

# Journal *of the* American College *of* Dentists

Sustainability

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# Journal of the American College of Dentists

**A publication advancing  
excellence, ethics, professionalism,  
and leadership in dentistry**

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- C. To encourage graduate studies and continuing educational efforts by dentists and auxiliaries;
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- E. To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;
- F. To encourage the free exchange of ideas and experiences in the interest of better service to the patient;
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Cover image Is green the new color of dentistry?

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## Guest Editorial

### What's Wrong with Alice?

Another misconception, in my opinion, is confusing actions with results.

In Chapter 6 of Lewis Carroll's *Alice's Adventures in Wonderland*, Alice comes to an intersection where she meets the Cheshire Cat and has the following exchange:

*"Would you tell me which way I ought to go from here?"*

*"That depends on where you want to get to," said the Cat.*

*"I don't much care where —," said Alice.*

*"Then it doesn't matter which way you go," said the Cat.*

*"— so long as I get SOMEWHERE," Alice added as an explanation.*

*"Oh, you're sure to do that," said the Cat, "if you only walk long enough."*

This exchange is representative of many situations found in society. Sure, Alice's path may be eventful and fun, but solving the "where" questions is crucial to avoid walking aimlessly through the winding paths of life. The destination is often hard to identify for individuals, businesses, and organizations. In many situations, including with the ACD Board, I find myself returning to the following questions: Where are we now? Where are we going? How do we know when we get there?

#### Where Are We Now?

As we all know, dentistry is a much different world than it was when the ACD was founded in 1920. The clinical practice of dentistry has

evolved as materials we use continue to change with the development of composites, new materials for ceramic crowns, and even 3D printed products. The regulatory environment has evolved as dentists are now subject to many more rules governing their practices than in 1920. For example, gloves wouldn't be mandated by OSHA in the United States until 1991 and their use was even challenged by the ADA until a court decision supported OSHA's position in 1993 (*ADA v. Martin* 1993). Advertising and business practices have changed, with dentists' advertisements now commonplace across all media. Companies backed by nondentist investors are also present.

With all of this change in the dental field, how have dental organizations evolved? One notable change is the growth in the number of dental organizations since 1920, as there are now organizations catering to the needs of a variety of clinical, business, and demographic interests. This inherently leads to greater competition between organizations for membership and volunteer time and effort. It also fragments the narrative that dentistry tells the rest of the world. On the other hand, specific messages, interests, and initiatives can become the central focus of that particular membership. For example,

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developments in management of sleep apnea are not and should not be the central focus of the American Dental Association, but specific organizations have formed with furthering our understanding of this subject as their primary goal.

The ACD was founded by a group of leaders who believed that “dentistry must look beyond today and plan for the future.” The object of the organization at that time was “to elevate the standards of dentistry, to encourage graduate study, and to grant fellowship to those who have done meritorious work.” (Graduate study referred to what we now know as continuing education or lifelong learning.) The vision for the organization at the time was very clear, and strategic initiatives were carried out by the leadership to further that end. Multiple efforts were made over the following decades to improve dental education and journalism. In the 1930s through the 1970s, advocacy efforts evolved to look at access to care and prevention. The 1980s saw ethics become a primary focus of improving the profession, and those efforts continue today.

Over the past 40 years, the ACD has published multiple resources related to ethics in dentistry. One challenge we face is measuring what impact, if any, these efforts have had on the profession. Can we conclude that dentistry as a whole is more ethical than it was in 1980? How does one measure ethical conduct?

## Where Are We Going?

The current mission statement of the ACD is to “advance excellence, ethics, professionalism, and leadership in dentistry.” How do we successfully fulfill our mission? What happens in a perfect world if ACD is able to completely “solve” problems related to ethics? Professionalism? Leadership? Would “solving” leadership issues in dentistry mean that all dentists (fellows and pre-fellows) hold elected offices? Does the title one holds define leadership? Is it okay to have a spectrum of leadership skills in a perfect world? Defining the end goal is crucial to achieving it.

One of the challenges I observe in many organizations, ranging from government to national dental organizations to local nonprofits, is that of achieving results. Most organizations state that they have a mission or purpose and are happy to talk about it. The challenge becomes defining a tangible vision and putting the words into results. Another misconception, in my opinion, is confusing actions with results. Actions are events that occur (e.g., speaking to a group of dental students, hosting a fundraiser, etc.). Results are what happens as a consequence of those actions.

In the case of the ACD, we can certainly continue shouting our mission statement and feel good that we support “excellence, ethics,

professionalism, and leadership in dentistry.” If we really want to achieve results, we need to further envision what results we want to achieve. Once the vision is concrete, actions become more directed and more impactful. We can walk forward with purpose and avoid having to ask the Cheshire Cat which way to go.

## How Do We Know When We Get There?

I would welcome your comments on measurable results for which the ACD should look to achieve at the national, regency, and individual levels. The ACD Board is concerned about this as well.

Without knowing where we’re going as an organization, it’s easy to keep walking without reaching a worthwhile destination. A common theme across many organizations is having discussions and producing content without having any measurable outcomes to determine whether efforts have been productive. In order to make an impact on society for the greater good, remain relevant in a changing world, and better support our fellows, the ACD looks forward to answering these questions and walking with purpose toward a definable destination.

## Readers Respond

### Letter to the Editor

To the Editor:

According to the paper by Marc Ackerman in the spring 2018 issue of this journal, teleorthodontics desires to claim its throne as dentistry's "disruptive technology." Why wait for legislative changes to approve a new business model, when it's easier to circumvent regulatory compliance and argue that they don't apply, when challenged? The corporate world's insatiable thirst for dollars was not satisfied by the revenue streams coming from orthodontics and general dentists, so now they want direct engagement with patients.

If access to care is the primary driver for these new ventures, then why open teleorthodontics centers in cities where patients already have access to many orthodontists?

Yes, teleorthodontics can improve access for some, and will allow for a cheaper alternative by eliminating the middleman, but at what cost to patients and to our profession?

Aligner technologies were adopted as the standard of care by the lay public because skilled and trusted dental professionals introduced the technology and then stood behind their results, knowing they could

provide other corrective options, if necessary. We let the genie out of the bottle. As a profession we have accepted that a Class I occlusion, devoid of interferences with joints seated in their most superior position, is no longer the standard of care for orthodontic patients. Teeth aligned

We let the genie out  
of the bottle.

in the arch of a patient that can accommodate to a new occlusion is now acceptable. Dentistry has allowed patients and corporations to dictate what is tolerable, instead of articulating the limitations of alignment dentistry and demanding better results from these modalities. We bent our standards to conform.

Individuals should realize they are bypassing the traditional dental model by taking impressions in the privacy of their own homes and mailing them off for aligner fabrication. These individuals assume the risk by agreeing to follow a recommended treatment protocol, which may include documenting the case with selfie posts on social media. Our profession should, however, take issue with other forms of teleorthodontics in which salespeople in alignment storefronts, mistaken for "providers," are taking digital scans of patient's teeth, then outsourcing the alignment

configuration to an undisclosed dentist, hidden from reproach.

As a profession, do we feel patients have a right to pretreatment exams, disclosure of findings, a diagnosis followed by proper informed consent, and treatment options, including doing nothing? Do we want to allow nondentists to file dental claims and accept payment without provider disclosure or license status revealed? What recourse is available to teleorthodontic patients when treatment does not produce desired results or if they are harmed?

Orthodontists and dentists are bound by the Hippocratic Oath and subject to sanctions from the state board of dentistry and the legal system. Do state dental boards have any jurisdiction over teleorthodontic entities? Do HIPAA laws apply to these entities? Dr. Marc Ackerman would have better served our profession by answering those questions and advocating for a teleorthodontic patient's bill of rights, instead of professing a Trojan horse argument and poison pill. The free market dictates to corporations and Main Street economies, yet dentistry continues to be eroded by "in the name of access" policies. Why?

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# Sustainable Dentistry

## A New Dental Ethic

Beverly Oviedo, MS

Seven years ago, Eve Cuny, the then-Director of Environmental Health and Safety at Pacific's Arthur A. Dugoni School of Dentistry, and I approached ASTM International (American Society for Testing and Materials), one of the world's largest voluntary standards organizations, about creating a standard for dentistry that could help dental practitioners mitigate environmental issues related to the profession. Once we received ASTM's approval and established a working group, this mission quickly expanded to incorporate the value of sustainability as a whole instead of just one of its components. On May 1, 2015, this standard received 100% approval by ASTM's members and eventually culminated in the first global conference for managing sustainability in dentistry, organized by my nonprofit organization, HKA Projects for Sustainability. It has also led to this opportunity to collaborate with the American College of Dentists on this journal project and feature some of the speakers who presented at an international conference this year in Reykjavik, Iceland.

So what is sustainable dentistry? To begin answering this question, let's first define sustainability. According to Fritjof Capra (2015), "sustainability" involves sustaining the self-regulating, living systems on which our long-term survival depends. It is taking a "systems view of life," which holds that networks are life's basic

organizational pattern and that our material world consists of three fundamental components: the material, the cognitive, and the social. When one adopts this systems-style approach to the living world, a mesh of interrelated systems reveals itself. For example, humans live within social systems and ecosystems, and even have ecosystems nested within themselves. Underlying these systems is the proverbial "breath of life," our metabolism, which as Capra notes, maintains the continuous flow of energy and matter as well as produces waste. This waste ultimately becomes the food of other organisms, such as plants—hence the concept, "zero waste." For Capra, the issue of sustainability is an ecological one where social institutions, such as the dental profession, need to align their activities to maintaining the intricate web of life that supports this planet.

To reach this type of human-ecosystem equilibrium, or homeostasis, however, the social systems need goals; they require benchmarking and models to achieve those objectives. In 1987, the United Nation's World Commission on Environment and Development produced a report titled, *Our Common Future*, also known as the *Brundtland Report*. In this report, the UN

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generalizes Capra's view by defining "sustainable development" as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." In 2015, the UN established a collection of 17 sustainable development goals (SDGs) that it wanted to achieve by 2030. "Transforming our World: The 2030 Agenda for Sustainable Development," or the "2030 Agenda" for short, seeks to, for example, end poverty and hunger, conserve and restore our environment, foster decent work and economic growth, and strengthen global partnerships to reach these goals (United Nations, 2015).

