

Market Analysis –Digital Design

Key Data Points

Current Market Size	44,600
Change from Previous Year	↑5%
Leading Publisher	Pearson
Market Leading Text	Mano/Kime 4/e, '08 (Pearson)

Market Background/Trends

At most schools, this is the second course an EE major will take, after circuits. At some schools, computer science students are also required to take the course, and about 20% of the time the course is taught out of the computer science department. However, most CS students take a computer organization course, which gives them modest exposure to digital design concepts.

Pearson has been the dominant publisher since the mid '80s with its various versions of Morris Mano's student friendly textbooks. Wakerly was added in the early 90's, along with Katz (via acquisition, from Addison-Wesley). But in the past 3 years, there has literally been nothing new for the publisher; no new launches, no revisions. It is no surprise, therefore, that the #1 has given up ~10% market share since 2008

McGraw-Hill made a push into the market with Brown/Vranesic in 2000, followed by the less successful Marcovitz in 2002 and Givone in 2003. Also in 2003, McGraw-Hill published a Verilog version of Brown/Vranesic. McGraw-Hill has been somewhat active over the past 3 years with new editions of Brown (VHDL) in 2009 and Marcovitz in 2010. But it has been the Verilog version of Brown (2008) that has driven growth for this publisher, signifying the increasing popularity of Verilog over VHDL for this market.

Cengage Engineering's presence in the market dates back to the first days of Mano, when Roth was published by PWS Kent. Roth and Mano both offered 'plug-and-chug' approaches for the mainstream market, while Wakerly, Katz and Brown/Vranesic provided a more 'real-world' orientation. Cengage had the market leader for the first time (ever?) for the Spring 2011 semester with a new edition of Roth in 2010; however, the publisher has declined in market share, off about 2% over the past 3 years.

Wiley, which had not played in this market since the mid '80s (Hill/Peterson), launched Vahid in a preview edition in 2006. The publisher has been hammering away at the market with this new player, more than doubling its market share since 2008 and rising to #6 in the market (of 19 titles we've tracked) with a new edition in 2011. Wiley has outperformed the market with this effort since 2008.

Elsevier (Morgan-Kaufmann) has been the most recent publisher to attempt this market, with mixed results. Pedroni (2008) has not a single adoption tracked by TWM, while Ashenden (also 2008) VHDL and Verilog versions have had annual numbers of a few hundred copies. Harris (2007) has been there most successful launch, aimed at the CS/Computer Engineering portion of the market and targeting Mano/Kime. The book has slowly increased market share since its publication in 2007 but sits at the low end of the 'haves' in this market..

