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# Twenty-First Century Management Systems for Twenty-First Century Zoo Exhibits

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## Abstract

This paper suggests the need for more integration between design and management, and surveys a series of such systems already at work in American zoos and aquariums. Several of these establishments take an entrepreneurial and team approach to all elements of institutional management. This trend may blossom into the next major evolutionary step in the future of American zoos and aquariums.

*As we are swept along in the flood of exhibit and management innovations, we must remember that it is people, not technology, who bring success (Coe, 1997).*

## Introduction

The amazing transformation in zoos and aquariums in the last two decades is well documented in the *Proceedings* of this annual conference. A casual review of these accomplishments suggests that a three step process is taking place: (1) the emergence of “Big Ideas”, supported by (2) the horizontal spread of support elements (often with their own Big Ideas) and (3) the increasing integration of these concepts and resources through improving management systems. For example, the Big Idea “*Let’s use zoos and aquariums to teach the value of ecosystem conservation to the American public*” has been supported by the growth of theory and technology in exhibit design, animal training and management, horticulture, education and communication, operations, marketing and development and other areas. The third component, management, is the glue which bonds all the support elements together. If the bond is electric, the separate parts are stimulated with a controlled energy flow throughout.

As designers, we were first excited by the evolution of new ideas in animal exhibition, by ways to literally “keep the wonder alive.” Yet the more we learned about animal displays, the more we came to appreciate the importance of the people who ultimately determine their success or failure. Multi-disciplinary collaboration among teams of zoo and aquarium staff and designers is becoming the norm. Teams of contractors and fabricators build the features, but who manages the exhibits after the ribbon cutting? Where is the continuity? What happens when a twenty-first century exhibit is managed by a nineteenth-century management system? If team-based management works well for designing and building the zoo’ or aquarium’s most expensive investments, how well does it work in other departments? What AZA institutions are testing these methods?

At last year’s conference, John Bierlein and Cynthia Vernon suggested ways to both develop and maintain exhibits collaboratively (Bierlein, 1998; Vernon, 1996). Nancy Austin, a well known business management expert joining us on this panel, told us about team-based management structures being developed at the San Diego Zoo. Team-based management concepts have been revolutionizing American business for some time, producing record levels of both product quality and employee satisfaction (Walton, 1986; Katzenbach, 1993). Austin describes a new, people-based entrepreneurial spirit in American business (Peters and Austin, 1985). Could this approach and spirit be working in American zoos and aquariums as well?

These ideas led us to contact a number of AZA member institutions. Our purpose was to gain a quick sample of what is happening today at both a project level and an institution-wide level and to present informal sketches of how some institutions are optimizing their human resources. These samples were selected for their diversity and geographic distribution. We make no pretense of presenting this complex subject in depth. Thus it would be inappropriate here to evaluate the effectiveness of the different systems, other than to pass along some self-evaluations done by the institutions themselves. Our primary purpose is simply to call attention to an interesting trend. The information presented shows a range of strategies which are evolving in response to each institution’s unique needs and resources. It is hoped that within this range you may find concepts useful to your own needs.

## **Findings – What’s happening Out There?**

**Design Integration and Continuity at Woodland Park Zoo**, discussions and writings of Mr. John Bierlein, Manager of Exhibits and Interpretation, Woodland Park Zoo

In his excellent paper at this conference last year, Mr. Bierlein described his vision for a multi-disciplinary approach to exhibit development. In “Connecting the Pieces” (Bierlein and Sammons, 1997), he wrote, “The idea of the same group of people working together from the beginning through the end of an exhibit project simply doesn’t match the reality of what many of us experience. The average time between the start of design and the opening is five years.” He proposed a “continuity team” to insure full integration of all project elements. One of the principal benefits of this approach, he suggests, is in “... developing a sense of ownership and institutional memory. As line staff become involved with the fine-grained details of the look, feel and the functionality of the exhibit, they begin to assume a sense of personal and team responsibility.” He defines a continuity team “... as a value-driven, human system that represents an amalgamation of different disciplines and individual experience.” Mr. Bierlein

adds, “People with different knowledge and skill sets can do remarkable things as they work towards a shared vision.” He concludes, “Someone once said that exhibits, like works of art, are never really finished – only reluctantly abandoned. However, if they are abandoned by everyone simultaneously, they simply won’t survive. This is one of the reasons why successful continuity teams are so important.”