To the UN, the concept of sustainable development rests on three pillars: the environment, the society, and the economy. For business professionals, these three pillars became the foundation for corporate sustainability and, consequently, an accounting framework known as the "triple bottom line." Unlike the traditional bottom line in business that focuses on financial performance, the triple bottom line expands this concept to include social wealth creation and environmental responsibility. By expanding this concept, the paradigm for organizations shifts from one that simply tries to appease shareholders to one that evaluates the actions of an organization based on how they directly and indirectly impact all stakeholders. The belief behind this way of thinking is that organizations can create value and long-term stability while still contributing to society at large.

Today, this framework has become the gold standard to which corporate social responsibility professionals try to align their organizations' activities. For the dental profession, the path to reaching these goals has also become much clearer in recent years.

In 2017, FDI World Dental Federation decided to become a global partner to the UN and established its own umbrella policy for sustainability in order to align the dental profession with the goals established by the UN. They saw that the dental profession remained a silo while the social systems of the world became increasingly integrated. Thus, in order for the dental profession to thrive in the 21st century, dental practitioners needed to collaborate with more stakeholders, such as governments, manufacturers, and scientists, so that they could reevaluate and modify their processes and practices. They needed to establish a new ethic within the community based on sustainability's three pillars; and, they needed to create a voluntary standard to help dental practitioners realize that ethic. Fortunately, through ASTM International, our working group had already created that road map. E3014-15 is a management system that provides a framework for integrating corporate social responsibility into the organizational cultures of dental organizations.

To better explain how this management system operates, we need to first grasp the concept of "sustainable dentistry." Sustainable dentistry is when a dental organization voluntarily embeds corporate social responsibility into its organizational culture through the creation of a sustainability policy that outlines its commitment to and strategy for internally and externally focusing all its activities on realizing a triple bottom line, i.e. economic prosperity,

social responsibility, and environmental stewardship. Managing sustainability in dentistry, therefore, is the implementation, monitoring, and adjusting of what this sustainability policy entails within a dental organization. Based on this understanding, our management system is a top-down commitment that begins with the character of the individual dental practitioner striving for continuous growth within his or her practice.

For Aristotle, behaving ethically was less about following principles and more about developing good habits. By focusing on developing our character, behaving ethically would become our natural way of being. Moreover, by learning how to behave ethically, we would know how to create the conditions for others to do the same. Building a sustainable dental organization starts with the character of an individual dental professional. If sustainability is a guiding principle in that person's life, then it will certainly manifest in his or her organization. Take Dr. Jason McMillan, founder of Mint Dental Works, as an example. McMillan founded the nation's first LEED-certified dental practice in Portland, Oregon. By wanting to establish a practice that reflected his personal values, he worked with builders to construct a high-performance green facility. This type of practice resonated with the local community; and without an initial marketing budget, Mint Dental Works became a national leader for referrals.

Just as with individuals, organizations also have characters, which are more commonly known as "cultures." Thus, once the commitment towards creating a sustainable dental organization is made, the corresponding values must



be embedded within the organization to foster the desired cultural outcome. Dr. Robert “Tito” Norris, founder of Stone Oaks Orthodontics, the nation’s first LEED-certified orthodontics practice, is a perfect example of this attitude. Even without a guideline, he naturally applied systems thinking to the nine areas of dentists’ lives. At our conference this year, Norris began his presentation by discussing the values that his parents engrained within him. He continued by talking about how these values influenced certain decisions about, for instance, his attitudes towards health and family. These attitudes carried over to his practice, where he illustrated how those values became entrenched within his organization, promoted job satisfaction among his staff members, endeared him to his patients, and established him within his community. For Norris, orthodontics is not just a means to financial well-being, it is a conduit for increasing the social wealth of his community and a vehicle for expressing his passion, love, and respect towards the living world.

Whether a dental practitioner strives towards building a B Corporation or simply wants to better his or her community, the process of building a sustainable dental organization can be daunting. Fortunately, help exists. Throughout the rest of this journal issue, speakers from our conference and those who were involved with formulating the ASTM standard and FDI World Dental Federation’s policy will expand on the concepts that I just explored and discuss the models and methods needed to make a commitment, craft a sustainability policy, embed value into one’s organization, strive towards

continuous improvement, align internal and external actions with sustainable development, and evaluate the effectiveness of those actions. As you read these articles, I encourage you to consider how the dental community can collectively advance this cause and applaud those of you willing to take on this challenge, for our world is in great need of ethical leaders—the future of humanity requires it. ■

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Thus, in order for the dental profession to thrive in the 21st century, dental practitioners needed to collaborate with more stakeholders, such as governments, manufacturers, and scientists, so that they could reevaluate and modify their processes and practices. They needed to establish a new ethic within the community.

# The Business Case for Sustainable Dentistry

Bob Willard, PhD

## Abstract

Sustainability makes business sense for dentistry. All organizations adapt in order to do the right thing, to take advantage of new opportunities, and to avoid or mitigate risk. Dental offices can achieve all three advantages through a sustainability approach. Typically, organizations are in one or another of the following five stages of embracing sustainability: (a) pre-compliance or cutting corners on existing regulations and hoping not to be caught; (b) compliance or doing all that is legally required but little more; (c) beyond compliance where innovative elements of sustainability are introduced; (d) with an integrated strategy, offices rebrand themselves, making sustainability a recognizable feature that differentiates the office; and (e) a final stage of purpose and values where the office places sustainability at the highest level of reasons for existing.

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Twenty or thirty years ago, if you were to ask most executives why they weren't more environmentally and socially responsible, they'd think it was a trick question. The answer was too obvious. They would be at a competitive disadvantage if they tried to become too "green" or became too distracted by helping the underserved in their communities. It would be too costly. Just keeping up with all the workplace and pollution regulations was a burdensome expense. There was no business case for doing more. These companies were stuck at early stages in their sustainability journeys. Most still are. Maybe some dental practices are, too?

Sustainable dentistry is about contributing to the well-being of the environment, society, and the economy. It is about intentionally contributing to the achievement of the 17 Sustainable Development Goals (SDGs).<sup>1</sup> They define the goals we need to achieve if we want to continue to have a sustainable human society on our finite planet, forever. By addressing waste issues and promoting good oral health habits in patients and society, dentists can make a significant contribution to protecting the environment and providing inclusive, productive and healthy lives in societies around the world—while being more successful businesses—in the 21st century.

This article will explain how that is possible. First, we'll review the big three justifications that are used to support any business decision in any

industry sector, and how their relative importance has changed from 20-30 years ago. Then we'll show how the three justifications are weighted differently as dental offices progress on their journeys to being sustainable dental practices, and how each step on the journey enables the dental office to reap more business benefits.

## The Big Three Justifications

There are just three reasons that companies undertake anything new: do the right thing, capture opportunities, and mitigate risks. The justifications are weighted differently, depending on the situation, but some combination of them is always in play when making big decisions. They frame the business case.

Figures 1-2 illustrate the dominant mental model in the business community in the last two centuries. Unfortunately, it is also the dominant mindset still taught in most business schools. It positions being a steward of the environment and society as an either-or choice: either do the ethically right thing for society and the environment, or aggressively capture financial opportunities and mitigate risks.

In the 21st century, doing the ethically right thing has moved from the margins into the mainstream. Improving company impacts on the environment and the community can lead to capturing new financial opportunities and mitigating new

risks. It is now an if-then relationship, not an either-or trade-off. Doing the right thing has morphed from being an anchor in the old business paradigm to being a driver of success.

### The Five Stages of Business Sustainability

The five-stage sustainability continuum applies to any business. Companies mature from an unsustainable business model in Stages 1 and 2, to a more sustainable business model in Stage 3, to a very sustainable business model in Stages 4 and 5. During the journey, executive mindsets evolve from thinking of “green,” “environmental,” and “sustainable” initiatives as expensive and bureaucratic hassles, to recognizing them as catalysts for strategic success.

Now, let’s examine how the three justification factors might be weighted for a dental clinic in each of the five stages of its sustainability journey.

#### Stage 1: Precompliance

It’s risky to linger here. In this phase, a dental clinic flouts environmental, health, and safety regulations. It cuts corners and tries not to get caught if it breaks the law or uses exploitative practices that cheat the system. It employs unqualified staff and forces them to work in a dysfunctional, abusive workplace. It may use questionable sterilization practices, perform sloppy dental work, and quietly evade taxes. It is careless with its biomedical and amalgam waste.

These businesses happily externalize their negative ecological and social impacts.

This stage is associated with corrupt jurisdictions in undeveloped countries. In developed countries, 80% of the motivation to move to Stage 2 is to avoid or mitigate risks. That’s the business case. Society is starting to demand that all businesses be more accountable for their collateral social and environmental damage. Whistleblowers are encouraged. Social media leaves no place to hide. If these clinics don’t clean up their acts, they will be exposed and put out of business by regulators, professional dental associations, or clients who leave for better clinics. The weight of the capture opportunities justification for the move to Stage 2 is about 20%—the opportunity is to stay in business. The do-the-right-thing justification is not on the radar screen.

