

PLANETARIUM OPERATIONS AND MANAGEMENT

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Who Is This Document For?

Planetariums come in many flavors, from museum or science center facilities complete with their own production staff, to portable domes run by a single volunteer. In the interest of thoroughness I have included descriptions that might, at first glance, seem to pertain only to the larger “institutional theaters.” However, there are many operational fundamentals here that can apply just as easily to the smaller and more basic facilities. So no matter what type of circumstances you have to work with, my hope is that you can pull at least a few “nuggets” of useful concepts out of this article.

Manage *What Business?*

To be a success in business, be daring, be first, be different.
--Henry Marchant

Before addressing a nuts and bolts “business plan” for planetarium operations, let’s define a key element in making such an enterprise work: all the key players (administrators, board members, managers, presenters, volunteers, producers, supporters) should clearly understand and identify with the distinctive role of their institution in the community. Every planetarium not only serves a unique population, but also a special set of political and financial circumstances. As such, the “waters of success” may be navigated in different ways.

Beginning around the 1980’s, many public education institutions (museums, science centers, planetariums, aquariums, libraries, etc.) watched the slow erosion of state and local government support. In response, some searched for company trained professionals to help them fill the growing financial gap needed to continue operating. Unfortunately, many of these business-trained specialists dissected the museum operation as they had been trained – dividing every function into single dimensional “revenue vs. expenses” line items. A public service organization such as a library or museum cannot have everything hyper-analyzed to the microbial level in such a way because each individual function or department has a deeper and more immeasurable effect on the others.

Why is this so? Because when so many public service organizations are understaffed and underfunded, many of their staff members have to exercise multiple roles. As a result, delivering good service often means a more deeply symbiotic relationship between the various divisions and individuals within the organization must be established.

Gauging the effectiveness and popularity (i.e. “success”) of museum services isn’t just about measuring admissions revenue against expenses. Indeed it takes good business practice, effective promotion, and a wide range of skill sets to maximize attendance and budget management skills to make the most of every dollar, but beyond that it takes the expertise of “diversifying the revenue portfolio.”

There’s no doubt that institutions have needed to expand their collection of revenue streams to stay afloat, but the very definition of “afloat” has evolved as well. If there’s one thing that museums *have* learned from the business world, it’s that you need to be more responsive to a world of rapid technological and sociological change. That means being progressive, developing audiences, connecting more closely to the community, embracing change, and studying the societal appetites for both education and entertainment.

What Is Your Planetarium's "Business"?

I think you should take your job seriously, but not yourself—that is the best combination.

--Judi Dench

In the most general terms, many of us can agree that planetariums continue to serve several roles in their communities:

1. They are interpreters and popularizers of astronomy and space science
2. They support and enhance the teaching of astronomy and related subjects within the formal education system
3. They provide a community resource for reliable astronomical information
4. They can offer interdisciplinary or even artistic programming

Not all planetariums incorporate all of these roles or do so to the same degree. At one extreme might be the fulldome video theater with 3-D immersive animation. However, a major public facility might have a strong emphasis on both public shows and school presentations. A college or school facility may emphasize programming for the formal education system at specific levels with some or no public programs. And at the other extreme could be a small or portable planetarium with 100 percent use for school activities. Or further still, a facility might offer non-astronomy based programming that they feel enhances its value and maximizes its utilization.

Whatever the role or mix of roles, each of these facilities shares one thing in common – they must determine how to utilize the correct resources to deliver a desired product and have a financial plan to back it up. When I say “resources” I’m talking about a lot of things:

1. A well trained staff who have the preparation and communication skills to deliver the product effectively
2. The appropriate level of tools and materials for the staff to create and present the product
3. The means to find out the needs and expectations of your audience
4. An administration that appreciates the unique environment of community service organizations, especially how to nurture and grow a productive staff
5. An effective marketing and advertising plan
6. A development effort that brings in additional public support through memberships, sponsorships, endowments, underwriting, grants, and special events

Filling the Niche in Your Community

Fight for your opinions, but do not believe that they contain the whole truth, or the only truth.

--Charles A. Dana

In order to identify what the “desired product” even is, a management team must be able to:

- Identify their target audience
- Determine the desires and needs of community members and use that information to excite and engage them
- Conduct market research through focus groups, test screenings, polls and surveys
- Realize the need to occasionally “reinvent themselves” when technology and methodology go out-of-date (and before attendance falls)
- Make the most of their available resources
- Achieve a high level of “popular programming” (compelling, valued, meaningful, desirable, professional, engaging, inspire repeat visitation)

General Operations

From a simplistic, subjective, public viewpoint:

For a product to be popular, it has to be “good.”

For a product to stay popular, it has to get “better.”

What this really relates to is **people**; you and your staff are the ones that must constantly improve, modify, and evolve. To do so keeps things modern, fresh, and interesting to our audiences as well as challenging to us. Of course this is easier said than done; it's human nature to stick with what we know and with what's comfortable, but that's when things stagnate and become mediocre.