**Design Integration and Continuity at Brookfield Zoo**, discussions and writings of Ms. Cynthia Vernon, Director of Communications

In her valuable paper “Team Players: Brookfield Zoo’s Approach to Creating New Exhibits” (1996), Cynthia Vernon stated that team members are selected, at least in part, from a zoo-wide skill survey. Interest in personal growth and teamwork were also selection criteria. This process resulted in the involvement of people from positions which would not usually become involved in project planning and design. This had many surprising benefits. She related one example in her article:

*“ – Two members of the Zoo’s Security Department, a police officer and a life safety officer, each of whom was serving on different planning teams – were engaged in an intense discussion about the major messages communicated by their respective projects. They had transcended their usual roles... and were focused on the bigger picture: What our visitors were learning and taking away from their exhibit experience.”*

In the typical Brookfield project team there are six primary roles:

1. Project Administrator
2. Team Facilitator
3. Animal Advocate
4. Visitor Advocate
5. Developer (educational content and value)
6. Designer

Other specialist teams or departments which operate zoo-wide include the Visitor Advocacy Resource Squad (visitor comfort, ADA compliance), the Resource Conservation Squad (energy efficiency, recycling procedures), and the Communications Research staff. Other outside experts in everything from ethnic cultures to equipment hardware also contribute, as do professional architects, landscape architects, exhibit designers and project managers. Brookfield maintains a Commissioning Team (some original team members plus others as appropriate) to assist the project during the critical “break-in” or “commissioning” period after the ribbon cutting until the project is fully operational. An Advisory Board made of senior staff from the Animal Collection, Conservation Biology, Facilities and Communication Division (and others as needed) is there to assist the operation and modification of the project over the long run.

Under the heading “the trouble with teams” Vernon notes that there are also disadvantages: “As much as we dislike it...teams are not tremendously efficient.”...“The time it takes to communicate, negotiate, and implement ideas can mushroom.” Vernon concludes that:

*“ ... the team approach to exhibit development has been embraced at Brookfield Zoo, in part because it exemplifies and fosters the values zoo staff have identified as important to the organization: cooperation, responsibility, involvement and recognition. We believe that involving staff from all areas and levels in the organization not only makes for a better exhibit, but also strengthens commitment to the overall mission of the zoo. And that’s the ultimate team.”*

**A Management Problem Creates Opportunities at the Columbus Zoo**, telephone interview with Mr. Gerald Borin, Director

“Our interest in team management began when we couldn’t get enough seasonal help. We really depend upon seasonal employees in this climate, with our summer visitation peaks. But at job fairs everyone lined up to help with the animals and no one wanted to work in food and gift services”, Mr. Borin explained. “So we hit upon the idea of cross-training our seasonals so that they can rotate between animal care, horticultural work and visitor services. Since they work at entry level, cross-training is not difficult. A side benefit is that we can always keep them busy and more work gets done. This experience led our North America exhibits manager to suggest they take over operation of a train ride and snack stand in their area”,

Mr. Borin continued. “We use a strong team building process, assisted by our human resources people. Overall we’ve had excellent results” the Director recounted, “and we are looking into ways to expand the idea.”