#### Stage 2: Compliance

Here, the dental office manages its liabilities by obeying all labor, environmental, health, and safety regulations. It respects dental college and dental professional organization standards, regulations, and by-laws. It does what it is legally or professionally bound to do. The office complies with local regulations for the handling of its waste (dental amalgam, lead, silver, and biomedical and general office waste). Its staff is professionally

FIGURE 1.  
**Big Three Justifications:  
Traditionally**



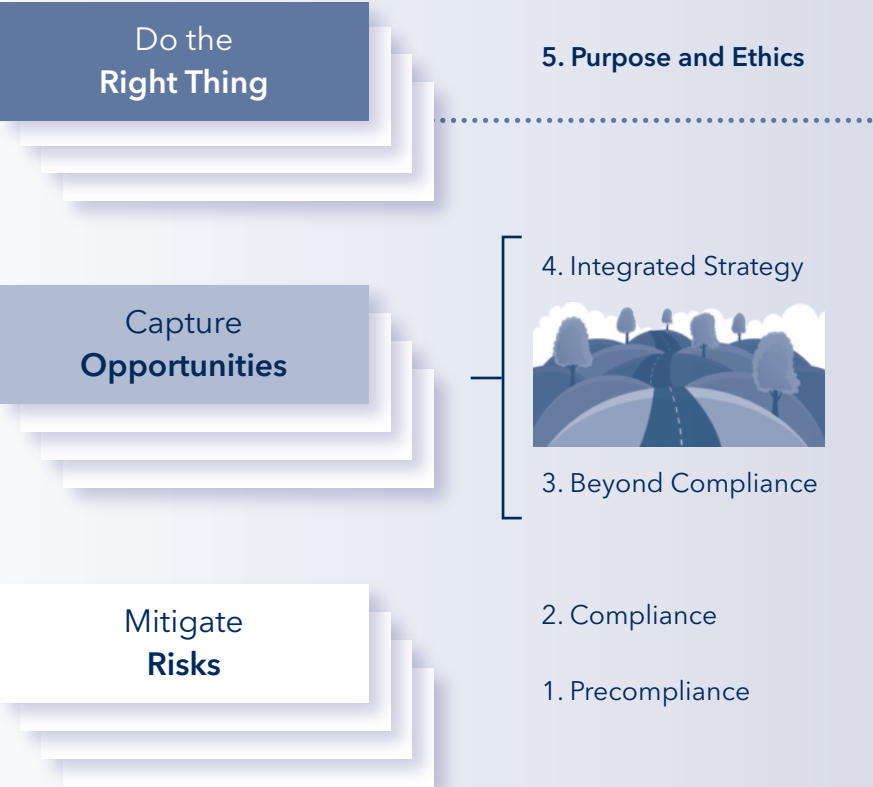
FIGURE 2.  
**Big Three Justifications:  
21st Century**



FIGURE 3.  
Five-stage Sustainability Journey



FIGURE 4.  
Dominant Justifications for Moving to the Next Stage



qualified, respected, and well-treated. But extra environmental efforts and philanthropic provision of dental care to the underserved is given lip service, at best.

A Stage 1 dental office’s actions are illegal, unprofessional, and unsustainable. A Stage 2 office’s practices are legal and professional, but they’re still unsustainable. They may still cause environmental harm with their waste practices, water use, energy sources, and supply chains, but they are not legally required to stop or to be restorative. They don’t feel any stewardship for the oral health and well-being of their communities, since they are not legally or professional bound to do more than look after their paying patients. They are compliant.

Their missions are to grow the business and to improve their bottom lines. Ironically, that makes up 80% of their motivation for moving beyond compliance to Stage 3. They want to capture opportunities to save money and generate more income. Who wouldn’t? Risk mitigation may be a background justification (10%) for doing more, if the dental office starts to sense that its social license to operate may be in jeopardy if its behaviors do not reflect the growing unease of its patients and community about environmental and social issues that require attention. And the do-the-right-thing justification may be starting to stir (10%).

**Stage 3: Beyond Compliance**  
A dental office voluntarily moves to Stage 3 when it realizes that it can save money with proactive, operational eco-efficiencies. It’s in this stage that the practice earns the label “eco-friendly” or “green” as it embraces renewables, energy efficiency, direct



or indirect greenhouse gas reductions, water efficiencies, and waste reduction. Eco-friendly dentistry, through green design and operations, protects the health of natural resources, the health of patients and team members, and the health of the local community.

There are typically four types of low-hanging fruit in the fruit salad of eco-savings: reducing the practice's energy, water, materials, and waste bills. They entice organizations to move into Stage 3 and are all environmentally oriented. The sidebars suggest ways dental offices can save energy, water, materials, and waste as they take the 4 Rs—reduce, reuse, recycle and rethink—more seriously.<sup>2, 3, 4, 5, 6</sup>

Most of the suggestions in the sidebars have the potential to reduce costs. In fact, that was the rationale for moving to Stage 3. For example:

- Using tooth-colored restorations instead of silver amalgams will save a whopping \$37,000 a year.<sup>7</sup>
- Digital imaging and patient charting will save nearly \$9,000 a year and pay for itself in about two years.<sup>8</sup>
- Switching to reusable stainless steel tips and steam sterilization can save dentists \$3,500 a year.<sup>9</sup>
- Replacing disposable chair barriers or bibs with cloth ones can save a dental office \$2,337 a year, since it is not constantly paying to replace disposable items. It's a quick turnaround, too—it takes just 4.9 months to realize savings after investing in the cloth items and a washer/dryer unit.<sup>10</sup>
- Choosing reusable rinse cups instead of disposable paper or plastic cups can save a practice \$178 or more per year.<sup>11</sup>

These benefits arise from efforts to contribute to the environmentally-related SDGs, which is why they are

called “eco”-efficiencies. The Eco Dentistry Association's GreenDOC™ Dental Office Certification Program includes how-to guides, action plans, and worksheets to support eco-friendly initiatives and achieve various levels of certification.<sup>12</sup> As a dental office approaches the end of Stage 3, it may also see benefits of increasing its contributions to the well-being of the local community and society at large. It contributes to at least some of the social and economic SDGs for a sustainable and resilient society, especially the “Good Health and Well-Being” goal.<sup>13</sup>

However, the hard-nosed business case to support undertaking socially beneficial initiatives may be more challenging than the business case for environmentally beneficial initiatives. Fortunately, there are good tools available to help with that. For example, the *Sustainability ROI Workbook* is a free, open-source Excel workbook that allows all potential expenses, benefits and co-benefits of environmental and social initiatives to be taken into account (Willard, 2017). In particular, the workbook helps monetize the potential increase in team productivity and innovation as staff are energized by making a difference on social issues that they care about. This is the secret sauce of sustainability efforts—engaged employees. The workbook also helps users quantify and monetize the value of an improved reputation. A majority of dental patients think companies have a responsibility to help preserve the environment and would switch products and services based on environmental benefits.<sup>14</sup> The workbook helps estimate potential increase in revenue as new patients are attracted to a dental clinic which shares their values. It helps craft a

holistic business case for both environmental and social initiatives and monetizes the benefits arising from doing the right thing, capturing new opportunities, and mitigating new risks.

As dental clinics explore possibilities in Stage 3, they discover the value of moving to Stage 4. As would any business, they come to realize that they may make 31-81% more profit if they simply implemented proven best sustainability-related practices, while avoiding a 16-36% erosion of profit if they did nothing (Willard, 2012). So, the proportions of the three justifications that support the move to Stage 4 are roughly the same as they were for moving to Stage 3: 80% for capture (more) opportunities, 10% for mitigate risks and 10% for do the right thing.

A dental office voluntarily moves to Stage 3 when it realizes that it can save money with proactive, operational eco-efficiencies.

**FIGURE 5.**  
**Energy-saving Ideas**

- Turn lights, computers, and other appliances off when they are not in use, especially at night. Use smart power strips to avoid vampire/leaked/ghost energy consumed by plugged-in appliances, even when they are switched off.
- Use an Energy Star washer and dryer.
- Convert to fluorescent, compact fluorescent (CFL), or LED light bulbs. Turn them off in spaces with adequate daylight.
- Use LCD computer screens and monitors rather than CRTs.
- Invest in solar electric panels and water heaters.
- Use a programmable thermostat.
- Purchase reflective glass (low-E) windows.

**FIGURE 6.**  
**Water-saving Ideas**

- Turn off taps between uses.
- Use low-flow taps and water-efficient toilets.
- Use front-loading washing machines.
- Use dry vacuum pumps rather than water-consuming or water-recycling pumps. A waterless vacuum pump can save as much as 360 gallons of water a day/pump (DeMello et al, 2010). This is especially important in water-stressed regions.

#### Stage 4: Integrated Strategy

By Stage 4, the dental office has transformed into a sustainable business. It re-brands itself as a company committed to sustainability and institutionalizes sustainability factors into its governance systems and policies. It injects sustainability principles into its values and company DNA. It integrates sustainability approaches into its business strategies, policies, and management systems, as encouraged by “Standard Practice for Managing Sustainability in Dentistry” published by ASTM International<sup>15</sup> and the World Dental Federation (FDI) “Sustainable Dentistry Policy”.<sup>16</sup> Cost-efficient, generally recognized sustainable development principles are integrated into day-to-day decision-making and dental service activities.

Stage 4 companies also set long-term goals and short-term targets for their environmental and social efforts. The goals and indicators may be expressed using the consensus-based SDG framework, the science-based Future-Fit Business Benchmark framework,<sup>17</sup> the framework used in the B Corp Business Impact Assessment Questionnaire,<sup>18</sup> or others. Stage 4 businesses publish periodic reports on their progress toward their goals, perhaps using an integrated report format<sup>19</sup> to connect the dots between progress on their environmental and social goals and improvements in their financial results. That is, they not only integrate sustainability into their business strategies, they integrate it into their measurement, management, governance, and reporting systems.

So what’s left? Hasn’t the dental practice gone as far as there is to go on its sustainability journey? Yes and no. What drives any organization to Stage 5 is the emergence of the do-the-right-thing justification. It becomes

the dominant (80%) rationale, with capture opportunities (15%) and mitigate risks of inaction (5%) in the background. In Stage 5, doing the right thing really matters.

#### Stage 5: Purpose and Values

Driven by a passionate, values-based commitment to improve the well-being of the enterprise, society, and the environment, a Stage 5 company helps build a better world because it is the right thing to do. Dentistry is practised ethically, with high levels of quality and safety, in the pursuit of optimal oral health for patients and the community—and more.

About 90% of the behaviors of Stage 4 and Stage 5 dental practices look similar. They both deploy business strategies that respect the health of the environment and community and the ongoing business health of the firm. It’s the motivation that differs. Stage 4 companies “do the right thing” so that they are successful businesses; the co-benefit is that they also do the right things. Stage 5 companies “do the right thing” so that they fulfill their purpose and values; the co-benefit is that they are also successful businesses. The benefits and co-benefits are flipped. The dotted line between Stage 4 and Stage 5 in Figures 3 and 4 denotes this motivational difference.

The values of Stage 5 companies usually mirror founder/CEO values. Some founder-owned and founder-led companies start and end in Stage 5 without ever entering the other four stages. Examples are Seventh Generation founded by Jeffrey Hollander; Patagonia led by Yvon Chouinard; and my publisher, New Society Publishers, founded by Chris and Judith Plant.

