FLAVOR OF THE DAY?

Design/Management

Survey Results

Menu

STUDIOS
wals

FLAVOR of the DAY?

Design/Management,

"managing as designing" and "design thinking"
are the flavors of the day in business.

So why are they relatively unheard of in the AEC world?

They aren't new concepts. The Design Management Institute[1] has been around since 1975 formalizing centuries of previous achievements. Programs for the management of design exist at such diverse institutions as Illinois Institute of Technology, Pratt Institute and The Mayo Clinic. IDEO has published books on the subject. The Weatherhead School of Management at Case Western teamed up with architect Frank Gehry after the design of their new building to author a compilation of articles on design and management. Firms have written volumes on the contribution that experience[2] makes toward the bottom line.

Blog posts pop up daily with perspectives on what business leaders can learn from designers and industries have been built around educating designers to be managers.

Is there value in managers learning from designers and designers learning from managers? Can cross-pollination really create advantage through an expanded skill set? Incorporating design and using it effectively in our strategic arsenal – is it really as simple as learning the language of design? Or implementing tools to enhance our design thinking? Or even changing our physical environment?

Yes.

For the purpose of this paper, ***design/management*** is defined[3] as the integration of the more instinctive process of design (planning, patterning, arranging) with the precision and control of management to effect delivery of products and services of the highest value.

[1] www.dmi.org
[2] Think along the lines of "Disney", "The Experience Economy" and "The Third Place".
[3] Per the scalability of our definition, design/management could refer to the evolution of individual products, services, experiences and even whole businesses.

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Design connotes a direct use of tools to physically define and provide answers while management most often is associated with business metrics. The word **manage** actually comes from the Latin word manus for hand. **Design/management** describes a "hands-on" process uniting doing and thinking and is therefore independent of any specific industry or job.

The Design Management Institute defines design management as the business side of design. DMI then expands the definition to "encompass the ongoing processes, business decisions, and strategies that enable innovation and create effectively designed products, services, communications, environments, and brands that enhance our quality of life and provide organizational success."

Even given the nebulous task of defining design, there is a wealth of published information on the subject. **wals communications** surveyed the AEC industry and spoke with leaders of design management programs and with people in the AEC industry to get a sense of what design/management really means and how it could affect competitive strategy.

The resulting value of **design/management** implies worth not only in a monetary sense, but also in a sociological sense. Value creation is important for clients, and for the designer/manager personally. Value brought about through design/management comes in many forms as innovation, collaboration and sustainability.

> The purpose of this paper is to examine the relationship of
> **design and management** within the AEC industry and discuss
> the strategic implications on both the personal and firm levels as
> they relate to competitive advantage.
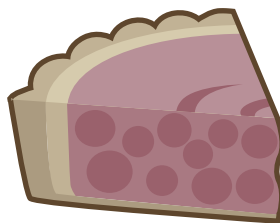
Survey Methodology

wals communications design/management survey was hosted through SurveyMonkey from 9/22/09-10/12/09. The survey was distributed via email to the then 2300 members of the Design and Construction Network[4]. Of those who received the DCN email distribution, 161 opened the email. Additional surveys were emailed to a smaller list of contacts not on the DCN. In total, 86 people responded to the survey and 74 completed the survey in its entirety.

Out of the 74 complete responses, 34 indicated a willingness to speak with **wals communications** in depth regarding *design/management.*

Respondent Demographics

Respondents come from firms of all persuasions and sizes with varying levels of revenue. Survey respondents include architects, interior designers, engineers, contractors and related professions such as furniture designers, media/technology consultants and real estate representatives. A few owners responded as well as one financial services firm. Participation was divided fairly evenly between disciplines.