**The New Entrepreneurial Spirit at the Minnesota Zoo**, telephone interview with Dr. Kathryn Roberts, Ph.D., Executive Director

“We use team-based management a lot!” Dr. Roberts stated. “Every year we all prepare our Work Plan. We identify key result areas and discuss initiatives.” The Director then appoints coordinators to manage these ad hoc Initiative Teams from interested staff whose area of expertise is outside the subject area of the assignment. For example, a horticulturist coordinated a team addressing a financial initiative. “This encourages a broad, multi-disciplinary approach, encourages a new point of view and provides cross-training”, Dr. Roberts explained. A typical team may include two coordinators (from different fields), an educator, an operations manager, a docent and perhaps an outsider from a university, business, public agency or special interest group. Where the team is to develop a capital project, the team coordinator becomes the project manager, coordinating with outside consultants. The team is responsible for preparing its own budgets and schedules. They may even participate in fund raising. “One team made over thirty public presentations” Dr. Roberts noted. All team members have full time traditional responsibilities as well. As at other zoos, this means a lot more work for staff, but there are also important benefits. “Increased staff ‘buy-in’ and coordination between departments gives us better results, staff develop diversified skills and we get a lot more for our operating budget”, Dr. Roberts reported.

How much human resource training and support do the teams receive? “Very little at present”, Dr. Roberts answered, “but a few years ago we did quite a bit. As one of the initiatives we developed, ‘Zoo U’, our in-house continuing education program. Many popular courses dealt with human resource subjects. We even identified a ‘Zoo Vision Keeper’ to keep the concept of teamwork alive. She continues to advise teams, but also has her own full time zoo job.” “The company culture really needs to support team approaches”, she emphasized. “Seventy-five percent of work here is done by teams and the management hierarchy is very flat”, she continued. “Each of our conservation managers (equivalent to curators) expect not only to manage their collections, but also to coordinate collaborative activities such as classes or special events held in their areas.”

How did you get started down this path? “About ten years ago we decided to become much more entrepreneurial,” Dr. Roberts responded. “We started by asking the State Legislature to

change our funding so that our profits (and losses – and we’ve had some!) are returned to us instead of going back to the General Fund. We also started a small, in-house development fund. Staff develop initiatives and back them with a business plan. If approved, the project was financed from the fund and if profitable, the profit could be reinvested in the project.”

Have you documented your story? “No we haven’t”, she responded, “but Paul Light (1998) featured our ideas in his new book.”

**Team Building at the John G. Shedd Aquarium**, telephone interview with Mr. Ted Beattie, President and CEO

“For the good of the institution you need to get the most from your resources. Everyone must participate,” Mr. Beattie began. He described that three and one half years ago he instituted a “total team environment” in new projects as well as in day-to-day management of the organization. This was initiated through the use of human resource training consultants. The aquarium now has ten of their own people trained as facilitators.

What was the staff response? “We have two groups”, Mr. Beattie responded. “The up and comers love it and have high expectations. Some of the ‘establishment’ didn’t want to make decisions.” The improvement in communication developed through the training was essential to make things work, but, he added “It takes time – more time than we thought. Senior staff must have 110% buy-in. Today new job applicants, especially in administrative positions, expect to see team-based management,” he added.

Mr. Beattie reported that today the aquarium operates within its traditional management hierarchy, but with a new bond of cooperation, collaboration and mutual respect, and there is improved operation throughout the organization. This success is best seen in the new multi-disciplinary teams experimenting with special exhibit programs such as “Frogs” and “Seahorses”, and in the development of their master plan. But a change can be seen in daily operations as well. “The Fish Department used to insist upon repairing its own life support equipment. Now they have more confidence in the Facility Operations Department to make the repairs”, Mr. Beattie noted.

**Management By Fun at the Audubon Institute**, telephone interview with Mr. Ron Forman, President and CEO

The Audubon Institute has had phenomenal growth in the last two decades, and now operates nine facilities with three million annual visitors, including a zoo, an aquarium, a riverside redevelopment and a research/conservation center. Forty of their ex-staff are now curators in other American zoos and four or five are now zoo directors themselves. How do they manage? “We manage by Fun!” Mr. Forman began. “We recruit people with diverse talents, people with a passion for their work, and then get out of their way!” “Animal management is becoming easy. People management is our big focus now. We have full time trainers on staff and training is required of everyone. We even have a full time recruiter!”