Purpose-driven dental practices may be in a similar situation.

For example, Artisan Dental is a purpose-driven Certified B Corp co-owned by Scott Anderson and Dr. Nicole Anderson.<sup>20</sup> Its mission is to “optimize the health and happiness of our patients, team members, suppliers, community, and the environment through exceptional quality care and sustainable business practices.”<sup>21</sup>

Its nine values are love, wisdom, compassion, service, collaboration, creativity, ethical integrity, empathy, and fun.<sup>22</sup> It reaps the eco-efficiencies outlined above<sup>23</sup> and supports local and global organizations with owner and staff volunteer hours, free dental services, and ongoing financial contributions.

How does Artisan Dental justify doing all that it does, especially on the social side? Here are the top three benefits that it realizes from being a Stage 5 company:<sup>24</sup>

- *Trust, loyalty and brand value.*  
Trust is an essential ingredient in customer loyalty. Walking the talk on its mission, purpose, and values builds customer trust with Artisan Dental’s customers and helps attract and retain its best team members.
- *Attracting new customers.*  
Customers are attracted to Artisan Dental because they trust it and share its values. Customers refer family and friends who share aligned environmental and social values to Artisan Dental. Happily, word-of-mouth patient referrals minimize marketing costs.
- *Cost savings and resource optimization.* Artesan Dental saves costs through energy conservation and the thoughtful use of resources.

Notice that cost savings are on their list of benefits, but the most important benefit is an enhanced reputation with its customers and staff whose values

## FIGURE 7. Waste-saving Ideas

Waste is big issue in dentistry. Each year dentists in the United States are responsible for generating:

- 3.7 tons of mercury waste
- 1.7 billion sterilization pouches
- 680 million chair barriers, light-handle covers, and patient bibs
- 28 million liters of toxic X-ray fixer
- 4.8 million lead foils

Here are some healthcare-sector practices to help reduce this environmental burden:

- Use the Blue Bin recycling program to recycle separately the paper and plastic halves of one autoclave bag.
- Install an amalgam separator to separate the fine particles of silver amalgam (generated during restoration finishing, polishing and removal procedures) from waste water and prevent mercury filling material from entering the water supply. Silver amalgam contains mercury, silver, and other metals that can enter the environment. Currently it has been estimated that dentists contribute between 3 to 70% of the total mercury load entering waste-water treatment facilities (Avinash, 2013).
- Recycle autoclave bags in blue bins.
- Replace single-use paper or plastic bibs with operating room (OR) cotton towels. This avoids 5,100 pieces of plastic (back of bibs) sent to landfills each year. After use, the towels are washed in an energy and water efficient washing machine and then sterilized in the autoclave with cassettes of instruments, above.
- Use reusable stainless steel high and low volume, surgical/endodontic suction tips vs single-use disposable plastic.
- Use reusable glass irrigation syringe vs single-use disposable plastic syringes.
- Use biodegradable disposable cups vs landfill-burdening cups.
- If using traditional X-rays, recycle fixer and developer solutions and recycle lead foil from X-rays.
- Use digital radiography instead of traditional film-based X-rays, to avoid the risk of silver and lead pollution and exposing patients to 70 to 90% more radiation from traditional X-rays .
- Use stainless steel prophylaxis cups instead of disposable prophylaxis-containing cups. Purchase prophylaxis paste in tubes or tubs and use only the amount of paste that is needed versus a predetermined amount which is often too much and wasteful/costly.
- Use disposable, plastic/paper barriers only as truly needed.
- Use an environmentally-friendly landscape company that uses natural growth products and no harmful pesticides.

The office complies with local regulations for the handling of its waste (dental amalgam, lead, silver, biomedical, and general office waste). Its staff is professionally qualified, respected, and well-treated. But extra environmental efforts and philanthropic provision of dental care to the underserved is given lip service, at best.

resonate with Artisan Dental's values. That's the essence of Stage 5 companies—they do well because they are purpose driven, not in spite of it.

Stage 5 companies are leaders and networkers. Artisan Dental is an active member of Local First in Grand Rapids,<sup>25</sup> where it shares its passion for people living and working together in a sustainable community. It participates in the MPower Business Champions program<sup>26</sup> for businesses that want to reduce their environmental impact while saving costs and creating a healthier and more engaging workplace and community. They help others discover the benefits of being

Stage 5 companies. They are leaders.

So, there is a strong business case for dental offices to progressively become more sustainable, regardless of where they currently are on their sustainability journeys. The weightings of the three justifications will differ at each stage, but they combine to frame the business case for being better stewards of the environment, society, and the bottom line. Many dentists and their teams entered the profession to make a difference. The business case helps frame why that purpose does not require a sacrifice of their business results. On the contrary, it can be the energizing driver of success. ■

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# Sustainability in Dentistry

## Construction of a New Paradigm

Claudio Pinheiro Fernandes, PhD

### Abstract

Dentistry faces the double challenge of addressing growing global oral health needs at the same time it takes a responsible position with respect to sustaining the environment. A number of world bodies have issued calls for voluntary action to protect the environment, and some of the concerns raised relate directly to the way dentistry is practiced. Most noticeably, the World Dental Federation has endorsed several policy statements. Increasingly, the case for sustainability can be made through science and economics. The ISO 26000 Social Responsibility standard, although broad, may provide a touchstone for sustainable dentistry.

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The dental profession is being challenged by the ever-increasing demand for better oral health care for more people in more countries than ever before. At the same time, we are being required to reduce the demands we place on the earth's finite resources. Our success as healthcare providers will be judged by how well we meet these twin challenges. But we are not alone in this. Such alignment is currently expected in all productive areas due to a growing global public sentiment towards sustainable development issues. And all professional industry now faces scrutiny over the global environmental impact of its production processes.

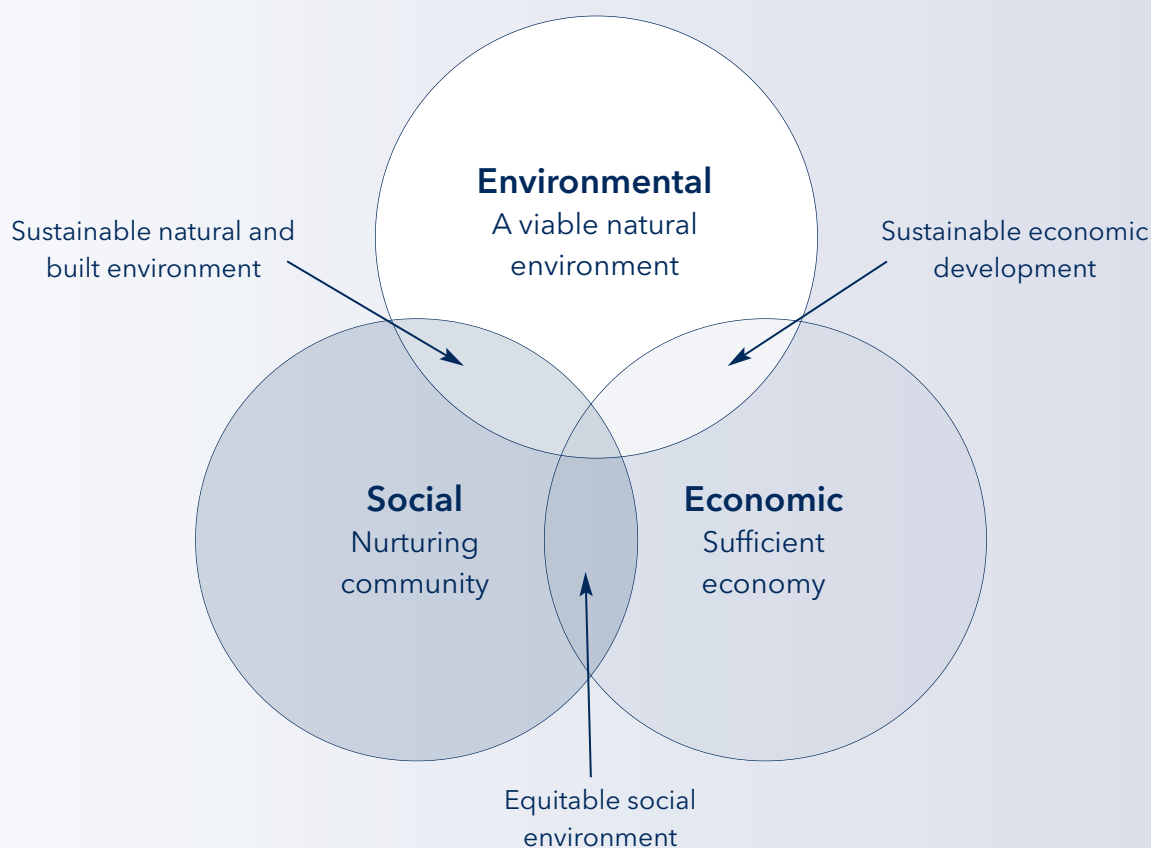
### The Oral Health Challenge

The dental profession struggles relentlessly to improve oral health worldwide. Apart from the clear advances in research and technology, unfortunately, to this date, little success has been attained on a global scale. The Global Burden of Disease Studies funded by The Gates Foundation report that untreated dental decay in permanent teeth is the single most prevalent disease on the planet, severe chronic periodontal (gum and underlying bone) disease the sixth most prevalent, and untreated decay in deciduous teeth the twelfth most prevalent. According to the World Health Organization (WHO), 60 to 90% of children worldwide have dental caries. Unfortunately, oral diseases affect the

most vulnerable individuals: children, elderly, and members of racial and ethnic minorities. The economic burden of these preventable diseases is severe. The indirect costs, such as time away from school and work, amount to more than US \$140 billion per year, ranking the indirect costs of oral diseases among the top ten causes of death. Despite the great relevance, oral health issues often have low power of political influence over other medical areas. The importance of promoting sustainable healthy lifestyles is a challenge recognized by the United Nations and included in multilateral documents such as the UN Agenda 2030 for Sustainable Development, the UN Resolution 71/160 recognizing sports, as a facilitator of health, education, and social inclusion, and the WHO call for a mandate of health literacy in the 2016 Shanghai Declaration.