Respondents

architects . . 24.7% engineers . . 22% construction firms . . 19.7% AEC consultants . . 33% interior designers . . 33%
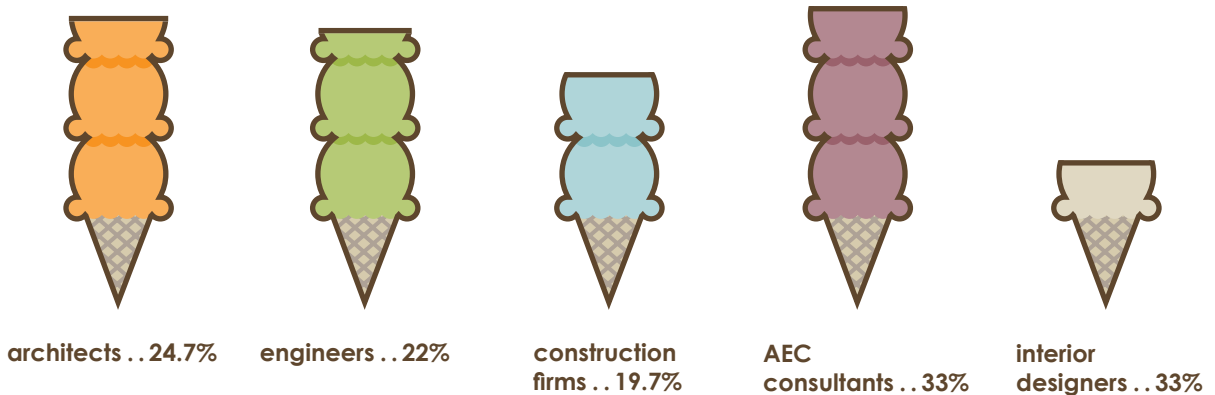
[4] www.mydcn.com
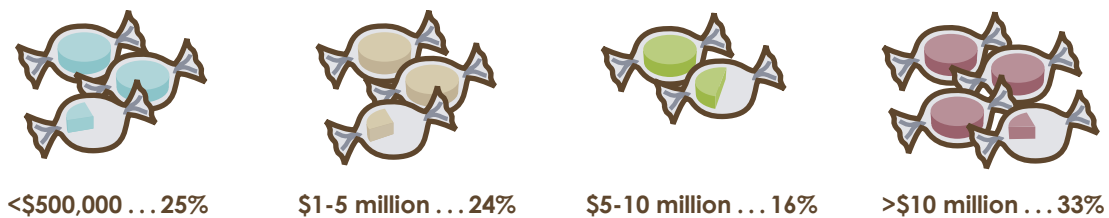
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32% of respondents come from firms with less than 10 people, only 10.5% each from firms with 11-20 people and 21-50 people. 15% work at firms with 51-100 people, 20% work at firms with 101-500 people and 11.6% have more than 500 people at their firms. Norms for firm size vary across discipline – what's large for an architectural firm may be small for the engineering firm or contractor. Given the volatile employment situation over the last few years, current entrepreneurial spirit and the high number of AEC consultants responding to the survey, the predominance of small firms is not surprising.

Firm size

<10 people .. 32% **11-20 people .. 10.5%** **21-50 people .. 10.5%** **51-100 people .. 15%** **101-500 people .. 20%** **>500 people .. 11.6%**
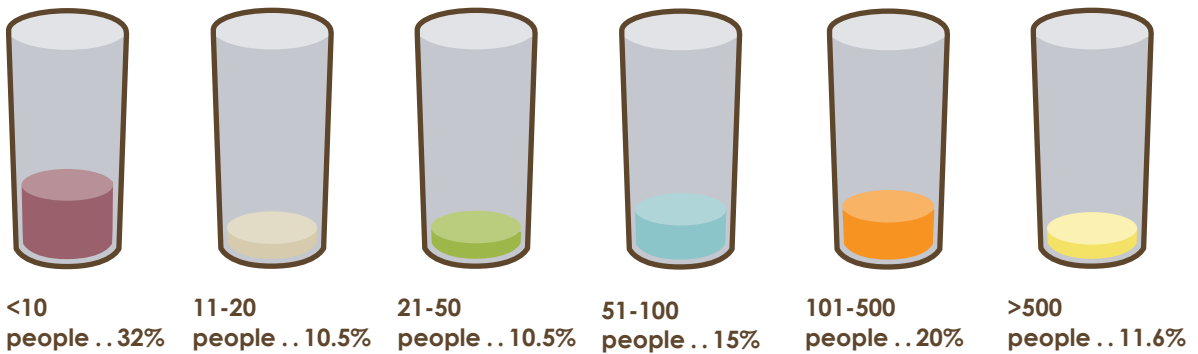
Revenue for responding firms hits the extremes with 33% earning more than $10 million a year and 25% earning less than $500,000 a year. 16% were in the $5-10 million range and 24% were in the $1-5 million range. Only 2% of responding firms have revenues within the $500,000 to $1 million range. The lack of representation in revenue in the $500,000 to $1 million range points to both the upheaval within the AEC industry over the last few years as well as the general trend toward "megafirms."