Mr. Forman believes they do a good job managing their multi-disciplinary project development teams. “We get an A+ for openings” he remarked, but admitted that they then move quickly on to their next projects and could do better on post-project follow through. Even so, the success of their “management by fun” approach is remarkable.

**A New Exhibit-Based Management Structure at the San Diego Zoo**, telephone interviews with Mr. Arthur Risser, General Manager and Ms. Virginia Tahmahkera, Manager, Organizational Development & Planning

Ten years ago, influenced by new team-based business management models, the San Diego Zoo used the natural refocusing which comes with major redevelopment to reorient some of their management around new exhibits. “The goal was to develop broad-based management teams to operate each new major exhibit, beginning with Tiger River”, Mr. Risser explained. “The animal and operations departments, which previously had the largest staffs, would transfer people to the new exhibit teams as they came on line. The original animal departments would eventually become technical support groups, while continuing to manage specialized animal programs”, Ms. Tahmahkera explained. They now have eight exhibit teams, with two more being formed. The self-directed teams manage their own budgets and schedules and coordinate with other departments operating in their area. The Human Resource Department and Organizational Development and Planning provide staff training and facilitation, assist communications and integrate team initiatives within the zoo’s Strategic Plan. Each team, which could be made up of animal care staff from a variety of departments as well as horticulturists, works closely with staff from building and grounds and construction and maintenance departments. Part time or as-needed support is provided by people trainers, animal trainers, educators and conservation specialists. Each team is guided by a coordinator who seeks to manage through consensus.

How is it working thus far? Ms. Tahmahkera recalled. “There was confusion and hesitation at first and many unexpected details had to be worked out. The transition is taking longer than most of us expected and, after ten years, isn’t over yet.” She added that most staff that have team experience like it, while some staff which haven’t yet experienced the process remain skeptical. Overall, both Mr. Risser and Ms. Tahmahkera are pleased with the progress. For example “... a two-year internal study found that team managed areas appeared to be better kept than traditionally managed areas, regardless of facility age.” She went on to list increased animal breeding and reduced staff absenteeism and sick leave as resulting improvements. She emphasized human resource benefits including cross-training and more complete specific training, increased staff qualification and flexibility and better quality animal care when the primary caregiver is absent. Zoo guests benefit, she feels, from encountering more knowledgeable zoo staff. “We had a horticulturist who reported increased self-confidence because she could now answer zoo visitor’s questions about the animals”, Ms. Tahmahkera noted. She also mentioned visitor exit interview scores have increased, although many variables probably contribute to this success.

“Teams are expensive!” Ms. Tahmahkera emphasizes. “A great deal of staff time goes into training and meetings and teams need convenient rooms to meet in.” But the zoo believes these costs are supported by both tangible (greater return visitation) and intangible benefits (higher guest and employee satisfaction). She mentioned the book *Job Shift* (William Bridges, 1994) which emphasizes the long term importance of staff and client satisfaction compared to traditional “bottom line” values. To other zoos contemplating transition to a system like theirs she suggested they try to create a “...clear image of what is to come”, in order to be better prepared.

New projects are developed by multi-disciplinary teams, as elsewhere, and the design process is managed by their in-house architectural staff and project managers, who also manage design consultants and specialist fabricators. The management teams are formed before exhibit opening to help with stocking, fit out and animal habituation and training. Research teams evaluate the exhibits performance and, when necessary, the architectural staff work with the exhibit management team to resolve remaining design issues. Mr. Risser also mentioned the Team Action Committees, made up of senior home department staff, which oversee development and assure top level coordination and collaboration for the self-directed exhibit management teams.