The largest study ever conducted on the impact of oral diseases on peoples' lives shows that oral diseases are a challenge worldwide. The study concluded that oral health has not improved in the last 25 years. Oral conditions continue to be an important and growing global health challenge. While the prevalence of oral conditions remained relatively stable between 1990 and 2015, the growth and aging of the population led to a dramatic increase in the burden of untreated oral conditions worldwide. More efforts and potentially different

**FIGURE 1. Sustainable development occurs at the intersection of economic, social, and environmental components.**



approaches are needed if international oral health goals are to be achieved by 2020.

Most dental professional education and communication efforts still focus on technical issues and have led the oral health team to certain isolation from mainstream medicine and health care. The result is a worldwide lack of awareness and engagement in wider social, environmental, and political issues. These shortcomings have not been without cost. There are severe implications for oral health providers in issues such as dental manpower, business models for health systems,

and dental-related environmental issues. While some very large countries, such as Brazil, with more than 250,000 practitioners, show a dentist/population ratio of less than 1/1000, Africa has an average dental ratio of 1/50,000. Health-care systems of public or private nature seldom include universal coverage and integration with systemic health, resulting in high risks for fostering even deeper separation from other health professions.

### **The Environmental Challenge**

Environmental impacts have become a routine agenda for nearly all countries around the world, and dentistry is not

excluded from the list of impact activities. Studies show that the water consumed by a dentist is eight times higher than the average proportionally sized household. The reason is due to old-fashioned technologies that run intraoral suction devices based on wet-ring vacuum pumps. Impact of biomaterials is another heavy part of the environmental impact of dental facilities. Several products that perform adequately within the human system may not necessarily do so when released to land and water waste media. The latter currently ranks very high among national and international agenda priorities, giving rise for

international environmental protection institutions to increasingly target dental products as hazardous, the most notorious case being the dental amalgam, directly affected by the Minamata Convention. Dentists are still allowed to use dental amalgam to a greater or lesser extent, according to the national interpretation of the phase-down directive. However, regardless of the interpretation, it is clear that dental amalgam will disappear as a restorative material, despite the efforts of many dental professional institutions more concerned in “business as usual.” This policy leaves a certain feeling that the dentists have not given much attention to the environmental impact generated by the oral health-care activity.

## The Future We Want

Rio+20 talks have set the political agenda for the urgent need of including the sustainable development (SD) dimension in the activities of all sectors of human society. But although a document was agreed upon, there remains much concern about the absence of significant commitment to action. Rather than defining a set of sustainable development goals (SDGs), the text, “The Future We Want,” signed by more than 150 countries, stipulates a path for developing voluntary SDGs, to be led by an open-ended working group in the UN General Assembly. While the overall outcomes of Rio+20 have fallen short of expectations for broad common political commitment and practical measures, health and non-communicable diseases were recognized as essential issues for sustainable development. Evidence and experience have demonstrated that health and sustainable development are closely linked. While

acknowledging the considerable improvements achieved in development and poverty eradication, there has been limited progress made in bringing together historically independent social, environmental, and economic policy at a national and international level.

One of the most relevant outcomes of the Rio+20 meetings was the consolidation of a multi-facet intersection of social, environmental, and economic aspects that puts the sustainable development as the center focus (see Figure 1).

The consensus document obtained at Rio+20 and the ongoing discussion for UN Sustainable Development Goals points to sustainability as not the “best” way, but as the “only” way to survival of the human species.

The UN Sustainable Development Workgroup established in 2012 conducted a massive global effort finalized in 2015 during the United Nations Sustainable Development Summit to present the Transforming Our World: 2030 Agenda for Sustainable Development. Six essential elements were used to elaborate UN’s 17 SDGs (sustainable development goals): Dignity, People, Prosperity, Planet, Justice, and Partnership.

Working through business, culture, education, science and technology, and accounting domains, sustainability will also construct a new paradigm in dentistry. Axioms like the 4Rs: Reduce, Reuse, Recycle, Re-educate will be the basics of this transformation.

## Sustainability Advocacy in Dentistry

The World Dental Federation (FDI) is the most comprehensive system of organized dentistry in the world. In

over 100 years FDI has a membership composed of National Dental Association members in more than 180 countries and represents more than one million dentists worldwide. This overarching global institution has taken the challenge and is working to face the needs of more sustainability in the dental world.

Historically, FDI has reiterated its commitment to the principles outlined in the 1992 Rio Declaration on Environment and Development, and of Agenda 21, stating that human health and well-being must be a central tenant of any global agreement. The World Health Organization recognized the relevance of oral health conditions in a World Health Assembly resolution in 2007 and

## FDI Policy Statement: Sustainability in Dentistry

*ADOPTED by the FDI General Assembly, August, 2017, in Madrid, Spain*

The policy statement is the most important guidance document for the dental community to date. Following up on several years of maturing negotiations, the FDI Dental Practice Committee has prepared a document that defines, structures, and guides the dental community into the new paradigm of sustainability in dentistry. Composed of 4 sessions: Context, Definitions, Principles, and Policy, FDI leads the oral health profession to interact with society at large to meet people’s expectations of increased access to health while reducing the impact on natural resources.

adopted an action plan for oral disease prevention (WHA60/R17). The Political Declaration of the High Level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases (NCDs), adopted in New York on 19 September 2011, recognized that oral diseases pose a major health burden for many countries and share common risk factors with NCDs, notably unhealthy diet (particularly high sugar consumption), tobacco and harmful alcohol use, related to poverty and social inequalities. Furthermore, FDI applauded the Political Declaration on Social Determinants of Health, adopted in Rio de Janeiro on 21 October 2011, confirming Article 16.4 which identifies important policies needed to achieve both sustainable

development and health equity through acting on social determinants. FDI has also given full support to item C.42 of the Objectives of the Rio+20 conferences: “Poverty eradication and enhancement of the livelihoods of the most vulnerable deserve priority in measures promoting a green economy transition.”

The FDI has decisively contributed to the United Nations Environment Programme’s (UNEP) legally-binding treaty on mercury—the Minamata Convention—advocating for a reduction in the use of dental amalgam (versus a ban) through increased attention to dental prevention and health promotion, increased research and development on alternatives, and best management techniques for amalgam waste.

However, although the Minamata Convention gained massive recognition in the public news, very little has been said about the oral health perspective. The expectation for a phase down and of changing dental amalgam for a mercury-free restorative material has been nearly the only quote in this regard, even in some of the professional dentistry media. This shows how much work we need to do in order to build a more proactive image for dentists worldwide. And that is not all. The UNEP secretariat is working with the secretariats of Strategic Management of International Chemicals Management (SAICM) and other standing Conventions (Basel, Stockholm, Rotterdam, and Montreal) to prepare INC briefing documents on



# SUSTAINABLE DEVELOPMENT GOALS





other potentially hazardous materials. Dental composite resins have already been identified as potentially hazardous due to the inherent BPA rest composition from original petrochemical derivatives.

UNEP's initiatives regarding dental amalgam and composite resins have taught us an important lesson: Dentistry needs to be preemptive, take responsibility, and meet social demands for reducing the strain on natural resources and yet promote good oral health for all. Adopting sustainable development practices as a backbone for change to improve economic, environmental, and societal aspects related to dentistry will be the baseline of our future.

The dental profession is an important part of human life and must take responsibility for integrating SD goals into daily practice and underwrite a shift toward a green economy. Thus, in view of the increasing importance of external policies that examine dental technologies and materials and pass judgment on their sustainability and safety, it is time to develop a working agenda that will position us to effectively promote measures to improve oral health and maintain patient safety in a timely and constructive manner. This presents a unique opportunity for dentists to take a leadership role regarding the health community, public authorities, and the general public, for guiding sustainable development practices in all oral health-care segments.

At the same time, we see a generalized growth of political, economic, and social instruments that converge to create a favorable environment for change and coping

with this difficult situation. This new context can be seen in the results of the 9th Global Conference on Health Promotion, which brought together government leaders and United Nations organizations in Shanghai at the end of 2016. The Shanghai Declaration pledges to make bold policy choices for health, emphasizing the links between health, well-being, and the UN's 2030 Agenda for Sustainability and its Sustainable Development Goals. The statement highlights the need for people to be able to control their own health—to be in a position to choose a healthy lifestyle. Noting the need for policy action in various sectors and regions, the document highlights the role of good governance and health literacy in improving health, as well as the important role played by municipal authorities and communities.

## Sustainability Science

Science, technology, and innovation have long been recognized as the basis for socioeconomic development. They are also core contributors to sustainable development and to meeting the SDGs. The UN has called for a “Seat for Science” on the high-level political forum that deals with the UN 2030 Sustainable Development Agenda, to ensure that “science is not just an observer but an advisor to policymakers.”

A report conducted by Elsevier in collaboration with SciDev.Net examined the status of sustainability science as a research field, part of a broader, on-going effort to provide more evidence and analysis on the role of science, technology, and innovation. Sustainable development is viewed as an umbrella term that covers research, programs, and collaborative efforts contributing to sustainable development and

“sustainability science” as the underlying research of sustainable development. The nature of sustainability science means that it has the potential to contribute to virtually every target listed under the 17 SDGs. The six essential elements for the UN's 17 SDGs were used as the reference research themes for categorizing keywords within sustainability science—Dignity, People, Prosperity, Planet, Justice, and Partnership. The keywords were then used to identify publications relevant to each theme as according to the Scopus subject areas, a recognized research analytics system.

Key findings included:

- Sustainability science is a field with a high growth rate in research output.
- Research output in sustainability science attracts 30% more citations than an average research paper.
- Research in sustainability science is highly collaborative.
- Sustainability science is less interdisciplinary than the world average.
- Health-related sustainability science was highly represented in the report.

The research output is both global and collaborative by definition. For institutions, the results may be used to identify research strengths within the themes in sustainability science, potential collaborators in academia and other sectors, and, more importantly, to identify gaps between research topics and societal needs. For policy makers, it is important to

understand that the development of science, technology, and innovation is critical to sustainable development. Policy that stimulates research to address the challenges in sustainable development is essential. It is equally critical to include contributors from the research community in the policy-making process.

In the coming years, science will need to play an important role in the provision of the data, information, and knowledge that is required to facilitate the successful implementation of the 2030 Agenda for Sustainable Development and the associated SDGs. The 2030 Agenda explicitly recognizes that sustainability challenges are fundamentally inter-related. Focusing exclusively on single goals will therefore not be effective. All actions need to be assessed for policy coherence across the goals. This means that science and society need to be aware of the broad SDG spectrum to find the best pathway to progress towards all the goals.