Looking Ahead

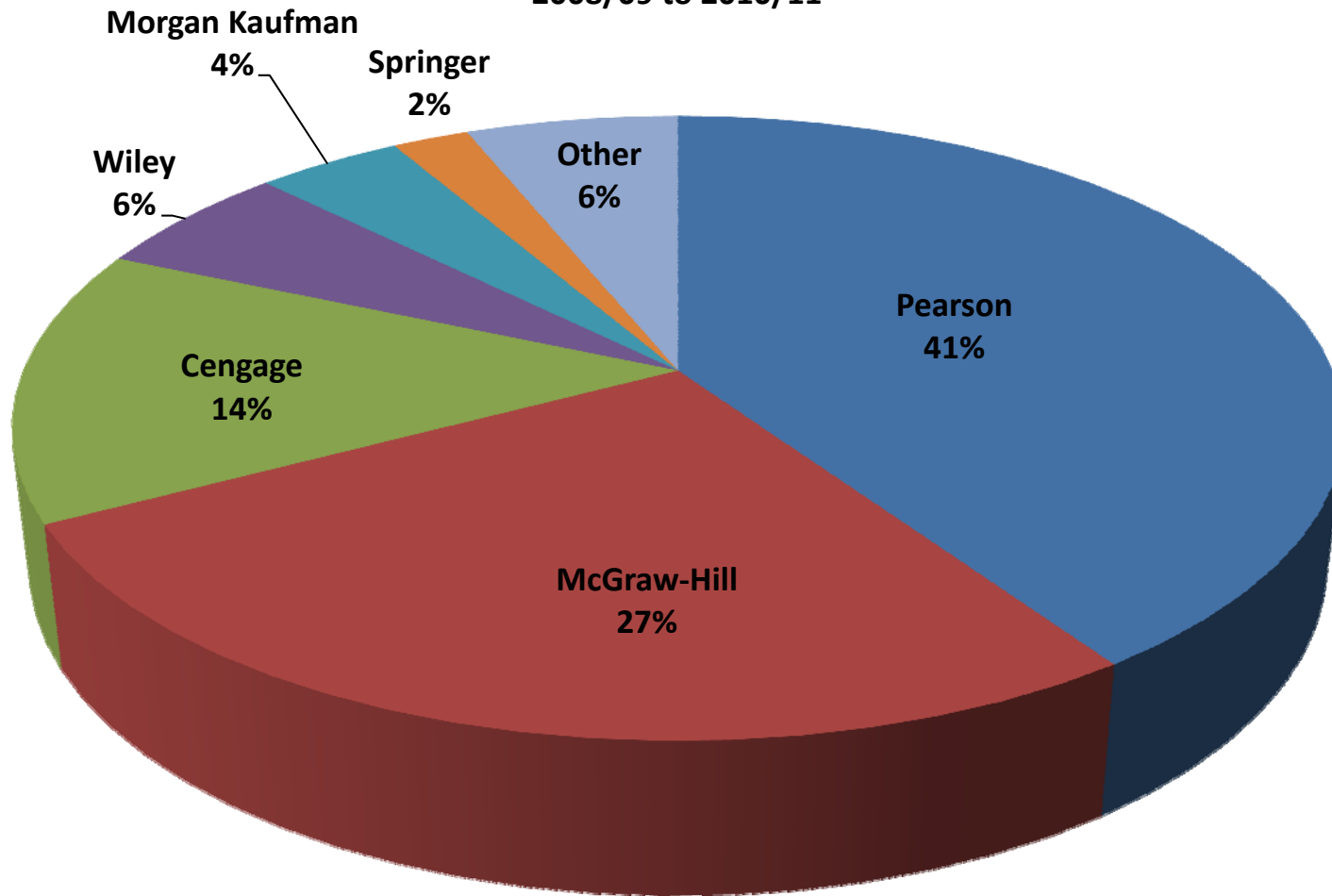
Prentice Hall needs a revision in a bad way to reclaim its 10% loss over the past 3 years. Mano and Wakerly are strong enough brands to deliver gains, but the market is changing with Vahid, Brown/Vranesic and, to a less extent, Harris delivering up viable competition 'new' from 3 other publishers in the market. Any new edition is going to have to balance, if not favor, Verilog with VHDL content.

TABLE 1
Digital Design
Market Share for Publishers of Leading Textbooks
Fall 2008 to Spring 2011

Publisher	TOTALS		FALL 2008		SPRING 2009		FALL 2009		SPRING 2010		FALL 2010		SPRING 2011	
	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%
Pearson	48,112	40.4%	8,339	42.0%	9,265	46.2%	7,948	40.0%	8,135	42.7%	7,739	37.4%	6,686	34.4%
McGraw-Hill	31,904	26.8%	5,657	28.5%	4,332	21.6%	5,893	29.7%	4,642	24.4%	5,905	28.5%	5,475	28.2%
Cengage	16,938	14.2%	2,819	14.2%	3,267	16.3%	2,614	13.2%	2,890	15.2%	2,566	12.4%	2,782	14.3%
Wiley	6,995	5.9%	609	3.1%	763	3.8%	933	4.7%	1,359	7.1%	1,638	7.9%	1,693	8.7%
Morgan Kaufman	5,021	4.2%	575	2.9%	1,015	5.1%	669	3.4%	754	4.0%	834	4.0%	1,174	6.0%
Springer	2,642	2.2%	492	2.5%	211	1.1%	390	2.0%	397	2.1%	664	3.2%	488	2.5%
Other	7,334	6.2%	1,362	6.9%	1,198	6.0%	1,399	7.0%	853	4.5%	1,371	6.6%	1,151	5.9%
Total	118,946	100%	19,853	100%	20,051	100%	19,846	100%	19,030	100%	20,717	100%	19,449	100%

