lower end of the market further. Valuable as they are, they are tools. The robots will go further. Custom or industry-specific playbooks will harvest the data and guide human or robot reviewers to the proper level of review and reporting. AI-based systems of various sorts will gather and process more and more data, enabling higher value-added human intervention to supplant the drudgery of some of the routine document review. In the next few years, as massive databases come on line, the robots will be able to tell the human reviewers not just what the robots have found, but what is important and how it affects value.

Financial and accounting due diligence robots will interface with the same systems and other target-provided data to assemble drafts of much of the analysis needed. The full analysis will still need human intervention, but the information reaching a human will be of higher, consistent quality. As the larger databases come on line, the trends that scream “something is hidden” to a good forensic accountant will increasingly be flagged by the machines. As with the evaluation part of the process, the incorporation of new data visualization tools into the robots will transform the landscape.

Some business due diligence will always need a buyer to kick the tires. Not everything can be computerized, especially pieces requiring personal connections. For instance, anyone with M&A experience has seen new employees hired from a target fail to work out or culture change be managed so poorly that a whole acquisition fails. While machine learning may help make these human elements more effective, there will always be a place for humans if there are employees. Plus, the ability to engage in personal interactions is invaluable in the negotiation process.

However, other business due diligence will be radically transformed. Today, the Internet of Things has not been universally adopted and is largely disconnected from due diligence. Soon, though, furniture, fixtures, equipment and inventory will all become collections of data points to be manipulated, which will open up a whole new world to be evaluated. It will be as if a computerized supply chain management system were leveraged across an entire enterprise

and tied in seamlessly with the rest of the information known about a target. For example, those doing the analysis will be able to see on a single robot-assembled dashboard how inventory shortfalls connect to equipment performance and what they mean across the penalty provisions of thousands of delivery contracts – and with enough computing power, it will happen in a short time after due diligence has started, with greatly reduced transaction costs. It will then feed into an acquisition lender's system that calculates a range of terms based on quality of inventory and earnings mapped against industry averages, leaving the bankers to make the final call.

Deal Negotiation and Documentation

Tools for deal negotiation and documentation are getting much attention. Not only do they shave time and cost from an another expensive and time-consuming area of the process, they also increase the quality of the work product and reduce mistakes.

Examples of technology range from tricks embedded in the latest generation of word processing software to document management systems that track precedents with increasing sophistication to software that automatically checks for broken cross-references and definition mis-matches. Automated document assembly has started to penetrate other segments of the legal market but M&A remains a largely untapped section. In the near future, a junior lawyer should be able to fill out a questionnaire with a list of variables including the law firm on the other side of the transaction and how aggressive to be, then have the system automatically generate a credible first draft based on past experience that requires only a small amount of attorney review (the codified secret sauce will continue to be the decision on how the document is assembled). The next level beyond that will be to tie due diligence results to the draft automatically, going beyond just generating disclosure schedules to advising how aggressive to be on which provisions. The buyer's wits will be matched with technologically assisted tools on the seller's side. This will cut days off the process and result in better quality documents. Proposals for so-called "algorithmic contracts" that us algorithms to determine parties' responsibilities seem far fetched in the context of M&A, but we will see how things evolve.

Tools to automate negotiation are starting to emerge but are meeting stiff resistance in the market. Cloud platforms for shared document creation and editing are widely used in areas other than M&A but do not show much indication of market penetration for M&A applications. It is much easier to automate a process on one side of a deal than to bring technology to help with more than the mechanics of negotiation, although one can envision the adoption of machine learning systems that suggest outcomes to one side.

Closing Management

The deal will close. Efficiently. E-signing can already simplify the process. Closing management systems in use today simplify the process and generate closing binders

automatically. When the robots take charge, the process will require even less human intervention, meaning it will happen faster, at lower cost and with fewer chances of a mistake.

Post-Closing Integration and Post-Closing Adjustments

Robots will make some post-closing adjustments, like inventory adjustments, easier. IoT will play the same role it plays in due diligence. Of course, there will still be arguments that arise from competing expectations and the way contracts are drafted.

Earn-outs are more complicated. They connect to the overall approach to integrating an acquisition. Not only do the same kinds of competing expectations come into play as with inventory adjustments, the actions of the buyer really do affect whether an acquired business hits its earn-out targets. When it comes time to calculate earn-outs, a well-managed and well-documented process can reduce liability by showing that the business was not mis-managed.

A surprising number of acquisitions fail in the integration stage. Integration often fails because management takes its eye off the ball and does not keep continued focus on the reason it acquired the business. It fails because the deal team and integration team do not communicate well. It fails because the integration team is not internally cohesive enough to focus on tasks that take away from members' day jobs and because the team does not command enough authority to make non-members approach integration tasks the way that senior management wants. It fails because of vision issues and execution issues, monitoring issues and accountability issues, and, of course, lack of understanding of what's needed. While the robots can generate prompts and checklists based on general and industry-specific best practices, and can help hold human feet to the fire by tracking progress and automatically generating lists of tasks and follow-up activities, the overall direction of the integration will still be driven by the human decision makers. The goal of the humans is to manage the business toward the defined goals behind buying the business, tying integration into overall corporate strategy.