Finally, strong knowledge partnerships where equal weight is given to academics, decision-makers, practitioners, business leaders, civil society and/or others might be the most efficient way to guide SDG implementation on a regional and global level.

## Sustainability Metrics and Economic Perspectives

The world is currently facing extremely difficult challenges to sustainable development and environmental management. The current global financial and economic crisis exacerbates the situation. High

water and energy prices negatively impact the production processes. Expensive logistics, complex regulatory aspects for waste management, low-tech practices, and lack of sustainable development education policies are some examples of areas that need to be faced in an international collaborative perspective.

Such complexity induces operational risks and seems to indicate a reduced attractiveness for stakeholders to take the sustainable step. A major factor for changing this perspective has been the development of accounting sustainability metrics. Through well-established standardized metrics of performance, the impact of a particular product, service, or process can be measured and reported. The integrated sustainability report has become the engine behind a well-propagated anecdotal image that “only accountants can save the world.”

The benefits of adopting a sustainable development and social responsible approach are not only to meet with societal expectations, but it may also be good business for all the dental-related community. The oral healthcare system, for example, stands to gain from integrating sustainable development International Standards Organization (ISO) standards into their business from improved competitiveness, as this allows savings associated with increased productivity and resource efficiency (lower energy and water use, decreased waste, and recovery of by-products); enhanced reputation, greater public trust and “social license” to operate; created innovative working environment; enhanced employee attraction, loyalty, participation, morale, and retention as it improves health and safety; and reduced or prevented potential conflicts with consumers about products or services. Also industry,

trade, and other dental-related businesses should look into sustainable development and corporate social responsibility to improve their bottom line. Many business analysis resources such as Goldman Sachs, Deloitte, Interface Inc., McKinsey, PriceWaterhouse Cooper, *Harvard Business Review*, *Economist Intelligence Unit*, and others, already recognize that businesses can improve short- and long-term profitability through the adoption of sustainable practices in the areas of operational efficiency of natural resources, energy, management of human resources, financial operations, marketing, and communication and reporting, as well as through collaboration with NGOs and governments.

## ISO Standards: A Roadmap for Solutions

A well-structured roadmap of solutions that meet both the requirements of business and the broader needs of sustainable development can be found in the ISO library of international standards. The international standard ISO 26000—Social Responsibility—is the broadest one and represents an over-arching approach to sustainability, since it enables organizations of all sizes to progress in all three dimensions of sustainable development of the environment, economy, and society. The benefits for the dental community of integrating social responsibility into their business are mainly from:

1. Improved competitiveness, as it allows savings associated with increased productivity and resource efficiency (lower energy and water use, decreased waste, and recovery of by-products)

2. Enhanced reputation, greater public trust and “social license” to operate
3. Created innovative working environment
4. Enhanced employee attraction, loyalty, participation, morale, and retention as it improves health and safety
5. Reduced or prevented potential conflicts with consumers about products or services

The ISO Guide 82:2014, Guidelines for addressing sustainability in standards, for example, is the document intended to provide ISO Technical Committees (TCs) and Subcommittees (SCs) with guidance on how to incorporate sustainability into the development and revision of ISO standards.

Promoting a sustainable development agenda is the bridge between environmental, economic, and social goals; between governments, civil society, and business; between science and policy; and between policy and action. The oral health community needs to provide a powerful forum for guiding a prompt and sustainable response. To face this challenge, key partnerships need to be drawn among practitioners, dental industry, science, technology, and education for using ISO resources of sustainable development standards. A well-structured roadmap of solutions that meet both the requirements of business and the broader needs of society, such as the sustainability process can be found in the ISO international library of standards. Technical standards are indeed a map of solutions for different areas, and can be implemented in several steps. ISO Central Secretariat has committed to sustainability through several Technical Committees experienced with developing

It is time to develop a working agenda that will position us to effectively promote measures to improve oral health and maintain patient safety in a timely and constructive manner.

international standards as a framework for sustainable development, such as product manufacture, energy conservation, environmental safety, management systems, carbon footprinting, water footprint, and social responsibility.

### Call for Action

The quest for more meaningful practices towards sustainability in the world of oral care is going to be a journey. This call for action offers the means for accomplishing it, but it needs to build up strength and competence in the different dental segments. Participants should be stakeholders, sensitive to the vision and interested to commit to the journey. Included among these are:

- Industry: dental equipment, dental consumables, hygiene products, supply chain
- Service: trade, transportation, education (undergraduate, post graduate, and continuing education), clinical practitioners, oral health insurance plans
- Science, technology and innovation: research institutes, specialized media
- Government: public health, regulators

This new paradigm requires a multilateral initiative for dental, education, and sports stakeholders to raise awareness of the importance of oral health to life quality, mobilize social power and increase the impact of oral health issues on government policies at the national level.

The key proposed actions are:

1. Add the dimension of sustainability as a key argument for defending preventive-based models for oral health care as it reduces the impact on natural resources as well as the energy, water, and carbon footprints
2. Add the dimension of sustainability in the global R, D, & I agenda, including both public and private sectors, to develop and commercialize replacement or new alternatives to hazardous dental materials that improve that of current available alternatives materials alongside expanded preventive approaches
3. Adoption of environmentally sound lifecycle management for dental products

This allows savings associated with increased productivity and resource efficiency; enhanced reputation, greater public trust and “social license” to operate; created innovative working environment; enhanced employee attraction, loyalty, participation, morale, and retention as it improves health and safety; and reduced or prevented potential conflicts with consumers about products or services.

4. Develop and implement a model for sustainable development platforms for all dental segments
5. Encourage all dental educational institutions to include a sustainable dentistry dimension in the curriculum, including preservation of natural resources, operational efficiency of energy, safe handling of hazardous inputs, effective waste management, and appropriate disposal of dental materials and other unserviceable products
6. Implement ISO 26.000 values to the dental clinical practice
7. Develop policies and strategies to support effective and sustainable “green dentistry” initiatives which emphasize sustainable development and social responsible practices

The focus must be on treating the burden of oral disease in the safest, most efficient, and effective ways we can, and with the least possible environmental impact. How will we practice across the globe in a way that makes us all proud?

It is time for people’s engagement and participation, not only as business people but also as human beings. We need to change the way we think and work. Dentists should collaborate with key stakeholders to conserve earth’s resources without diminishing the importance of promoting safe, effective and affordable oral health care for all. ■

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# Full Sustainability in Dentistry

Robert “Tito” Norris, DDS

## Abstract

A sustainable dental practice is much more than recycling and energy conservation. The physical, emotional, and professional spirit of the dentist and the office team must be high for the duration. Nine dimensions of this full sense of dental office sustainability are identified: physical plant, physical and mental health, continuing professional growth, positive work environment, long-term employee participation, community service, financial sustainability, and job satisfaction.

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In the field of dentistry, sustainability can mean various things to different people. In this article I will explore sustainability as it relates to nine different areas of our lives as dentists.

## The Physical Plant

*You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what difference you want to make.*

—Jane Goodall

The aspect of sustainability that probably enjoys the highest “top of mind” awareness is environmental sensitivity in where and how we practice dentistry. When designing and building or finishing out office space, there are a number of factors which will contribute to energy conservation, environmental stewardship, and an inviting, productive workplace. If you choose to embrace these tenets, then the U.S. Green Building Council’s Certification in Leadership in Energy and Environmental Design (LEED Certification) can be pursued. A few considerations include a viable recycling program; high-efficiency HVAC units; insulation value of walls, ceilings, and windows; natural lighting to all rooms; bicycle rack and shower; low-flow sinks and toilets; LED lighting; low-VOC or zero-VOC paint; flooring of recycled materials; and a solar energy-generation array. Being paperless, and using digital scanning versus impressions are just two of

numerous other sustainable practices within a dental office. My experience in constructing a LEED-Certified office in 2010 was that going to these measures increased construction costs by approximately 10%. However, energy savings and long-term increased productivity in this enhanced work environment has repaid this initial investment.

## Physical Sustainability

*Health is hearty, health is harmony, health is happiness.* —Amit Kalantri

Perhaps one of the least-considered aspects of sustainability is our own personal physical health. Dentistry is a physically taxing profession. Therefore, discovering and routinely engaging in activities which counter-balance the physical strain that dentistry puts on our bodies is paramount to maintaining one’s ability to continue practicing dentistry as a long career. Elements of a well-rounded health program include regular low-impact cardio-vascular exercise such as cycling, swimming, hiking, rowing, or cross-country skiing to maintain a healthy heart. Weight training helps build muscle mass and strengthens our bones. Frequent and targeted stretching or yoga are equally important to lengthen and strengthen the numerous muscles which undergo tenuous isometric

contraction as a result of our profession. Regular therapeutic massages can also alleviate muscular knots and tension. As doctors, we should be well-versed in nutrition and moderation. We are in a unique position to set an example of a healthy lifestyle to our team members, our colleagues, our patients, and our community.

## Mental Health Sustainability

*If you build it, they will come.*  
—Ray Kinsella, Field of Dreams

One of the buzz words of my generation is “balance.” Lumberjacks know that working hard is important to get the job done. However, they also understand that taking rest and sharpening their saws is equally important to success. As dentists, we are responsible for taking care of our patients, taking care of our team

members, and taking care of our family members. This demands an incredible amount of energy and dedication, and the only way to be able to fulfill these responsibilities is to take care of ourselves first.

It is indeed possible to work oneself to death. So, in order to find balance, taking regular breaks from our practices to “sharpen the saw” makes sense. This is important time to replenish ourselves mentally by engaging in relaxing leisure activities, spending quality time with our loved ones, and setting plans and goals. Taking this time regularly and frequently also contributes to the sustainability of relationships with our loved ones. The frequency of these vacations depends on a person’s individual needs and comfort level. Some may find that a quarterly week of holiday is sufficient; whereas, others may feel that a monthly retreat is more appropriate for their needs. One strategy is to plan out each year’s vacations in advance, and then schedule patients around those times.