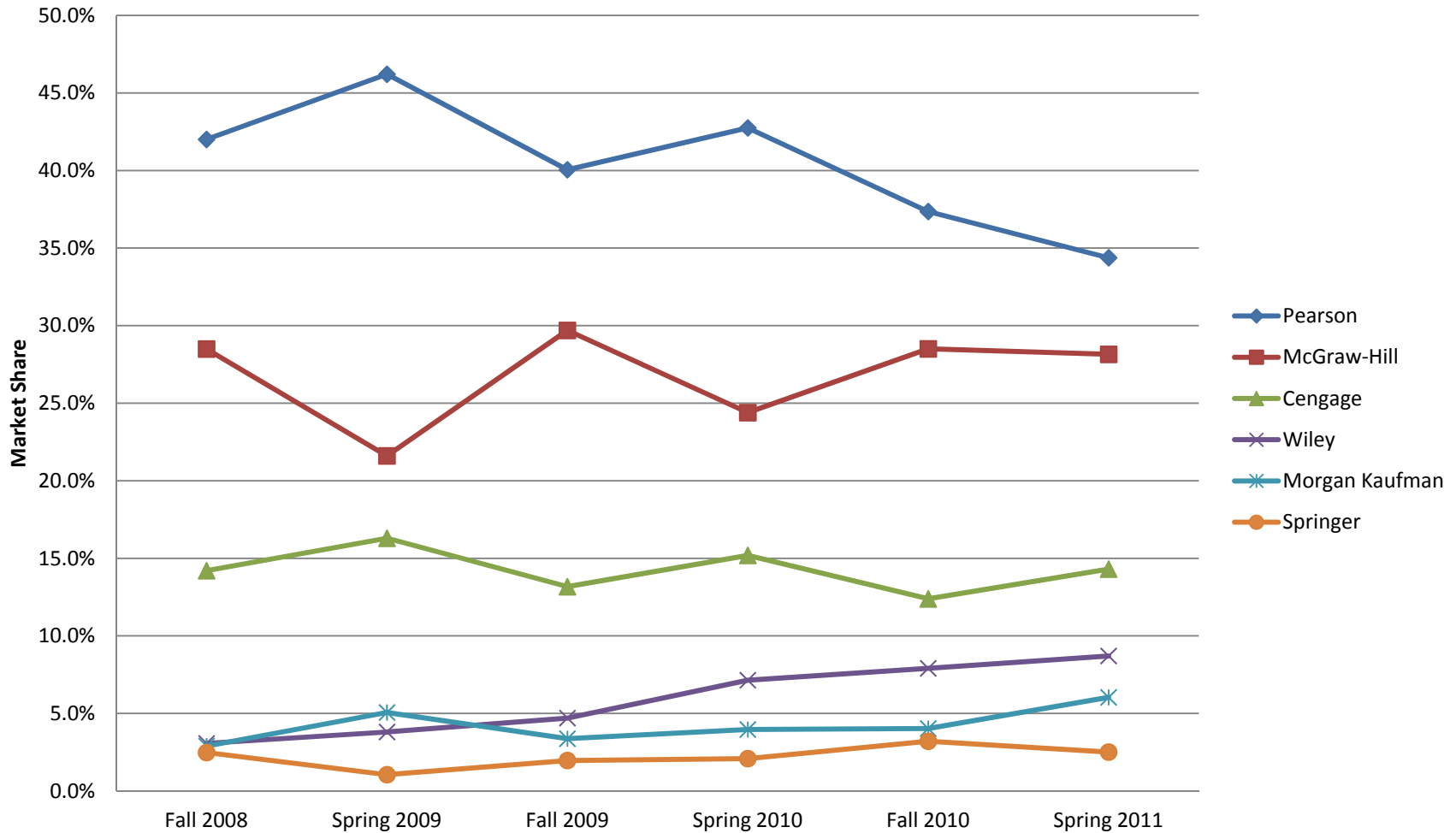
Source: TWM Research

CHART 1
Digital Design
3-Year Publisher Market Share
2008/09 to 2010/11