Many of us can recite the basic work practices. Unfortunately, it's when we're under pressure and need them the most that they usually get flouted. So here they are:

- Do things right the first time. The amount of time it takes to rush something together then go back and fix it almost always totals more time than it would have taken just to do it right in the first place. Not enough time you say? Then...
- Make the most efficient use of time by planning a *balanced* work schedule. As things get complex, it is dangerous to look at everything with the attitude of “we'll deal with things as they come up.” It is better to devise a schedule with specific (but doable) milestones and deadlines. Make lists and update them with staff as needed. If you pace yourself, plan ahead often, and prioritize appropriately, then you will be able to stay on track with rehearsal and production schedules.
- Keep things organized, whether they be equipment or computer files. Quick and easy access isn't just about being structured; it maximizes efficiency in an operation where every minute counts. (See how this relates to the above?).
- Communicate often. Coordinate with other staff, supervisors, and volunteers on projects, meetings, and rehearsals. Never assume it's just going to happen on its own. Any problems that arise should be promptly taken directly to the person(s) involved. Don't hesitate to ask for help when needed and discuss potential solutions at group meetings.
- Stay current on the profession. One of the best ways to improve your techniques and broaden your creative approach is by reading the professional literature, and discussing ideas with your friends and colleagues. Attend conferences and workshops, and make study trips to other planetariums. Study the methods of successful media communications and science interpretation. Become aware of the services of regional and national organizations (planetariums, mass media, technology, public education, research).
- Keep up on current events. Most planetariums maintain a library with a good cross section of popular works in astronomy, space, and related sciences. For example: observational astronomy, star atlases, history of astronomy and space exploration, biographies of famous scientists, star lore, mythology, philosophy of science, topics in research astronomy, textbooks, activity guides, resource and reference books, amateur astronomy techniques, and so on. Most also have subscriptions to magazines like *Sky & Telescope*, *Astronomy*, *Mercury*, *Science News*, *The Skeptical Enquirer*, *Scientific American* – make sure you and your front line communicators read them regularly! As a planetarian *you* are the person that audiences will ask for the latest information, so keep up with current events. Especially now in today's electronic world, there's no reason not to know “what's up”!

- Be professional and respectful in your dealings with the public and your fellow employees. With the public, no matter what their viewpoint, always be patient, attentive and courteous in responding to inquiries, suggestions, or complaints. It is not appropriate to inject personal beliefs or become argumentative with patrons. With fellow staff, everyone should be expected to know the difference between constructive suggestions and destructive whining. In other words, problems get solved by careful thinking and proposing positive solutions, not by making personal criticisms, especially in the presence of other staff.
- Commitment to integrity. Professionalism in public programming means being dependable, reliable, and respectful in communications with staff and the public. The credibility of the entire institution is at stake with every interaction a presenter makes.
- See things through the eyes of your audience. To be effective at planetarium (or any) presentation means developing a feel for your audience, studying other successful presenters, and looking for innovative ways to engage people. Try to remember what it felt like when you were first exposed to new ideas and how difficult it was to grasp some concepts.

Management

First, make yourself a reputation for being a creative genius. Second, surround yourself with partners who are better than you are. Third, leave them to get on with it.

--David Ogilvy

- Stay in comfortable touch with your fellow managers, administrators, board members, producers, show presenters, volunteers. This doesn't always require regularly scheduled meetings – in most cases it simply means informal conversation, brainstorming, speculating, asking the “what if” questions. When any of these groups are left to make assumptions or draw conclusions on their own in a vacuum, misconceptions and misinterpretations are inevitable and then you'll be wasting precious time backtracking (e.g., part of your team jumps from “step 2” to “step 9” in thinking out a proposal when they don't have all the data or comprehensive input).
- Always look for a good fit when bringing on new people, whether they are full-time producers or volunteers. Match the right skill sets and attitudes to the work environment and projects you need accomplished.
- Every involved individual (whether they be colleagues, advisors or employees in your department) has their own unique set of skills, personalities, idiosyncrasies, motives, agendas, creative biases, emotional baggage, and expectations. Like it or not, hiring a person means you're bringing on the entire package. Be sensitive and understanding of the differences, but also work to bring out the best of each character. Learn how to communicate effectively in various situations and focus a diverse group of creative people into a positive direction. Accept it, embrace it. Never be too rigid in forcing such a group into a narrow way of doing things. If you provide an open atmosphere of trust, one where they don't have to worry about being “nit picked” or destructively criticized, you'll get an environment where people won't be afraid to suggest novel ideas and test out possibilities for progressive quality programs.
- Budgets – Know the difference between what's absolutely necessary to keep the facility moving, and “wanting” something just because it would be “cool.” Prioritize budget items that will have the biggest impact.