Firm earnings

<$500,000 . . . 25%   **$1-5 million . . . 24%**   **$5-10 million . . . 16%**   **>$10 million . . . 33%**

The oldest firm in our survey was founded in 1853 and the youngest few were started in 2009. The average age of the responding firms is 35 years and the year the most firms were started is 1976, indicating a depth of institutional knowledge corresponding with the experience level of the survey respondents.

Many states are represented, from Alaska to Georgia. 22% of participants are from Virginia, 16% from Maryland and 10% each from DC and Pennsylvania.

Survey Results

An astounding 70% of respondents from AEC firms have not heard of the concept of design/management. However, 63% of respondents believe their firms compete on design while 36% believe design is the foundation of their firm. Another 30% value design highly while 72% overall believe that design factors into the managerial decision making at their firms.

Numbers indicate that design is considered a competitive advantage, yet the concept of design/management remains separate from practice. This dichotomy is especially evident across disciplines with engineers and contractors at one end of the spectrum and architects and interior designers at the other end. AEC consultants strike a middle balance.

About 57% of architects and interior designers have knowledge of design/management. Knowledge is 32% among the AEC consultants but only about 20% of engineers and contractors consider themselves well-informed about design/management.

Knowledge of design/management

AEC consultants . . . 32%

architects &
interior designers . . . 57%

engineers &
contractors 20%
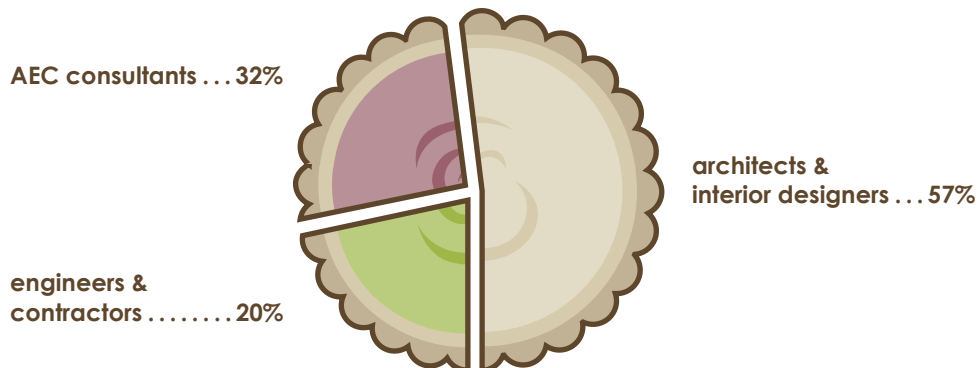
Respondent roles vary from intern to firm owner with representation from administrative, marketing and professional staff. Roughly half of respondents are firm owners or senior management while marketers and project managers make up the next largest sections.

Respondents are knowledgeable about their industries with over 86% having more than 5 years of experience. Given the volatility of the employment landscape, the survey results bear out the "mobility" trend within the AEC industry – while 72% of people have 8+ years of experience, only 32.6% have been with their respective firms for the same number of years.

