



Supporting a Lifetime of Science

LPA Celebrates 100 Years by Looking Back...

Special thanks to Bob Forte of Thermo Fisher Scientific for providing his thoughts based on almost 50 years of his industry experience.

Industry Observations

Today, it is almost inconceivable to envision a time when the laboratory instrument and equipment business and its customers could function without the internet to search for technical information, engage in social media, communicate using an emoji and text, view a YouTube “how to” video , or download a technical app, rich product specifications or configuration tools.

At a time when the SAMA organization was founded in 1918, try to imagine the world of discovery and the business of science without being wired to the grid and the void without the digital tools, we take for granted, in the form of PDAs, lap top computers, e-note books faxes, mobile phones, copiers, scanners, microprocessor driven instruments coupled to the IoT, to say nothing of the advancement in analytical technologies.

For perspective, it would be 30 more years until the development of the first commercial computer, the UNIVAC I, which used 5,000 vacuum tubes, weighed 16,000 pounds, and occupied more than 382 ft² of floor space. It would be 60 or so more years before the development of the first Apple compute.

The simple task of finding what you need to run an experiment or provide tools for basic science teaching was a significantly arduous task that forced supply planning and lab resource allocation. The world of science was so different that it was not unusual for noted scientists such as Thomas Edison, to travel daily to the local lab distribution supply warehouse, sign the visitor ledger and purchase, on the spot, what they needed for the day.

Scientific disciplines in 1918 were primarily focused around the chemical, metallurgical and classical science of biology. Scientists relied on catalog houses to discover sources, aggregate what was new and relevant for their work and, more importantly, find product that was available from local stocks to reduce supply chain lead times. Since, in 1918, most of the scientific apparatus, equipment and chemicals sold in the nascent US research disciplines were manufactured in the more mature industrial scientific markets of Europe.

Keep in mind that SAMA was founded five decades before Cohen's and Herbert Boyer's basic science discovery of recombinant DNA technology in 1973 that ignited a revolution in biology and spurred development of the biotechnology industry. (1)

The advent of World Wars I and II strained supply chain lines from Europe to the US. The majority of these imported scientific products came from Germany and to a lesser extent the UK and consisted of early analytical instruments, apparatus, optical glass, filter paper and chemicals. The inability to bring needed scientific equipment from Europe fostered the emergence of US based lab equipment and chemical manufacturing businesses that flourished in the early 40-50's.

Life in the Lab Circa 1918

Scientists sought the latest scientific distributor catalogs which, circa 1918, consisted of wood-cut line images of relatively crude electromechanical apparatus primarily powered by steam, natural gas, gasoline or manually, and often absent of any analog readout, although the industry, at this time, witnessed the evolution of the evolving electrical appliance.

One could get a simple Leeds and Northrup potentiometer with the added feature of measuring PH, but this was still almost 15 years prior to the introduction of the Beckman Model G acidimeter, soon, thereafter in 1936, called the Model G pH meter.

With no other easy way to find product specifications, scientists anxiously anticipated the arrival of each catalog edition, which aggregated new tools from global sources to accelerate the discovery and teaching process.

No plastic disposables or sterile product packaging existed. Think about research without sterile or disposable common lab essentials i.e. petri dishes, pipettes, flasks, blood collection tubes, but there were beakers of all compositions including Pyrex glass, aluminum, copper, Monel metal, vitreous enamel and Bakelite.

For common arithmetic lab calculations, in 1918, the state of the art clunky mechanical calculator and a slide ruler for higher level math calculations was the best a scientist could do, absent the discovery of transistors and availability of electronic calculators 35 years later.

The Business of Science

Internal office communications, procedures, protocols and reports were replicated by mimeograph machines (refined by Thomas Edison in 1875 and commercialized by AB Dick ten years later), and spirit duplicators in 1923 (also referred to as a Ditto machine in North America) with dizzying and pungent chemical vapors before the advent of copiers or faxes.

Industry commercial teams were almost exclusively male, dressed to the nines with suit and tie and never visited a customer without the appropriate hat; a tradition that persisted until the early 60's.

Mechanically typed contracts, scientific papers or analytical report preparation using manual typewriters was slow and it was painful to correct errors. White out correction fluids did not arrive until 1956 and correction tape 30 years later. Word processors and automatic repagination capability did not appear until about 1960, which eliminated massive document rework.

On the supply side, low barriers to entry created opportunities for entrepreneurial local distribution sources with access to national brands. These startups proliferated outside the plant gates and academic research centers with initially undifferentiated business models, save 24/7 delivery and relationship selling that spawned a distribution industry.

Fair Trade Price Laws (Resale Price Maintenance) which prohibited dealers, in most states, from discounting manufacturer products, i.e. balances, glassware, chemicals was reversed by the Consumer Protection Act of 1975, but left a legacy of indelible distribution business practices like free freight and highly discounted non-branded product categories which still exists 40 years later.

Internal lab and company pricing transparency migrated from last price paid hand written on a 3 X 5 file card to broad pricing comparisons via the web or enterprise eProcurement system.

Independent manufacturer brands flourished until the mid-eighties when regulatory compliance costs, business process re-engineering, and IT/mainframe investments, in the face of customer cost pressures accelerated the consolidation of the industry into what is now a handful of global manufactures and channel businesses.

The Lonely Sales Rep

In the daily course of business, sales reps needed to park their non-air-conditioned cars to find a pay phone (tough in a major metro area), have sufficient change to complete the call (no credit cards yet) and place an order or pick up a customer message recorded by an office assistant on a pink memo pad. (Ideal for closing out the work week, once the pink memo slips were addressed). Today, clearly, all of which has been replaced by real time digital engagement using email, text messages, images, or voice (but no hope of ever closing out the business week).

Car trunks filled with torn, tattered, and often outdated and sometimes grease marked company literature, wedged underneath the spare tire, have been replaced by digital presentations on a PDA or a forwarded YouTube link.

Stacks of customer presentation overheads prepared on plastic sheets in cardboard frames could only be deployed with the help of an overweight, unsightly projector that always had a burned out bulb or melted the sheets from intense heat at the moment of presentation truth.

The Internet Era Circa 2000+

In the early days of the industry, it was impossible to anticipate that decades of IP related to catalog layout, production processes and exhaustive technical written product copy were made obsolete almost overnight by digital content, images and the web. The internet created the disintermediation of channel product knowledge and specifications from product sourcing and consumer supplier loyalty and has created the opportunity to build brand equity through ubiquitous virtual customer reach and real-time peer review, in years, rather than decades.

Technology has opened the flood gates to new virtual business entities. There are significantly lower barriers to entry. This phenomenon is facilitated by the ease of aggregating and creating product content, coupled with the proliferation of off-brands, often from dubious global sources with questionable product warranties. Based on the current trajectory, does the customer web searching and sourcing journey ultimately morph into a flea market experience for all science related essential tools?

Sources:

1. <http://bancroft.berkeley.edu/Exhibits/Biotech/25.html>

Find out more about the history of the LPA at www.lpanet.org/history.