Today, integration is often slowed by technology. The process of migrating people, data and processes from the target's systems to the buyer's can be a massive undertaking across multiple dimensions of the business. While advances in artificial intelligence will enable systems with incompatible data sets to interface with each other more easily (and thus faster and at less cost), there will still be a need for higher-level human involvement. There have been some interesting developments recently in the study of rapid learning that, when combined with technological assistance, will help people transition to new ways of doing things.

Asking people to change is a necessary part of the process. Business organizations, like all groups of people, evolve behavior patterns and subcultures that in an ideal world are functional within their competitive environments. These become the unwritten rules of "how we do things around here." When businesses merge, the environment changes as these cultures are forced

to combine. Managing culture change is a key part of post-merger integration. With only a limited role for technology in defining goals, monitoring completion of progress toward them and training employees in the practicalities of new systems, culture change will remain largely a people-dominated process. The HR department will find much of its work made easier by technology, but culture change will remain a high-touch activity.

When problems arise, as they will continue to do, online dispute resolution may have a place in the distant future. However, over the next few years humans, with all their emotional decision making and reactivity to the internal needs of their own organizations, will continue to play a large role.

Deal Management

Today, deal management mostly consists of lists, phone calls, emails and chats. It's a hodgepodge of tools.

Most project management tools are designed for longer term projects rather than fast moving, dynamic projects like mergers, acquisitions and other business combinations. People do use them but not universally. There are a couple of M&A specific project management tools that to date have limited market penetration among large corporate buyers. Interestingly, some large law firms are hiring project managers to assist their attorneys in planning and resource allocation. Based on anecdotal accounts, they meet resistance for enforcing a rigidity to the process that many experienced attorneys find uncomfortable, although they are helpful in generating fee estimates. The service offerings does not really meet the attorneys' needs.

General task management and collaboration software are both widely used in business. The plethora of products on the market today attests to the demand. Whether they are adopted by people within the M&A process depends on the culture of the organization. They tend to be standalone products that are as of yet not well integrated with other tools used by the organizations.

Although M&A activities generally involve multiple departments within a buyer and multiple organizations, the systems in place now do not do well in crossing lines of authority. Learning to manage multiple silos is a required skill set.

The future will bridge project management and task management, integrating fully with collaboration tools and providing end to end visibility across for those in charge of the project, at least within their own organizations. Cross-organizational work will be simplified and better integrated, allowing people to work together more efficiently. The tools for doing so will evolve into robots that connect other robots through better software integration. In other words, big robots.

The Overall Picture

Imagine this scenario:

Management decides a company should expand through acquisitions, for a nebulous reason. Perhaps the VP of Sales started thinking about M&A after playing golf with a counterpart at another company that had recently completed a successful acquisition.

The little robots step in and map effective strategy alternatives. Management picks an approach. The robots scan publicly available data for possibilities and a high-level competitive analysis, taking a first shot at managing a deal pipeline. A human monitors the dashboard and gives a thumbs-up or thumbs-down. The next steps involve humans, too. Maybe an investment banker is brought in to make the initial contact. Alternatively, while nobody's first choice is to be a bidder in an auction, information from sell-side investment bankers populates the database, the bidding process is informed by machine learning algorithms and a human makes the decision to go forward or not.

As evaluation progresses, the role of robots increases. Data percolates through the process, enabling a faster and better decision about whether to move forward driven by the underlying strategy, determinable metrics, industry data and best practices. 3-D modeling helps humans understand all the data. The humans make the choices, including instructions to the robots on what they consider important, but as the systems become stronger the number of instructions necessary decreases.

Term sheet? It's still negotiated. But afterwards, due diligence digests and weighs an enormous amount of information in a very short time to focus the decision makers on what is important. Analysis and high value-added consultants still have their place, but the processing of rafts of data happens as a largely administrative matter. The evaluation and due diligence information are fed to financing sources, many of which process it using their own robots to provide decisions efficiently.

All available information feeds into the documentation process. Higher value-added attorneys still command their fees, but the economics of billing changes to trying to capture the value that's added rather than the hours spent. The closing and aftermath are run by the robots at the push of a button.

The integration process starts during due diligence if not beforehand. Information flows to the responsible people and robots, which together build a plan based on a fully populated database of company and deal information. After the closing, the robots help the team monitor and direct performance, then help with earnout calculation and the handoff of data from deal team to the buyer's normal operations team. Even though the complexity of the underlying systems may

increase with the overall level of the technology used within the constituent companies, a different set of robots will manage and accelerate technology and systems integration.

Through the whole process, responsible personnel at the buyer, buyer's law firm and buyer's accounting firm have access to a dashboard to manage and monitor the process. The dashboard both runs the robots and manages personnel and tasks. Each organization has deeper insights into its own operations to help it run better. Cross-organizational operations are integrated through shared relevant data and a shared view of big picture issues that is constantly updated as the process moves forward.

The result? Faster, better, less expensive acquisitions.