Years of experience	% of Respondents
< 1 year	0.0
1-2 years	2.3
2-5 years	11.6
5-8 years	14.0
8-10 years	7.0
10+ years	65.1

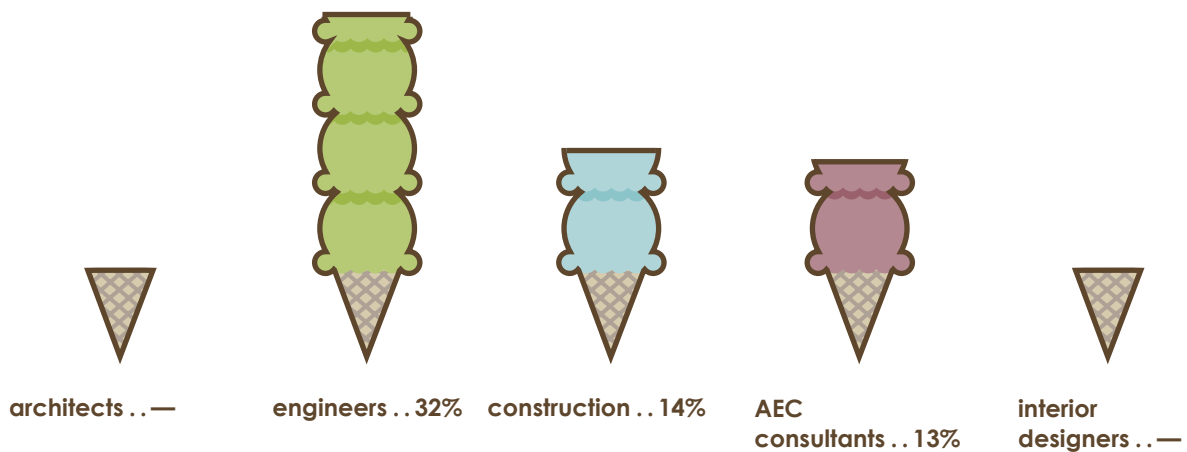| Years with firm	% of Respondents
< 1 year	14.0
1-2 years	18.6
2-5 years	23.3
5-8 years	11.6
8-10 years	9.3
10+ years	23.3

How we work

85.9% of respondents have informal office spaces and 54.1% of respondents report their firm groups people together by function (i.e., architects with architects, engineers with engineers and accountants with accountants.) Individual offices, open office areas, assigned workspaces and defined conference/meeting areas are strongly represented in the AEC work place.

Only 3.8 respondents indicated that their firms use "hot-desking" (also known as "hoteling" or floating workspace) in which a work area is assigned on a short-term/daily or per project basis. Engineers report the highest percentage of formal offices at 32%. Contractors report only 14% formal offices while architects and Interiors firms report only informal offices. 13% of AEC consultants work in a formal office environment.

Formal offices

architects . . —   engineers . . 32%   construction . . 14%   AEC
                                                                        consultants . . 13%   interior
                                                                                                designers . . —

Most respondents (81%) have desktop computers with 46.9% being laptops. 60% have drafting tables at their desks although the computer takes precedence over drafting table usage on a daily basis. Whether that's a function of using the table for drawing or simply for layout space remains to be seen, but a surprising percentage of drafting tables are still being used in spite of a precipitous decline in hand drafting due to the predominance of computer based drafting.

Particularly important, are the tools we choose and the way we communicate. Design/management theories highlight the critical nature of communication through such activities as modeling and sketching.

47% report email is their chosen means of communication while face-to-face conversations are predominant for 28% of responders and phone conversations are the preferred means of communication for 21%. Sketching is popular for only 4% of the participants. Not surprisingly, architects and interior designers are most likely to sketch in order to communicate. Engineers and construction people are tied at second for sketching.

These are the environments in and equipment with which 65% of respondents are working whatever hours it takes to get the job done. An additional 16% work a traditional 9-5 schedule 40 hours a week, while another 19% work 40 hours in a flexible schedule.

As far as tools to get the job done, the least familiar are "cartooning" where the project is mocked-up through small-scale drawings to approximate the final deliverable and Integrated Project Delivery (IPD), a collaborative, team-based approach to building and delivering project value. The most familiar tools are spreadsheets, Powerpoint and LEED. It is interesting to note that while knowledge of LEED is 89.7%, the actual usage of LEED in the AEC industry is 48%. Roughly half of the study participants use LEED on a regular basis (but close to 90% know what it is.)

