

## The Evolution of Advanced Sourcing

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The advent of the internet mediated reverse auction in the mid-1990s ushered in a revolution in sourcing. The most immediate changes became apparent in the scale and speed of sourcing activity. The global reach of the internet made it possible for small buying teams, even a single buyer, to create real-time competition at a distance among an increased number of potential suppliers. Negotiations which often consumed weeks or months of effort by several buyers using traditional face-to-face meetings, telephone, and mail exchanges could now be concluded in a single afternoon.

Of course, the key motivation for the adoption of reverse auctions lay in cost reduction and this is what drove their rapid adoption in the late 1990s and the early 2000s. Large firms were especially eager to achieve savings, which were widely reported to range from 10% to 20% over more traditional sourcing methods. By late 2002, a CAPS Research study found that 83% of Fortune 500 companies it surveyed were actively using reverse auctions.<sup>1</sup> But even in a sample of smaller firms of \$100 million or less in spend the ISM and Forrester research found adoption levels between 10%-20%.<sup>2</sup> Few business process innovations have inspired so rapid a diffusion.

CombineNet was founded in the heyday of the reverse auction as were numerous other companies focused on strategic sourcing and spend management. The company's roots lay more in academic circles, however, than among commercial concerns. A small team of researchers headed by the company's founder, Tuomas Sandholm, coalesced around a vision of applying advanced mathematical optimization techniques to "clearing markets," supplementing other processes of achieving the equilibrium of supply and demand. Matching buyers and sellers they thought, should be about more than price competition, although of course that played a role in the process they envisioned. But markets are not only where goods and services are bought and sold. They are places where new ideas are tested and where innovations in production and distribution are identified and shared. If these creative uses of the market could be accelerated through advanced technology, buyers, sellers, and society in general would benefit.

Although the rapid spread of reverse auctions brought increased scale and speed to the sourcing enterprise, opportunities for collaboration and in-depth communication between buyers and suppliers were often sacrificed. In the spoken and written communications surrounding more traditional sourcing processes, suppliers came to understand buyers' needs in greater depth and they enjoyed greater freedom to acquaint their customers with the full range of their capabilities. Conversely, reverse auctions relied upon new rigors of standard specifications and rigidly controlled communication. The

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<sup>1</sup> Stewart Beall, Craig Carter, Philip L. Carter, Thomas Germer, Thomas Hendrick, Sandy Jap, Lutz Kaufmann, Debbie Macijewski, Robert Monczka, and Ken Petersen, "The Role of Reverse Auctions in Strategic Sourcing," CAPS Research, 2003.

<sup>2</sup> Beall et. al, 2003, p.35.

lotting of items to facilitate collecting supplier prices in brief intervals became the new art of strategic sourcing. Differences in suppliers' desire or ability to supply individual items were seen as secondary to orchestrating an intense price competition. And in the heat of that competition, price alone occupied center stage.

A supplier rebellion of sorts emerged alongside the growing use of reverse auctions and in some areas of their application buyers also began to experience their pitfalls. One such area was transportation where land and ocean carriers were sometimes forced to choose between bidding on unfamiliar lots of lanes and abstaining from the competition altogether. Carriers soon learned that in their desire to win business, they had to gamble on entering bids for transportation services about which they were uncertain or ill-equipped to provide. Others, recognizing the loss of margins essential to sustaining their businesses or fearing the loss of their reputations for reliability and quality service, simply withdrew. Auction outcomes proved difficult to realize in practice as participating carriers proved incapable of satisfying terms of forced bargains and many of the most competent providers learned they could wait for these failures to occur and secure business on better terms for themselves.

To be sure, the failures of reverse auctions to secure sustainable outcomes in transportation and other areas were sometimes attributable to deficiencies in sourcing practice, not theory. As one recent survey of sourcing experts reported, the "inappropriate configuration of the auction process" poses the greatest risk in their use. In the hands of poorly trained or undisciplined buyers, reverse auctions are blunt instruments which can do great damage to a firm's supply chain.<sup>3</sup> But practice aside, the price-centricity of the reverse auction process popularized in the last fifteen years limits their utility for strategic sourcing and for building robust and sustainable supply chains.

For many, these lessons came early. Even as reverse auctions gained popularity, companies found challenges in adhering to reverse auction outcomes and were forced to rethink the combinations of suppliers and the business they awarded through the auction. One Fortune 100 company which had just completed a reverse auction sought ways of incorporating practical business rules which the auction outcome neglected. Using combinatorial optimization the sourcing team disaggregated the lots from the auction, attached prices to individual items, and applied a number of stakeholder business rules to the outcome. Through this process and some related negotiation, the team able to secure 6% greater savings than that resulting from the reverse auction while identifying an award solution which they could realistically implement.

Managers of spend areas with any measure of complexity have a natural affinity to the tenets of the expressive bidding. This approach facilitates greater collaboration with the supply base in the following ways: it allows the suppliers to bid on individual items which they are best equipped to serve; it permits them to combine the individual items into lots of their choosing, not the buyer's lots, as it is they not the buyer who know best which combinations yield efficiencies and thus present savings for both parties; and it recaptures much of the richly detailed communication between buyer and supplier which reverse

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<sup>3</sup> Chaitanya Sambhara, Mark Keil, Arun Rai, and Vijay Kasi, "Buyers' Perceptions of the Risks of Internet Enabled Reverse Auctions," Proceedings of the Seventeenth Americas Conference on Information Systems, Detroit, Michigan, August 4<sup>th</sup>-7<sup>th</sup>, 2011.

auctions attenuate. For sourcing professionals who live day-to-day with their award decisions and who are acutely conscious of the mutual dependency of buyer and supplier, these are resonant themes.

