

Company	WR Communications
Product Name	WR1000/ WR4000
Product Type	2-way "Handy Talky" Radio Transceiver
<p>Western Radio Communications (WR) was a small radio manufacturing company in Vancouver, BC. WR provided a range of radio products, both infrastructure and mobile, for public safety and commercial users. Their largest customer was Alberta Government Telephone (AGT) to whom they supplied MTS UHF mobile radios and base stations – these products provided a telephone interconnect to land mobile radio users (before cell phones were invented).</p> <p>The WR1000 and WR4000 products were two-way radios which WR was importing and “brand labeling” from General Radio in Japan. The competition was primarily the Motorola HT series of crystal-based VHF and UHF transceivers.</p> <p>This was a technical product management, project management and product marketing role. Included responsibility for development of all sales collateral and “cut sheet” design, type approval applications, trade show technical support and responses for information. Required working closely with the Japanese supplier and development of the technical product roadmap as well.</p>	

Company	MDI/Motorola
Product Name	TaxiPAK
Product Type	Taxi Fleet Dispatch System
<p>Mobile Data International (MDI) was in the business of creating the wireless data market globally. Through the early 1980s MDI's primary competition was Motorola who, in 1988, purchased the company and all of its assets (including me).</p> <p>This role was as a senior project manager on a very large taxi dispatch project which had been sold in 1988 by MDI and which was to be delivered after MDI had been absorbed into the Motorola organization. The system was to be installed in Stockholm, Sweden.</p> <p>Fulfilled the role of product manager (voice of the customer) for the vehicle equipment (a mobile radio, an intelligent taxi meter and a mobile data terminal) and for the dispatch center computer software. Also served as project manager for the design and deployment of the radio infrastructure (there was an excellent project manager on-site managing subcontractors and responsible for the in-vehicle installations). This was one of the first implementations of a 1600+ vehicle taxi system in the world, and we had to develop performance simulation tools for message loading of the communication subsystem and for loading of the computing application. During implementation, system stability and reliability were key challenges – at one point dispatch computing hardware had to be upgraded to allow a multi-threading processor architecture to achieve the desired performance. With in-vehicle equipment, there was an added hurdle of having to be TUV certified, including software functionality in the “intelligent” taxi meter which allowed special “bar coded” ID cards from the public health authority to be used. Since this project evolved over a 2 year span there was a need for flexibility between the roles of project and product management. The core product was being utilized on 2 other very large taxi system projects in France and Finland. Since the implementation of these systems resulted in a profound change to the way business was done at these companies, a deep understanding of change management processes was required along with generous helpings of customer empathy.</p>	

Company	Motorola
Product Name	Utility Management System (UMS)

Product Type	Cable, Gas & Electric Utility Workforce Management and Dispatch System
<p>Motorola was in the software business for a while, providing entire systems with mobile data terminals, radio infrastructure and work force management application software. Their primary business area was with cable, gas and electric utility companies to provide enhanced capability with existing customer service systems. This was a complex product line and was comprised of equipment from other vendors as well. This was developed over a period of 3 – 5 years and was eventually spun off to another company (Mobile Data Systems Inc, currently owned by Ventyx).</p> <p>The role at Motorola entailed product management, project management and department management. There were 10 – 12 cable, gas and electric utilities in Canada and the US which were customers. On the technical side, there was a requirement to understand how the existing IBM or Honeywell computing systems were architected and how service work orders progressed through their various stages. With respect to safety it was essential to understand what was required for mobile and portable products to meet Factory Mutual test requirements. A whole new science was invented around data compression and transfer efficiency to allow reliable operation of the network, while allowing field service personnel to provide a rich customer experience.</p>	

Company	Motorola
Product Name	DataTAC™ and CDPD
Product Type	Public Wireless Data Networks
<p>In the 1990s Motorola developed product to compete with Ericsson’s Mobitex offering – the DataTAC™ public wireless data networks and Cellular Digital Packet Data (CDPD). DataTAC was implemented in a number of countries including in the continental US (ARDIS), Canada (Bell ARDIS), and other sites in Hong Kong, Malaysia, Thailand, Australia, UK, Kuwait and Germany. CDPD infrastructure was a “pre-digital” wireless data service offered by the incumbent cellular carriers and was a data overlay on the existing AMPS cell phone system. Data rates were 9,600 bps and 19.2 kbps and were “connectionless” packet-based (bear in mind that the initial data offering on GSM systems was 9,600 bps through a “dial-up” modem type of circuit connection) allowing for IP protocols to be used - even though they could be painfully slow, they did work.</p> <p>This product management role was closer to a system release management role – we needed to ensure that new features in one system component were supported at a system level by other components and subscriber devices, and that there was no way that activity from a subscriber device could cause the network to crash. One of the characteristics of the Motorola protocol which distinguished it from both Mobitex and CDPD is that Motorola licensed access to the protocol specifications (it was not an “open” protocol). Also, Motorola was a manufacturer of devices as well as infrastructure which meant that they competed with other subscriber device manufacturers. Motorola had to develop and implementation of an “RFC-like” process for managing changes to the DataTAC protocol (RDLAP) which prevented Motorola from taking unfair advantage of being both a subscriber device maker and exclusive infrastructure supplier. This had some advantages, in that protocol changes could be put through more quickly than with other public protocols. The other obvious advantage with having a homogeneous Motorola infrastructure was that everything worked – there were few problems with system integration which made their way into a release in the field. The obvious disadvantage was that Motorola was the sole supplier and could (actually did) unilaterally determine when the product should be end-of-life. Motorola initiated the creation of a customer organization (the worldwide data network operators group, or WWDNOG), which was a great forum for collecting and vetting product requirements – including things like time lines for last-time purchase of products.</p>	

Company	IVL Audio
Product Name	Disney Princess Karaoke Player
Product Type	Consumer Electronics
<p>IVL Audio at one time was in the consumer electronics business, designing and manufacturing handheld MIDI-based karaoke players. The uniqueness of the product line with respect to licensed content and audio performance was enhanced by IVL’s “On Key™” technology which allowed even the tone-deaf to sing in tune with their favorite songs.</p> <p>This role at IVL was as a Senior Project Manager, however it was primarily product management with a “hard” delivery time line dictated by the Christmas season (product needed to be rolling onto store shelves by mid-November at the latest). The concept and design were developed in the March/April time frame and (in the case of the Disney product) a professional industrial design partner (Frog Design) was brought in to provide the look and feel of the player. Surfaces were approved, and a stereolithographic (SLA) model of the product was created all in parallel with getting a contract manufacturer in sync and putting together a pre-production “mock-up” to complete radiated emission testing. Finalizing the bill-of-materials and working with contract manufacturers to ensure that there were no inaccuracies in parts inventory accruals – then ensuring that when shipments were made, confirm that the letters of credit were air-tight so that there was no risk of payment being delayed. Complicated by the fact that the content (licensed MIDI files of songs) needed to be finalized, approved and made available to the contract manufacturer ahead of time. Also complicated by a late change request from the client to etch the tooling to provide a satin finish on the plastic surfaces.</p> <p>On a personal note this particular product had great appeal (as a musician), and for the first time in my family could see the results of the 60 hour weeks I had always worked. Of course there was a handheld karaoke player under our tree at Christmas, which was nice. The Disney Princess Karaoke Player won the Oppenheim Toy Portfolio Platinum Award 2004 – also very nice.</p>	