Tool	% familiar
spreadsheets	92.3
scheduling software	61.5
CAD	70.5
sketching	60.3
charetting	42.3
BIM	38.5
3-d modeling	50.0
IPD (integrated project delivery)	20.5
design-build	71.8
LEED	89.7
powerpoint	89.7
reports (internal)	71.8
cartooning/thumbnails	30.8
multi-media	50.0

Tool	% of use
spreadsheets	81.3
scheduling software	37.3
CAD	49.3
sketching	38.7
charetting	17.3
BIM	10.7
3-d modeling	18.7
IPD (integrated project delivery)	6.7
design-build	32.0
LEED	48.0
powerpoint	58.7
reports (internal)	56.0
cartooning/thumbnails	10.7
multi-media	20.0

Study participants identified a few more tools not included in the survey list such as Adobe Creative Suite, social networking, MS Outlook and proposal-generating software. As for the referenced tools, most are computer based while only modeling, cartooning and sketching involve immediate hand-generated representations to convey concepts.

Surveying "design/management"

A full 94% of survey participants believe that there is a "design" vocabulary while 93% believe there is a vocabulary particular to "management." 55% believe that design and management vocabularies are inherently different while 18.3% disagree that the vocabularies are different. 18% more people believe that design strategy is influenced by management as opposed to management strategy being influenced by design. Feelings on "design strategy = business plan" ran from 35.7% who disagree with the statement through 30% who are neutral to 34.2% who agree.

Supplemental comments from survey participants reinforce the premier role of communication in defining the success of both the design and management functions.

Drilling down into whether specific words are considered "design," "management," both, or neither gives more insight into perceptions regarding vocabulary. In general, specific words such as "space" and "model" are considered part of the design vocabulary.

Design/Management Vocabulary

	design in %	management in %	both in %	neither in %
study	29.4	5.9	61.8	2.9
space	65.2	7.2	27.5	0.0
dialogue	2.9	20.6	75.0	1.5
tension	2.9	26.1	66.7	4.3
client	8.7	18.8	71.0	1.4
analyze	16.2	11.8	72.1	0.0
path	20.9	23.9	47.8	7.5
form	75.0	1.5	22.1	1.5
iteration	40.9	7.6	45.5	6.1
model	65.2	1.5	31.8	1.5
goal	4.5	25.4	68.7	1.5
project	14.9	10.4	74.6	0.0
recycle	17.9	13.4	58.2	10.4

No words are considered predominantly "management vocabulary", but a few, such as "dialogue", "tension", "goal" and "client" are viewed as more management-oriented than design-oriented. Most words overlap both vocabularies including "study", "path", "iteration", "project", "analyze" and "recycle".

Analysis of the survey results leads to several conclusions:
• awareness of design/management concepts is low
• the AEC industry is poised to positively embrace design/management
• communication is key, but by which tools?

Strategic differentiation, especially in a tough economy, is becoming ever more challenging given the incorporation of technology as the great equalizer and clients who increasingly view AEC services as a commodity to be bought and sold simply on cost with little regard for overall value.

By leveraging design and management skills, individuals and firms can increase the value of their work, remain viable in a highly competitive, industry and attract new employees who are being educated in design/management programs. Similarly, design/management skills make AEC practitioners valuable beyond the traditional practice areas of architecture, engineering, construction and interior design, perhaps predicting expanded roles for those professions (and professionals) as the economy takes its first few shaky steps along the road to recovery.

The education, practice and culture of design/management

So, is design/management the flavor of the day or an emerging concept?