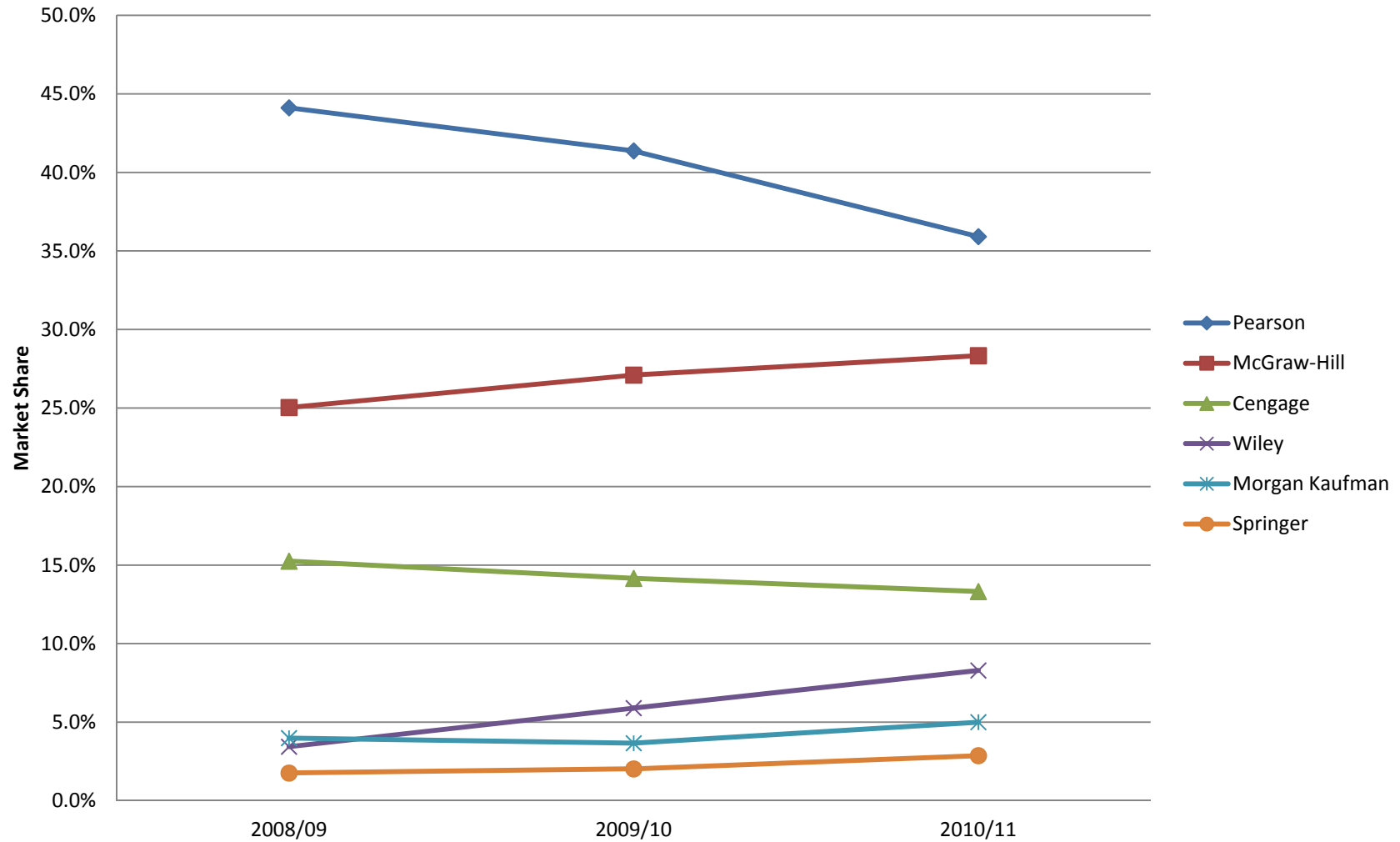
Source: TWM Research

CHART 2
Digital Design
Publisher Market Share by Semester
Fall 2008 to Spring 2011



