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*So who is this Dave guy and why should you give him money?*

**Some highlights from the official personal resume, here's the story:**

- Attended Boy's Technical High School 1969-1972 receiving a diploma in "Technical Electronics".
- Attended Milwaukee School of Engineering 1972-1976 – AAS Electronics Communications Engineering Technology, left prior to completing BS Electrical Engineering Technology.
- Worked at Eder Industries 1976-1981 as Project Engineer performing just about all possible duties in the design of a complex medical laboratory instrument including everything from circuit design to developing assembly and test procedures, setting up an assembly line, and even field service work.
- Worked at Marquette Electronics Inc 1981-1993 as Printed Circuit Board Designer, Senior Design Specialist, PCB Design Supervisor, Computer Graphics Specialist, Senior Research Engineer – basically did everything related to PC board design, CAD system administration and use (including custom programming and user training), and operated as a link and liaison from R&D to the real world of manufacturing which included creating custom software to interface PCB CAD data to the PCB assembly and test equipment. Also setup and administered a departmental computer network for the R&D group.
- Worked at ELPASO Inc 1993-1995 as Director of Technical Services – ELPASO was a dealer of CAD software (PCAD) and design services – sold and supported software and hardware, did customer training, handled business database and graphics design and administration.
- Worked at Eaton Corp Research & Development 1995-2001 as ECAD System Administrator/Product Designer – everything related to the operation and use of ECAD tools (including custom programming and user training) as well as a custom computer mini network for the corporate R&D department. Also did internal web site development.
- Since 2001 has operated as an independent Printed Circuit Board Designer/Engineering Services Consultant
- In 2002 worked on developing a RF location device with a start-up company
- Has lectured to classes at Marquette University, and Waukesha County Technical College. Has also been a judge for the Southeastern Wisconsin Regional Science Fair and the Milwaukee Area Skill Olympics
- Presented to various CAD user groups at the local and national level. Presented at the National Computer Graphics Conference and published in its proceedings (and reviewed in the "CAD Report")
- Licensed Extra Class Radio Amateur (WB9BWP) since 1969

**CAD system experience (including purchasing decisions for many of these):**

1981-1983 Gerber PC-800 PCB digitizing system and Model 41 Vector Photoplotter  
1983-1986 ComputerVision CADD5 4X system for PCB and mechanical design (turnkey hardware and software)  
1986 Personal Engineer by ComputerVision schematic capture software (DOS)  
1986-present AutoCAD and AutoCAD LT mechanical design/drafting software (also used for some RF PCB design)  
1986-1997 PCAD (DOS) ECAD software  
1986, 1993 Phase Three Logic schematic capture software  
1987 Schema (DOS) schematic capture software  
1987 OrCad (DOS) schematic capture software  
1995-1998 ViewDraw by Viewlogic schematic capture software  
1997 Microsim Schematic schematic capture software for use with PSpice analog simulation software  
1996-1998 PADS PowerPcb PCB layout software  
1998-2006 OrCad Capture and Capture CIS schematic capture software  
1999-2006 OrCad Layout PCB layout software  
2001 Cadence Concept schematic capture software and Cadence Allegro PCB layout software  
2002 Multisim by Electronic Workbench schematic capture software  
2004 Autotrax and PCAD 2001  
2006 Mentor Graphics Design Capture and Expedition PCB Layout  
2008 Altium Designer

*OK, so what does Dave do for money?*

1. The easiest to describe is PC board design. Board design can be accomplished from customer supplied CAD schematics (OrCad or Altium Designer) or paper. With paper, a CAD schematic will be created. If the circuit and packaging design is complete and a board needs to be designed, a set price quote will be delivered. For a not-quite-ready circuit or package design (or an evolutionary design), work will be billed at an hourly rate.

What kinds of boards has he done? The first board done professionally (not counting any hobby stuff) was in the fall of 1976. The last was just a few weeks ago. Sizes have ranged from less than 1" square to 12" x 18". Boards have been single sided up through 10 layers. They have been all through-hole, all surface mount and every possible mix of both. Components have been on one side and both sides. There have been 100 MHz clocks, microvolt level analog signals, multi-amp current supplies (sometimes on the same board). There have been 50W 900MHz transmitter boards, circuit breaker control boards with 750V between traces, ECL motherboards, multi-processor DSP boards, real-time video boards, connector and LED boards. There have also been flex-circuits and ceramic hybrids. Some designs needed to be FCC, UL, and others approved. Consideration is always given to EMC issues (most designs never need more than 2 passes to be compliant). In fact, if the circuit is good, board designs will almost always work 100% on the first pass (not 3 or 4 like some other designers). To get there means Dave is not cheap, and he can be kind of a pain asking a lot of questions about the design and what the customer wants. That way, the customer really does get what they want – a working PCB. By the way, no files go to a board shop until the design engineer approves the layout. Period!

2. "Engineering Services" consulting. What this means is consulting with a customer on their engineering services operation. This includes PCB and mechanical design, drafting, CAD tools (selection and implementation), PCB design training, engineering documentation functions, implementation of an "Engineering Component Information Database" (ask what this is). Training and assistance is also available for using various ECAD software. Documentation and design notes are also available. Work is billed at an hourly rate. Documentation is quoted on a custom basis.

3. Are you a start-up company who needs to get a part numbering and tracking system in place? Everyone has ideas of how to set up a part numbering system. Well so does Dave. Just ask. Also available is the "Engineering Component Information Database" mentioned above as well integration with other software and databases for engineering component tracking and purchasing. Work is billed at an hourly rate. Documentation is quoted on a custom basis.

4. Does your engineering department have computer/network/software problems? Does your engineering department's computer resources need updating or just refining? Does your engineering staff need some help with their use of engineering and office type software? Dave has been a network administrator, software trainer, software developer, software integrator. He can work with your IT people, or even as a temporary IT person. Besides the previously mentioned CAD software, Dave has experience with a wide range of office and engineering software (and even a little Unix) and hardware (and even a little Sun). He has built a number of systems from scratch. Work is billed at an hourly rate. Documentation is quoted on a custom basis.

4. What about design beyond "just a PC board". Dave has an affiliation with a group of design professionals who can handle your needs from a one problem consultation to total product design. This includes analog (low level through high power), digital, RF, DSP, embedded systems, mechanical and package design. In short anything related to an electronic product design. We are not the cheapest up front cost, but we offer the best in performance and can actually be more economical throughout the design to manufacture process.

Does this information peak your interest? Do you have any questions? Dave is very willing to discuss any of these subjects and many more, just ask (call, email, mail, meet).

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