Based on the fact that design/management is working its way into the mainstream and becoming institutionalized on college campuses around the globe, we argue that it's an idea finally coming into its own.
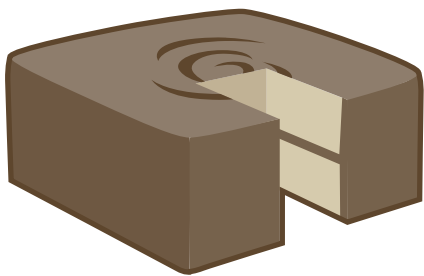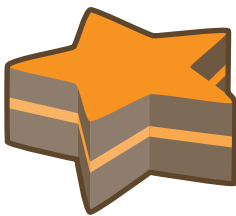
The traditional way to slice the design/management cake is by training right-brained creative types to learn how to keep track of time, watch the bottom-line and work with other people. But there are many ways to cut a cake.

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Tales from the trenches tell a compelling story about how managers can learn from designers and vice-versa. Commonly held assumptions are that designers are good mediators and problem solvers with the ability to consider multiple sides of an issue but who lack business acumen while managers are more skilled at business but lack creativity and flexibility. Personality and the ability to lead people effectively also factor into the recipe.
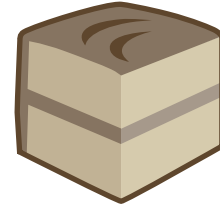
Phill Brummett of Strickler Associates, PC, an MEP firm in Fairfax, VA, shared his observation that managers seem more willing and able to make (and stick to) a decision. The managers' and designers' respective abilities to create viable, innovative solutions as well as to establish and stick to project budget and schedule define project success.

Another way to slice the design/management cake is the general acknowledgment that the more analytical among us can balance our methodical, linear, left-brained skills by being more creative and innovative. Skills designers use more often include thinking with their hands, using more iterative processes and challenging conventional, established methodologies[5]. *Design Thinking* by Tim Brown includes case studies drawn from his experience with IDEO to challenge manager-types to add new items to their problem-solving menus.

In *Design/Management, Managing Design Strategy, Process and Implementation*, Kathryn Best presents not only an enlightening timeline of design/management but a number of case studies for managing design strategy, process and implementation. The appendix features "18 Views on Design/Management." These columns written by business people, designers, educators and students across different cultures and industries illustrate the wide-ranging and convergent nature of design/management.

Yet another way to slice the cake is the deployment and management of design within the physical environment. Our buildings, our offices – even our sidewalks – can reinforce and enhance strategic advantage through operational efficiencies, opportunities for working in new and different ways to solve problems and fostering a culture of innovation.
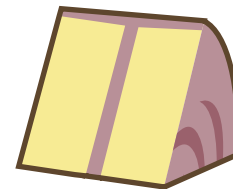
[5] See page 265 of *Managing as Designing*; page 151 of *The Design of Business* and page 227 in *Change by Design*

Susan Welker, AIA, LEED AP of Harris Welker Architects in Austin, TX, noted Walmart's introduction of skylights as a simple example of the role of design within the built environment. By introducing daylighting, the skylights change the atmosphere of the big-box stores, leading to increased sales per square foot. The skylights may indirectly reduce energy costs by reducing the need for electric lighting leading Walmart to incorporate skylights into their sustainable building practice to capture the very tangible and immediate economic gains brought by daylight.

Joseph Brill of Cini-Little International, Inc., in Germantown, MD, reaffirmed the connection between workspace configuration, office culture and the level of communication (and transparency) between functions, i.e., open office facilitates open communication. Better communication leads to better information sharing and informal education across the "team", which can then respond more competitively to client concerns, inside and outside the firm.

In *Change Design: Conversations about Architecture as the Ultimate Business Tool*, NBBJ, a global architecture and design firm, illustrates case study after case study in which the organization and performance of the building relates directly to the occupants ability to provide services or build products and, ultimately, to innovate and beat the competition. NBBJ relates the case studies to Change Tools broken into categories (Collaboration, Vision, Communication, etc.) which range from Challenge Assumptions (a frequent theme in design/management publications) to Simplify Complexity to Design(ing) the Relationship.

NBBJ discusses the Telenor project in-depth as an example of "hot desking" or hoteling where employees do not have dedicated work spaces. In building a new facility for its 7500 employees, Telenor chose to consolidate its corporate headquarters, which reduced the total amount of occupied space by 40% and operating costs by $3 million. Technology and internal operations facilitate and reinforce the business mission accommodating a paperless work environment for groupings of 1, 4, 40, 400 to 4,000. The mission and groupings which then form the basis for the building's parti.