Source: TWM Research

CHART 3
Digital Design
Annual Publisher Market Share
2008/09 TO 2010/11



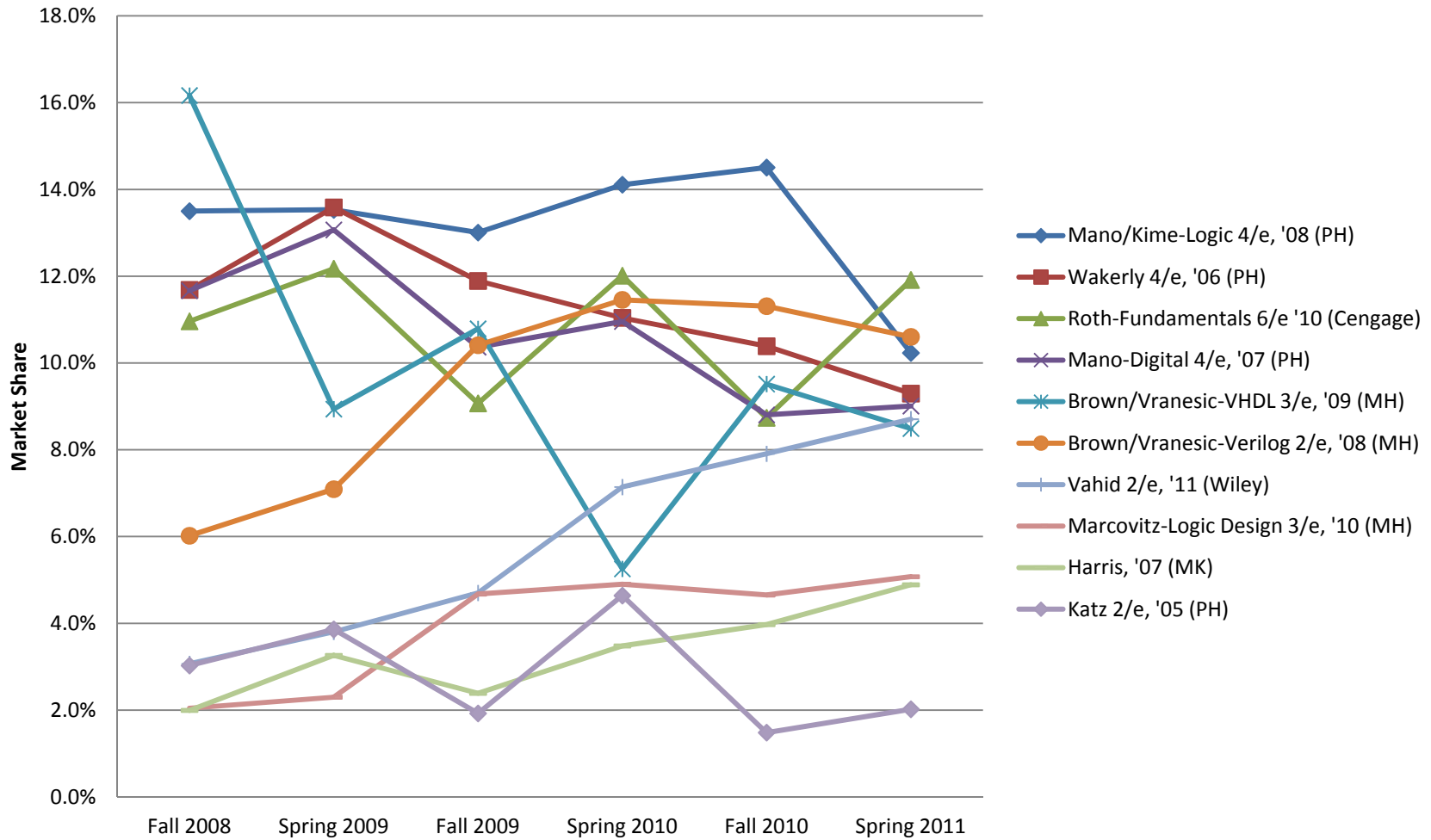
Source: TWM Research

TABLE 2
Digital Design
Enrollment and Market Share by Title
Fall 2008 to Spring 2011