**The Theme Park Connection – Sea World of California**, telephone interview with Ms. Wendy Turner, Curator of Birds

Many of Sea World's newer attractions, such as Wild Arctic, utilize broad, interdisciplinary collaboration. Here, animal management, training for show and husbandry behaviors, behavioral enrichment, education, life support systems, maintenance, ride operation and merchandising, for example, are fully integrated and operate at peak levels. Interdisciplinary teams are convened to help in the planning and design of new attractions such as Wild Arctic, and some team members go on to help manage the facilities upon completion. Sea World of California adopted a "total quality management" approach about five years ago. All staff receive extensive human resource training and support. Ms. Turner, a strong supporter of the team-based management approach, finds that this system is working very well in the Bird Department.

**The New Synthesis: Disney's Animal Kingdom**, telephone interview with Dr. Jackie Ogden, Ph. D., Curator, Conservation Station

The Walt Disney World Company, a world leader in managing theme parks, brought its considerable experience to setting up an operating system for its new zoo/themed attraction, Animal Kingdom. This new synthesis resulted in a model between the typical curatorial/operations model of most zoos and the theme area based model being developed by the San Diego Zoo. For example, "Zoological Managers" (similar to lead keepers) supervise animal care staff under the guidance of their curator. They also "... partner with operations, maintenance, research, veterinary, educational and horticultural departments" (WDC Zoological Managers recruiting advertisement 1998). Curators also "partner" with their peers in the operations departments. These horizontal layers of "partnering" exist at many levels, encouraging coordination and integration of actions.

In addition to managing their bird and mammal collections, curators also manage specific theme areas. Here they coordinate interdisciplinary teams assigned to each area or called in at need. Support staff such as attractions greeters and interpreters, merchandise sellers, food service people, custodial workers, horticulturists and crafts people report to their traditional departments, but collaborate through the horizontal partnering process. Team participation in management is expected as a result of extensive human resource training required of all "cast members" (employees). Human resource specialists are always on call to help optimize opportunities in the workplace.

The Imagineers that uniquely Disney team of interdisciplinary creative specialists not only control the design process, but, unlike most zoos, maintain a strong presence through the life of the attractions. They help perpetuate the original vision, participate in its evolution and help

design needed modifications. Mainstream zoos would do well to emulate this concern for post-occupancy design attention.

Having just opened, Disney's Animal Kingdom is far too new for evaluation. However, Dr. Ogden feels very excited by this team-based approach and is confident it has both the commitment and flexibility to support their service-based, high stakes management needs.

## Conclusions

This paper only touches the surface of this complex topic. However, we hope it will support in-depth study and evaluation of these important trends.

In the 1970's we saw the revolution in immersion design. In the early 1980's the SSP programs got off the ground. The 1990's has seen important growth in animal training and enrichment, combined with exhibit design and we are seeing the blending of zoos, aquariums and theme parks. All the while we have seen the increasing impact of education, horticulture, visitor services, and other essential contributors. Will the next big idea occur at the primary level of institutional mission and vision? Probably not. We already have clearly stated visions for the Conservation Park (Conway, 1996), the Biopark (Robinson, 1996) and seen the opening of the Animal Kingdom theme park. Will the next breakthrough occur among the secondary support elements – exhibit design, distance learning, artificial insemination or narrative-based presentation? Possibly, but we expect a gradual to rapid improvement in these areas rather than fundamental change. The next revolution may occur in the third element, the bond that holds the institution's many members together – the management systems. The Audubon Institute concept of "management by fun", Minnesota Zoo's idea of management by individual and group initiative, the excitement expressed by Brookfield's Cynthia Vernon (1996) "Put me in, coach! I'm ready to play" have already revolutionized American business as the previous speaker, Nancy Austin, has shown. Will this team-based approach not only take exhibits and attractions to the next level, but advance the entire way we run our institutions?

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