- Be entrepreneurial. Look for and participate in new program opportunities, collaborations, sponsorships, underwriting, etc. Yet don't react too quickly without doing at least some research ahead of time.
- Become acutely aware of the political realities of your institution. Politics and personal agendas are always present, so develop the skills for communicating appropriately in those environments (e.g., don't alienate important people just because you feel like a personal point needs to be made).
- Choose your battles wisely. You will never "win" exactly what you want out of every situation – work from a position of constructive solution finding and settle for what's in the best interests of the institution. Don't take things personally. Keep your cool.
- Always have research available on key issues – attendance vs. revenue pictures, trends in the industry, comparisons to institutions with similar situations, new technologies, respected contacts in the business, key political and business figures in your community, what your competition is in the area, etc.
- Staff management – There are times to listen carefully and search for consensus and there are times to demonstrate decisive leadership. This doesn't mean playing the role of "evil dictator," but many situations will require you to think quickly on your feet and be ready to make judgment calls when necessary.
- Never be so presumptuous as to assume that your viewpoint is always the best way to do things. To be effective at planetarium management means keeping an open mind, maintaining some perspective on the "big picture," putting your audience's needs before your own, getting advice from other professionals in related (or even non-related) fields, and sustaining a willingness to experiment with new ideas and techniques.

Budget Elements

An expert is a person who has made all the mistakes that can be made in a very narrow field.

--Niels Bohr

Even with the recent infusion of full-dome digital cinema, a planetarium is not a movie theater. It is a mistake to think that you can just hire one person to wind up a movie reel and push the "start" button. A planetarium is still primarily an astronomy interpretation center for the general public and the educational system. As we have seen, it can take on many functions, only one of which is the presentation of shows.

Where a budget is set depends on the roles and goals of each planetarium. Influencing factors include:

- Potential audience
- Variety and complexity of programs
- Whether shows are produced "in-house" or purchased
- Size of the theater and staff
- Level of related activities such as workshops, outreach, media work, research, telescope/observatory operations, and special events
- How much the planetarium staff will also be working in other areas (is their time split with other departments in a museum, teaching at a university, etc.?)
- How much the facility can be promoted and advertised

Below is a comprehensive list of budget categories. Many of these may only apply to a large and diverse operation, so feel free to skip over the line items that may have little or no relevance:

- Staff salaries and benefits.
- Show packages (commercially available productions for adaptation).
- Production equipment:
 - Computer workstations for digital imaging, modeling and animation
 - Rendering computers (if doing video animation)
 - Cameras and video gear
 - Hard drives or storage servers for production, backup and archiving
 - Audio production hardware (computer, mixer, sound system)
 - Software packages and special “plug-ins”
- Production services (you’ll still need some of this even if you buy a “show kit”):
 - Audio services (narration, sound effects, surround sound treatment, etc.)
 - Narrator contracts
 - Original music or music libraries
 - Artwork, models or animation from outside sources
- Royalties for the use of certain visual and audio material.
- Technical production:
 - Auxiliary projectors
 - Assorted motors, gears, wheels, wire, connectors, and a slew of optical components for the fabrication of effects
 - Carpentry items
- Technical maintenance and repairs:
 - Projector lamps, parts and electronics
 - Spare projectors and parts
 - Computer components
 - Specialized tools
 - Small hardware
 - Hardware/software upgrades
 - Out-of-house repairs to equipment
 - Parts for telescope upkeep and development
 - Maintenance contracts for star machine, projectors, computers, etc.
 - Reserves for emergency repairs
- Dues and Subscriptions:
 - Membership in professional organizations
 - Science and astronomy periodicals
 - Books for research and reference
- Office equipment and expenses
- Conference travel (necessary if you want a staff capable of recognizing and producing professional material!)
- Advertising
- Utilities
- Equipment upgrade and replacement. A planetarium theater is a piece of technology, and like a computer, it needs to have parts replaced and modernized in order for it to keep up with the demands of the marketplace. Special fundraising campaigns should be *planned on* to take into account the larger replacement items such as star machines/video projectors, sound systems, automation equipment, and the like. With some items a lease arrangement might be more practical, such as for video projectors or computers for digital systems.

How Do You Pay For All This?

Probably the most perpetuated myth of planetarium operations is the expectation that they should be able to pay for themselves purely out of ticket revenues. Or worse, that the planetarium should “make money.” The planetarium is not a profit center, it is an educational service much like a library and it’s ok to accept that. Just like a library, it represents a valued cultural resource and gets its support from a *variety of fund raising activities* (just like a museum). These include:

- Gate receipts
- Sponsorship of programs, exhibits, or services
- Local government support
- Grants
- Endowments
- Special Events (Special Screenings, Wine and Dinner, Fundraising Ball, Auctions, Guest Speakers...)
- Membership and “Friends” programs
- Show sales (if there is an in-house production capability)

Wisdom is the reward you get for a lifetime of listening when you’d have preferred to talk.

--Doug Larson