The expressive approach to buyer-supplier collaboration found fertile ground at Procter and Gamble, who are one of the earliest and most faithful adherents. At P&G the pursuit of innovation is an article of faith, an inescapable element of the company's DNA. But while many companies worldwide seek to build innovation into their organization and culture through sizable investments in R&D, Procter & Gamble takes the process further through its active solicitation of innovation in its supply base. Companies with a demonstrated ability to help P&G improve its products and take advantage of technical and engineering improvements in their production and distribution are strongly favored.

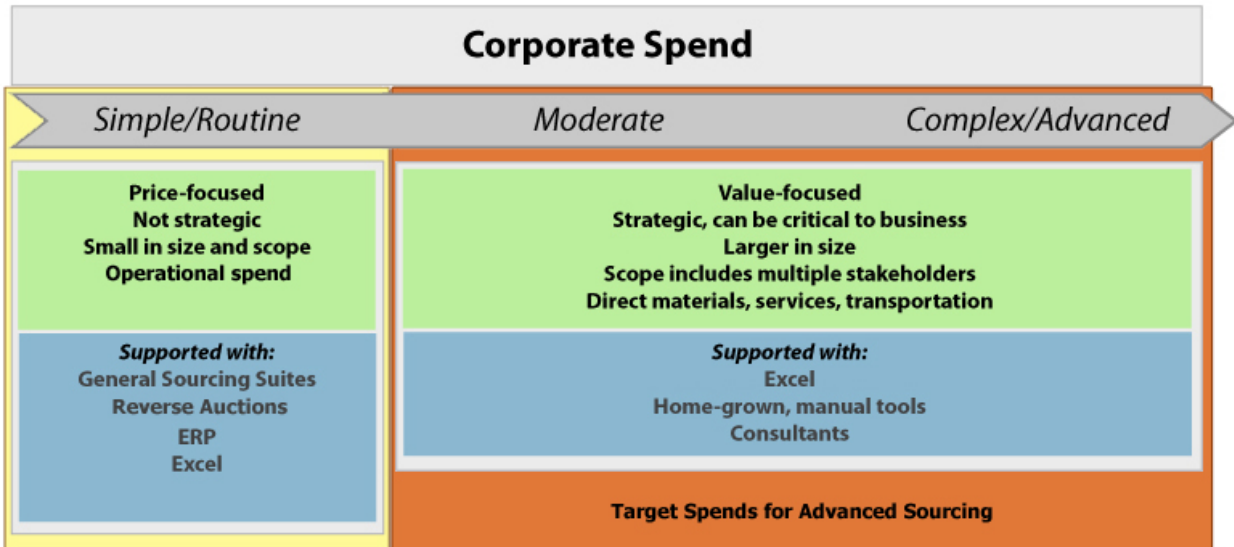
Packaging is one area where the development of new materials and production processes has brought about very significant changes in the last decade. What matters most to CPG companies are cost and function in product packaging. Does the packaging enhance the product's appeal and make it easier to use? Is it cost-effective and does it take advantage of the latest research and development? By focusing on outcomes—the “what” not the “how”—CPG companies like P&G are able to tap into the creativity of their suppliers.

For CPG companies, the cost savings from this “expressive” approach have routinely exceeded even the most optimistic expectations, with frequent cost reductions in excess of 30%. More significantly, perhaps, is that savings which result from this approach have proven continuous as long as the transfer of innovation is sustained. Unlike reverse auctions where savings have been observed to run their course in a matter of a few years, expressive bidding establishes a lasting framework for shared economic benefit among buyers and suppliers.

Because expressive bidding opens new lines of communication for suppliers, incorporating alternatives to standard specifications, packaging of items, conditional pricing based upon volume, delivery terms, contract length, and other considerations, the volume of data created in a sourcing event often exceeds what sourcing professionals can hope to analyze with conventional tools like Excel spreadsheets. Coupled with business constraints and diverse stakeholder preferences, the complexity of sourcing decisions requires more powerful tools and techniques. So, the term “advanced sourcing” refers to the combination of expressive bidding and the combinatorial optimization techniques which make expressiveness practical. Over the last decade, advanced sourcing has achieved increased recognition among experts in the field.<sup>4</sup> Increasingly, companies are advised to consider this as a supplement or alternative to the use of reverse auctions, especially in the sourcing of categories of moderate to higher degrees of complexity, as illustrated in the chart below.

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<sup>4</sup> Larry C Giunipero and Philip L. Carter, “The Role of Optimization in Strategic Sourcing,” CAPS Research, 2009.



A key obstacle to the adoption of advanced sourcing practices had been their cost and ease of use. While reverse auctions have become ubiquitous and largely commoditized, advanced sourcing has typically required the involvement of software engineers and specialized professionals from the software companies or their consulting partners. Sourcing professionals lack training in the use of optimization and have had difficulty in justifying its application to corporate executives. This is the frontier which is now being crossed by significant numbers of companies worldwide.

Improvements in productizing advanced sourcing approaches, including a focus on user-friendly interfaces and supporting integration with financial, ERP, and planning systems is increasing the adoption rate of these solutions. The elimination of software customization and resulting emancipation from managed service delivery models is making these powerful tools affordable and easy to implement in a broader range of companies. And, because of self-service, SaaS delivery of these technologies, advanced sourcing techniques can now be applied across the full range spend categories and sizes – not just for the most complex of cases.

In time, what is called advanced sourcing today will cease to be “advanced.” Sourcing professionals will use optimization without knowing it is optimization. And the notion that buyers and suppliers both benefit from collaboration and expressive communication will be embedded in the culture and practice of sourcing organizations. This will be the true measure of its success.

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