The "hot desk" model is used less frequently within the AEC industry, but seemingly more so for legal and international firms. 3% of design/management respondents group people with different skills by project and then disband at the end of the project to create a new team in another location.

Haworth's white paper on change management[6] advocates for short- and long-term strategic planning to accommodate flexible workplace solutions to address emerging horizontal organizational structures and to allow for "quick formation and dissolution of functional work groups and teams." The paper cites four ways to address this volatile business climate: do the most with what you have; design integrated spaces rather than footprints; allow more user-centered control over the space available; and support team and private work within the same area. Haworth believes these steps will help support a "highly skilled and highly mobile" workforce. Another Haworth document on organic workspaces[7] postulates that "as the pace of change accelerates, the traditional workspace becomes increasingly inflexible."

Some of the most intriguing stories about design/management come from *Managing as Designing*. The book is a compilation of articles from a conference hosted by the Weatherhead School of Management. The conference emerged out of the process of designing a new building for the business school with architect Frank Gehry. Through the building design process, the dean of Weatherhead noted how the architect's way of working differed from his expectations of a traditional, linear approach and thought it important enough to continue the dialogue. What transpired was the realization that not only was the team designing a building, but innovating and transforming the educational program, the learning process and relationships at all different scales and levels.

Trends in design and management education

The experience of the Weatherhead School of Management illustrates a normative process in higher education as programs in design/management are increasing in number, popularity and prominence.

This is a push/pull relationship between skills in demand from the workplace, how colleges compete for the best and brightest and how education is shaping our common destiny. Based on the necessity to innovate and differentiate as industries become increasingly competitive (and commoditized) and to find new opportunities, people with both solid management skills and a design-centered approach will find themselves in demand.

[6] http://www.haworth.com/en-us/Knowledge/Workplace-Library/Documents/Facilities-Strategies-to-Support-Corporate-Change-and-Flexibility.pdf, accessed on 1/26/10
[7] http://organicworkspaces.com/#/organicworkspaces, accessed 1/26/10

Nathan Shedroff of the California College of the Arts sees education out in front of the marketplace. Mr. Shedroff heads the MBA in Design Strategy program at CCA and sees the primary challenge as "integrative thinking and the ability to bridge separate worlds." Tasked with creating the program from scratch with CCA, it was not enough simply to add design to a business program model. Mr. Shedroff believed the concept of how business is taught had to be rethought. The program is now under way and the initial two cohorts (26 students each) graduate this May. The majority will go into consulting. Roughly 67% of the current students have a design background while the others have non-design backgrounds in science, engineering and the nonprofit worlds. The program has grown 15% in the first two years.

The Design/Management program at Pratt Institute is an established master of professional studies (MPS) program "tailored to provide an executive education more focused than an MBA on the special needs of design leaders managing design firms or managing design teams in creative industries."[8] The program "provides participants with an integrated focus on the role of design in the creation and management of strategic and sustainable advantage."[9] Emphasis on design firms and design teams aside, the program seems to recognize the role design plays in the larger framework of management and business by deploying design thinking, design language or designer's tools to strategic advantage.

Parsons, The New School, is developing a master's in design/management (MFA) linking design/management to entrepreneurship and tying the leadership of creative teams to innovation.[10]

The University of Kansas launched their master's program in design/management in January of 2008 as the regional leader in design/management programs. Program literature states that "More companies are looking to design managers for leadership in coping with rapid change. The leadership comes in the form of new innovation strategies and ways of producing fitter, more customer-relevant offerings."[11]

[8] www.pratt.edu/academics/art_design/art/grad/design_management, accessed on 12/3/09
[9] IBID.
[10] www.parsons.edu/department/department.aspx?dID=78&sdID=103&pType=1, accessed on 12/3/09
[11] From University of Kansas Brochure, accessed from www.arts.ku.edu on 12/3/09

Tracing its origins back to the immigration of the Bauhaus's Laszlo Moholy-Nagy in 1937 is the Institute of Design (ID) at the Illinois Institute of Technology. ID offers an MDES, MDES/MBA, MDM (masters of design methods) and a PhD.