Title	TOTALS		FALL 2008		SPRING 2009		FALL2009		SPRING 2010		FALL 2010		SPRING 2011	
	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%
Mano/Kime-Logic 4/e, '08 (PH)	15,654	13.2%	2,680	13.5%	2,713	13.5%	2,581	13.0%	2,685	14.1%	3,005	14.5%	1,990	10.2%
Wakerly 4/e, '06 (PH)	13,465	11.3%	2,320	11.7%	2,724	13.6%	2,360	11.9%	2,101	11.0%	2,152	10.4%	1,808	9.3%
Roth-Fundamentals 6/e '10 (Cengage)	12,830	10.8%	2,176	11.0%	2,441	12.2%	1,800	9.1%	2,286	12.0%	1,810	8.7%	2,317	11.9%
Mano-Digital 4/e, '07 (PH)	12,654	10.6%	2,316	11.7%	2,620	13.1%	2,057	10.4%	2,085	11.0%	1,824	8.8%	1,752	9.0%
Brown/Vranesic-VHDL 3/e, '09 (MH)	11,764	9.9%	3,209	16.2%	1,792	8.9%	2,141	10.8%	1,000	5.3%	1,971	9.5%	1,651	8.5%
Brown/Vranesic-Verilog 2/e, '08 (MH)	11,268	9.5%	1,195	6.0%	1,422	7.1%	2,066	10.4%	2,180	11.5%	2,343	11.3%	2,062	10.6%
Vahid 2/e, '11 (Wiley)	6,995	5.9%	609	3.1%	763	3.8%	933	4.7%	1,359	7.1%	1,638	7.9%	1,693	8.7%
Marcovitz-Logic Design 3/e, '10 (MH)	4,679	3.9%	406	2.0%	461	2.3%	928	4.7%	933	4.9%	964	4.7%	987	5.1%
Harris, '07 (MK)	3,960	3.3%	396	2.0%	654	3.3%	474	2.4%	662	3.5%	823	4.0%	951	4.9%
Katz 2/e, '05 (PH)	3,340	2.8%	601	3.0%	774	3.9%	382	1.9%	883	4.6%	307	1.5%	393	2.0%
Roth-VHDL 2/e, '08 (Cengage)	3,197	2.7%	562	2.8%	624	3.1%	562	2.8%	522	2.7%	539	2.6%	388	2.0%
Nelson, '95 (PH)	2,999	2.5%	422	2.1%	434	2.2%	568	2.9%	381	2.0%	451	2.2%	743	3.8%
Hamblen, '05 (Springer)	2,642	2.2%	492	2.5%	211	1.1%	390	2.0%	397	2.1%	664	3.2%	488	2.5%
Givone, '03 (MH)	2,563	2.2%	511	2.6%	319	1.6%	484	2.4%	387	2.0%	390	1.9%	472	2.4%
Marcovitz-Computer, '08 (MH)	1,630	1.4%	336	1.7%	338	1.7%	274	1.4%	142	0.7%	237	1.1%	303	1.6%
Hwang, '05 (Cengage)	911	0.8%	81	0.4%	202	1.0%	252	1.3%	82	0.4%	217	1.0%	77	0.4%
Ashenden-VHDL, '08 (MK)	773	0.6%	164	0.8%	238	1.2%	176	0.9%	76	0.4%	11	0.1%	108	0.6%
Dally 2/e, '08 (Cambridge)	338	0.3%	0	0.0%	71	0.4%	0	0.0%	146	0.8%	0	0.0%	121	0.6%
Ashenden-Verilog, '08 (MK)	288	0.2%	15	0.1%	123	0.6%	19	0.1%	16	0.1%	0	0.0%	115	0.6%
Other	6,996	5.9%	1,362	6.9%	1,127	5.6%	1,399	7.0%	707	3.7%	1,371	6.6%	1,030	5.3%
Totals	118,946	100%	19,853	100%	20,051	93%	19,846	100%	19,030	100%	20,717	93%	19,449	100%