## Sustainability via Continuing Education

*Once you stop learning, you start dying.*  
—Albert Einstein

Only through continuing education are we able to keep up with technology upgrades and changes. Attending local, regional, and national meetings allows us to stay on the forefront of technology, and allows us to offer our patients the most advanced techniques, materials, equipment, and procedures. Dentists do not have the luxury of being static in their practice. If we are not moving forward, learning, growing, and improving, then we are actually moving backwards in relationship to our profession.

One of the most powerful vehicles for staying abreast of changes in our profession is active participation in a study club. Study clubs can be local or national, loosely organized or highly structured, online or face-to-face. One commonality they share is that we only get out of them what we put into them. My experience is that in every study club “sub-specialists” exist. Certain participants will have particular interests and areas of expertise that they are passionate about and are willing to share. Consequently, all members of the study club then become highly educated in an aggregation of areas of dentistry including technology, marketing, management, and a wide variety of clinical skills and techniques.

## Sustaining a Positive Work Environment

*Life is short... Work where you are continuously accepted, respected, appreciated, encouraged, inspired, empowered, and valued.* —Ty Howard

Developing and maintaining a team culture founded on admiration, appreciation, and respect is one of the most challenging tasks that dentists encounter. Setting about such a task must start with the hiring process. The adage “Hire for personality and train for skill” has served me well over the last 20 years, as I cannot train an employee how to be charismatic, thoughtful, empathetic, or compassionate. These qualities must be deeply embedded within long before the person applies for a position in a dental office. A question I’ve asked myself when interviewing a potential team member is, “Could I ride in a car for eight hours with this person?”

When designing and building or finishing out office space, there are a number of factors which will contribute to energy conservation, environmental stewardship, and an inviting, productive workplace.

In a nutshell, I'm looking for an attitude of gratitude.

Once a potential employee has passed the screening process and working interview, she or he must agree to our three rules of conversation in the office before a position is offered. These three rules are as follows:

- Is my conversation true?
- Is it kind?
- Is it helpful?

As leaders, we are all painfully aware that gossip and negative energy destroys teams. By committing to these three tenets, employees are giving their teammates permission to call them out on it immediately by simply holding up three fingers, and agreeing to hold their teammates accountable for the three tenets by doing the same.

Another idea for maintaining a cohesive team is to have all team members read an inspirational or motivational book each quarter. There are literally thousands of these books available in multiple media. In our office, team members are monetarily rewarded for submitting a one-page book report describing how they benefited from reading the book and what concepts from the book they would like to see implemented. An additional tool for developing a rock star team is regularly scheduled, off-site, team-building retreats. These events can be coordinated by a professional who has experience in team-building activities and who can design exercises to engage employees in areas such as trust, respect, and service. An important lesson employees can gain from these retreats is an understanding and appreciation for each other's vital role in the office, and to encourage communication and synergy.

Dentists do not have the luxury of being static in their practice. If we are not moving forward, learning, growing, and improving, then we are actually moving backwards in relationship to our profession.

### Sustaining Long-term Employees

*Once you have experienced excellence, you will never again be content with mediocrity. —Thomas Monson*

In addition to having an overall work environment which is sustainable and healthy, having a sustainable team of highly skilled professionals who regard their positions as careers, and not just jobs, is equally important. Investing in long-term employees means developing loyalty by providing continuing education and true ownership in the business. It means offering them a comfortable living wage with health-care benefits, a performance-based bonus system, and a meaningful retirement plan. Our bonus system has worked well for us for many years. There are two components to our system: (a) monthly office financial goals and (b) quarterly individual performance goals. In each month of the quarter, if the office financial goal is met, then 50% of the bonus is awarded to team members carte blanche. The other 50% is held back until the end of the quarter after performance reviews.

Employees review themselves and grade themselves out of a possible score of 100%, with particular attention given to improvement opportunities identified during their last quarterly review. Their manager also reviews them, and these two scores are averaged. If the resultant score is 90%, for example, then as an individual performance-based bonus, the employee receives 90% of their share of the monies that were held back for that quarter. It is interesting to note that most of our office employees score themselves lower than their manager scores them.

### Community Karma and Community Service

*The best way to find yourself is to lose yourself in the service of others. —Mahatma Gandhi*

One of the office activities our team members appreciate most is our quarterly community service projects. We affectionately refer to this as Benevolent Marketing, although it is so much more than that. During an annual planning meeting, we choose four charitable organizations per year to which we will donate one day's work as a team. Examples include the local food bank, homeless shelter,

Habitat for Humanity, Rape Crisis Center, and Wounded Warriors Center. During these “volun-teaming” days, we close the office and participate in work that particular charity needs done. Participation is mandatory, and, therefore, employee hours are compensated. It is incredibly rewarding to serve others less fortunate, and it is a startling reminder of just how fortunate we are to work indoors in the comfort of a temperature-controlled, pleasant-smelling environment. A good deal of team-building, communication, understanding, and forgiveness occurs during these outings, and the team inevitably returns from them with a deeper appreciation for their careers, for their life circumstances, and for each other. These community engagement opportunities are great moments to share via social media, and this really helps build a stronger community karma.

## Financial Sustainability

*Customer satisfaction is worthless.*

*Customer loyalty is priceless.*

—Jeffrey Gitomer

In order to sustain ourselves as dentists and business owners we have to continually attract new patients to

Taking pride in your work leaves you with a sense of accomplishment and fulfillment of a job well done. It also contributes to a sustainable dental practice, as quality work is less likely to need replacement and repair in the future, thus resulting in happy patients who refer their family and friends.

our offices. Of course, the best referral comes from fired-up, existing patients who can't contain their enthusiasm over how gently, warmly, skillfully, and professionally they were treated in your office by your entire team. This type of endorsement conveys with it a significant element of trust, as long as we perform up to these expectations. In today's competitive climate, an online presence is also critical, as this is the other major source of new patients. In addition to having an attractive, informative, easily navigable website, the quantity and quality of online reviews are extremely important. It is vital to train your team to ask appropriately for these reviews. Here's an example: “If you are happy with the service you received today, we'd be honored if you would share your experience with others by posting a review online.” Then make it simple for them to do so by offering them a tasteful card with a link to your review page, or send them a follow-up e-mail or text message with the link. You will be amazed at the responses you will receive if you ask appropriately and make it easy for them.

## Job Satisfaction

*Do what you love and you will never work a day in your life. —Anonymous*

Providing quality care is a major element in a dentist's overall job satisfaction. Taking pride in your work leaves you with a sense of accomplishment and fulfillment of a job well done. It also contributes to a sustainable dental practice, as quality work is less likely to need replacement and repair in the future, thus resulting in happy patients who refer their family and friends. Working with a team of skilled professionals takes a lot of the burden off the dentist and bolsters the confidence that your team is going to care for your patients as if they were family. Performing high-quality dentistry eventually results in community acclaim and peer respect and admiration. This positive feedback loop encourages us to continue to strive harder and hold ourselves to an increasingly higher standard of care in our work. ■



# Attaining and Strengthening Sustainability in Your Dental Practice

## A System-Oriented Thinking, Approach, and Realization

Wilhelm Wang, MD

### Abstract

Issues inherently associated with practice of dentistry, whether they are socially influential, environmentally significant, or financially consequential, present both risks as well as opportunities to dental professionals and dental service organizations around the world. Increasingly, various national public health authorities and regional dental professional associations have recognized the importance for dental professionals to address issues related to sustainability and pledged calls to actions within the dental industry. Development and subsequent adoption of ASTM E3014-15, *Standard Practice for Managing Sustainability in Dentistry*, the first and single recognized, consensus-based national standard that comprehensively covers considerations for, and relevant issues pertinent to, managing sustainability in dentistry, marked a prominent milestone and offered a practical management framework for those who are pursuing sustained performance, whether it is in a single dentist's own practice or it is for a multi-facility dental service corporation. From establishing the context in which dental service organizations (DSOs) might choose to operate to demonstration of continual improvement, this article presents a synopsis of the ASTM E3014 standard, discusses system-oriented thinking and approach to managing risks and opportunities, as well as highlights key management practice elements and requisite operational controls in provision of dental care and services.

Sustainability is a big word and a mouthful to say. But, as you will soon see, it does come in all forms, sizes, and shapes. Specifically, what does sustainability mean to you as a professional dental practitioner or as a head of an oral healthcare service organization? It is all in the eyes of beholders.

From an academic perspective, “sustainability” has been well discussed, interpreted, and applied in a number of ways. As Merriam-Webster has it, sustainability is derived from being “sustainable,” or, of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged.

Around the world, the most widely accepted definition derived from the United Nation World Commission on Environment and Development or the Brundtland Commission in 1987: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” As a direct derivative of this understanding, a well-regarded institution such as University of California, Berkeley has defined sustainability as “the ability to meet the needs of the present while living within the carrying capacity of supporting ecosystems and without compromising the ability of future

generations to meet their own needs.” U.S. Environmental Protection Agency declares that “to pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations.” Finally, it is with interest to see that sustainability has been defined to be “... maintaining or improving the quality of human life while living within the carrying capacity of supporting eco-systems,” as per the Australia Dental Association.

At the turn of the new millennium, executives from ten financial institutes gathered together to discuss how sustainability can pose as a risk and, at the same time, present as an opportunity for their investments and holdings. Their discussions led to the establishment of the Equators Principles (EPs) in 2003 which set forth a collection of voluntary codes of practices and a risk management framework for assessing and evaluating sustainability-related risks in investment projects and decisions.

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Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Today, adopted by 92 Equator Principle Financial Institutions in 37 countries around the globe, the Equator Principles are recognized as the preeminent benchmark for recognizing and managing environmental and social risks in the investment decision-making process. Fundamentally, the EPs are addressing issues related to environmental and social impacts “to ensure that the projects we finance and advise on are developed in a manner that is socially responsible and reflects sound environmental management practices...” It is with great interest to note that an Inquiry Working Paper by United Nations Environment Programme (UNEP) in 2016 challenged the inherent ability and effectiveness of the Equator Principles, as well as other similar private voluntary mandates such as Global Reporting Initiatives (GRI) or the Carbon Disclosure Project (CDP), to “create substantial changes with

respect to sustainability impacts of businesses”; the same study, notwithstanding, indicated that the Equator Principles do “hold the promise and potential to contribute to social and environmental sustainability.”