The Institute of Design lists the benefits of its programs as:[12]
• effective design methods that work in any field
• increased career value
• a global professional network
• immersion in cutting edge thinking
• the chance to make a difference

These trends are becoming hardwired into American education and are positioning our emerging workforce to take on new, integrated, cross-functional challenges across the business landscape.

Design/management as business strategy

Naming "design/management" is the first item on the menu. The broadening of our skill sets is valuable on an individual level and for our firms. Additionally, having better management and design skills makes us attractive and relevant in the larger business world. As we shake off this recession and plan for the future, there's a name for what we do and with the name comes value. Design/management is about recognizing design as a strategic and scalable skill to be leveraged across industries.

Broadening and putting a name to our skills also helps us understand and attract talented designers and managers who are now looking toward and enrolling in design/management programs which will prepare them to better meet personal, professional, community and client goals. These innovators and leaders of tomorrow will succeed in moving business toward new, more successful models within and even outside of the traditional AEC industry. As technology improves and services are increasingly commoditized with relationships making or breaking the deal, can we afford not to expand our collective skill set?

[12] http://www.id.iit.edu/99/documents/ID_brochureFinal.pdf accessed on 1/14/09

The further, more targeted integration of design and management means a strategic advantage for individuals who first (and best) employ it. Those who can capitalize on the integration of design to move beyond the "commoditization" of services stand a better chance of surviving the tough times, gaining market share and even loving what they do.

With the emergence of integrated project delivery (IPD), each of us is called on to understand the new models of building design and delivery and to meet the challenge with the best possible tools. Traditional linear project delivery is rapidly giving way to more "organic" and entrepreneurial models delivering original, unique results with higher value for clients.

Is there value in managers learning from designers and designers learning from managers?

Can cross-pollination really effect greater strategic advantage through an expanded skill set? Does successful integration of design/management concepts mean a first-mover advantage in the race to innovate? Does it mean an advantage for the AEC firm that can best deploy design within their own organization? Or for their clients? Does it mean attracting the best and the brightest new talent in years to come?

Yes. Would you like a piece of cake?
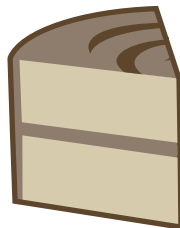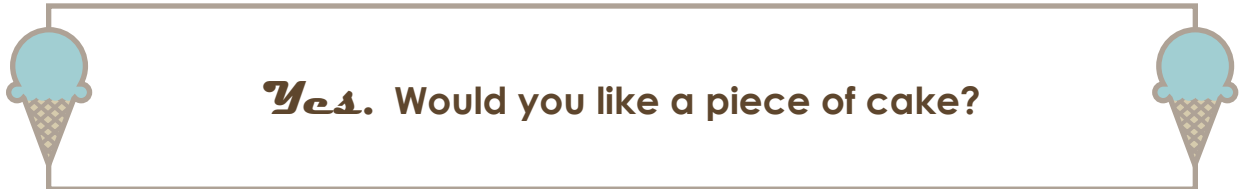
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wals communications is the first studio launched by **wals** and combines our passions for art, design and business through strategic marketing consulting. Our primary focus is the architecture, engineering and construction (AEC) industry as the business of "building" is our first love.

On any given day, you may find us:
- analyzing your competition
- documenting well-thought out objects, systems and processes
- planning (and making) collateral pieces
- chatting with our network of special consultants
- researching and writing papers and content
- preparing plans – strategic, business and marketing
- visiting museums or haunting the bookstore
- helping you pursue RFPs and ace an interview

We write white papers for fun. The topics are things we're interested in and we hope you enjoy them as well. We firmly believe that educational should also be interesting.

Recognizing that marketing professional services is different from marketing products we also know that AEC firms are feeling the crunch as clients increasingly view their services as commodities to be provided on a cost-only basis. So, how do you stand out from the competition?

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