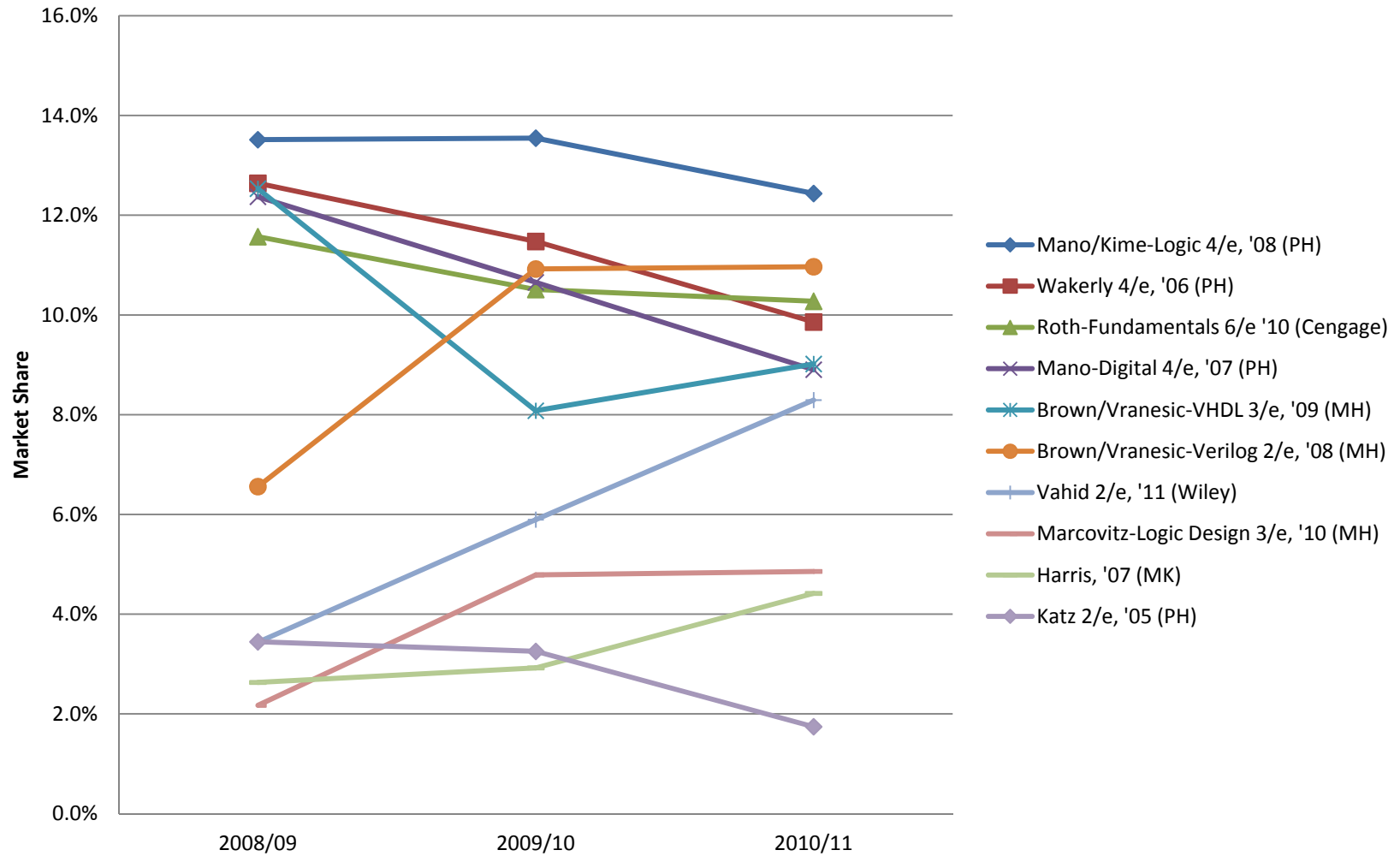
Source: TWM Research

CHART 4
Digital Design
Market Share for Leading Textbooks by Semester
Fall 2008 to Spring 2011



Source: TWM Research

CHART 5
Digital Design
Annual Market Share for Leading Textbooks
2008/09 to 2010/11



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