After all, sustainability is in the eyes of (markedly different) beholders! The dental profession is certainly committed to promoting better oral health for all. That being said, what is it expected to know and do about sustainability? To understand how sustainability can affect the dental industry as an entity as well as individual dental practices is to, first, look inward to examine what activities and associated impacts are involved in what is offered to patients; and, second, deliberately and systematically evaluate the risks and opportunities associated with how our products and services are delivered.

### What Exactly is System-Oriented Thinking?

Mr. Scott Adams, famed creator of the *Dilbert* comic strip, has a keen and accurate take on system-oriented thinking when he recognized and pointed out that “...With a system, you are always scanning for any opportunity.” So what is a system after all?

In management terms, a system is a set of interrelated or interacting elements. Simply put, a system is a collection of various functional and organizational parts or process of an entity or an operation known as elements. For instance, an element of a system may include an organization’s structure, defined and delegated roles and responsibilities, the planning and operation activities, operation performance evaluation and improvement, or other management processes. Incidentally, process is defined as “a set of interrelated or

interacting activities that transforms inputs into outputs.” Consequently, a dental practice and operation systems may generally be described as a set of interrelated or interacting dental practice activities and operation procedures that transforms inputs into outputs.

When a dental professional is starting up a private dental practice, not only does he or she need to have proper levels of competency, requisite permitting or licensing, and adequate instrumentation and equipment, he or she must also set up operating procedures governing how materials and consumables are to be ordered and refilled, how are cleanliness of the clinic and sanitization of dental tools to be assured, how biohazardous wastes are to be disposed of, what insurance must be secured (or risks hedged), and how are patient records to be maintained and services to be invoiced. These are exactly some of the essential elements of a dental practice and operation system. Certainly, one may choose to outsource or seek contracted services on many if not all of these associated activities pertaining to a dental practice operation. Guess what? Outsourcing and contracting, as a category of activities, is very much an element of a dental practice and operation *system* and must, too, be managed.

Moreover, in order to operate your dental practice or service establishment sustainably, the system must also consider, function, and delivers what is consistent with the expectations of pertinent interested parties, including financial investors and sponsors, with no or only transient and reversible adverse effects to the environment while enhancing

## How management view and translate sustainability into actionable agenda and performance metrics.

(Examples drawn from internal research and clientele learning)

### Jabil Circuit, Inc.

Based in Saint Petersburg, Florida, Jabil is an electronic product solutions company providing comprehensive design, manufacturing, supply chain and product management services. Operating from more than 100 facilities in 29 countries, Jabil employs more than 180,000 people and generates an annual revenue of more than US \$19 billion in fiscal year 2017. At Jabil, sustainability means “connecting people, places, and partners to empower positive changes, with a commitment to improving employee safety and well-being, mitigating environmental impact, and positively impacting communities.” Specifically, Jabil management has established objectives and goals in four aspects of its operations:

- Mitigating environmental impacts
- Improving employee safety and well-being
- Positively impacting communities
- Reducing supply chain risk

[www.jabil.com](http://www.jabil.com)

### The Weir Group, PLC

The Weir Group is a diversified engineering and manufacturing conglomerate with global headquarter based in Glasgow, UK, providing a wide range of products, solutions, and services to the mineral, oil and gas, and power industries. As of end of 2017, Weir Group generates more than US \$3.5 billion in annual revenues and employs approximately 15,000 people operating at 214 facilities in more than 70 countries. Envisioning itself to be “the most admired engineering business in our markets,” Weir Group executives recognize that sustainability is a multifaceted discipline and focus its sustainability efforts on six priority areas with established high-level performance metrics underpinning each area:

- Health and safety
- Product and technology
- Environment
- Community
- People
- Ethics

[www.global.weir/about-us](http://www.global.weir/about-us)

### Wal-Mart Stores, Inc.

During its Net Impact Conference in 2015, management at the household-name retailer, Walmart, announced a new ten-year management vision to create “shared values” for its business and society, and placed sustainability on the same organizational platform with opportunity and community. Explicitly, management at Walmart established three particular goals addressing its sustainability issues:

- Reduce energy intensity and emissions
- Eliminate wastes
- Improving sustainability in value chains

<https://corporate.walmart.com/global-responsibility>

the livelihood of the communities in which it operates. Contrary to many current definitions within the dental industry, it is important to discern and recognize that managing sustainability in dentistry does not exclusively deal with environmental issues. In certain situations, people take a restrictive view to define and qualify “eco-dentistry” or “green

dentistry” which often only focus on resource conservation.

To assert sustainability, all of the financial outcomes, environmental consequences, and social responsibilities associated with dental operations will need to be equally taken into consideration. Thus, a

sustainable dental practice or operation deals with all pertinent issues laid out by people and parties who have an earnest stake or interest on the dental practice and associated activities. This is a much larger matter than just resource consumption or waste generation. Whether one is starting up a brand-new individual dental practice or establishing a dental service operation with multiple point-of-service dental clinics, system-oriented thinking calls for comprehensive identifications of issues pertaining to operation, beckons thorough evaluations of associated risks and opportunities, and delineates defined and disciplined ways of managing activities to ensure actions are getting delivered properly, goals are realized

progressively, and performance are improved *sustainably*.

### Commitment and Taking the System Approach Managing Sustainability in Dentistry

Development and adoption of ASTM E3014–15, *Standard Practice for Managing Sustainability in Dentistry* marked a prominent milestone and offered a practical management framework for dental professionals who are pursuing sustained performance, whether it is for an individual dentist's own practice or for the operation of a multi-facility dental service corporation. As stipulated in the Significance and Use section of the standard, this standard “offers a concerted approach to managing

social, economic, and environmental aspects of dental practice; stipulates minimum sustainability considerations and requirements; and provides a framework for embedding sustainable development issue management into day-to-day decision making and dental service activities.”

Aligned with benchmarking international standard format, ASTM E3014 defines who/what a Dental Service Organization (DSO) is within its scope of applicability and structures standard management practices in seven sections or clauses. Each addresses certain requisite elements of the subject system:

1. Understanding the context of dental service organizations
2. Management system for sustainability in dentistry

FIGURE 1. Context of Dental Service Organization 5.1; Management System for Sustainability in Dentistry 5.2





3. Leadership and commitment
4. Organizational roles, responsibilities, accountabilities, and authorities
5. Planning
6. Sustainability in dentistry objectives and planning to achieve them
7. Support
  - Dental service operation
  - Performance evaluation
  - Internal audit
  - Review
  - Improvement

First and foremost, it is profoundly imperative that establishment of any management system must be rooted in a well-defined context of organization with demonstrated leadership and commitment. Experience has shown that, otherwise, the resultant management system would inevitably fade into obscurity with no credibility or standing. Context of a dental service organization is developed by (a) identifying and examining external and internal issues pertaining to the purpose and ability of the DSO to achieve intended outcomes; and (b) understating the needs and expectations of its stakeholders. Collectively, developing the context (of an organization) is to cognize fundamentally what the DSO is and what does the DSO set out to deliver and accomplish.

A descriptive figure distinctly outlines the interrelationships of various clauses and associated management system practices as they correspond to the four revolving phases of a model management system—Plan-Do-Check-Act—is provided

Contrary to many current definitions within the dental industry, it is important to discern and recognize that managing sustainability in dentistry does not exclusively deal with environmental issues.

in the Appendix of ASTM E3014-15 and is reproduced here (Figure 1).

Having the context systematically demarcated and commitment resolutely in place, the second most critical element of a well-structured system managing sustainability in a DSO is to assess and develop actions to address pertinent risks and opportunities associated with its activities and operations. In particular, E3014-15 stipulates that “...When determining the risks and opportunities that need to be addressed, the dental service organization shall also include considerations for risks associated with organizational integrity, inclusivity, transparency, and stewardship as well as opportunities related to the practice of evidence-based dentistry.” This particular management system requirement, for the very first time, genuinely and assertively brings about and bolts together recognized benchmarking sustainability management approach with demonstrated state of science in dental practice.

Each of the subsequent clauses further delineates specific management practices and activities that ought to be taken or maintained. Consequently, requirements on management review and improvement (Clauses 5.7.9 and 5.7.10) provide input back to the planning activities. Finally, it is also noted with interest that just nine specific management activities listed below where records,

also known as “documented information,” are to be maintained:

- Scope
- Planning outcomes
- Objectives
- Competence
- Certification, accreditation, regulation
- Documented information of external origin as determined by DSO
- Procurement requirements, criteria, and evaluation results of performance evaluation
- Results of management review
- Nonconformities, actions taken, and results of actions taken

As an integral part of the internal review process, individual DSO should consider periodically assessing and determining its ongoing operational performance along a sustainable development progression path. A useful tool for this review, i.e., the sustainable development maturity matrix first published in BS8900:2006, has also been suggested (Figure 2). Additional notations and guidance on use of the maturity model for periodic assessment of sustainability performance of a DSO are indicated

FIGURE 2. Sustainable Development Maturity Matrix

Principles	Practices	Stages of a Dental Organization's Approach to Sustainable Development		
		Increasing Maturity		
Inclusivity	Patient Consulting and Participation			
Integrity	Community Outreach and Services			
Transparency	Fair Pricing and Billing Transparency			
Stewardship	Energy Efficiency and Conservation			
<i>Addition Principle</i>	<i>Additional Practice</i>			

in the E3014-15 standard (Appendix X.4). Maintenance of a sustainable development maturity matrix or equipment evaluation not only serve as internal measure for DSO management, it also provides a source of documented information when communicating sustainability performance progress with external stakeholders.

Parting Thoughts

For those who are zealously and progressively pursuing sustainable dental practices for the first time, a standard practice guidance outlining a roadmap and system methodology toward managing sustainability in dentistry has arrived. With a well-defined context of organization and demonstrated leadership and commitment, any dental professional will be able to methodically assess the risks and opportunities associated

with provision of dental services, prioritize actions for performance improvement, and more productively and sustainably contribute to the society. Application of E3014-15, in its entirety, provides a holistic approach toward managing sustainability issues in dentistry and practical steps in the realization of attaining and continually strengthening sustainability performance of a dental service organization. ■

# Aligning Values and Business Strategy to Achieve Organizational Change

## Using the Five Ps to Embed Sustainability in Your Dental Practice

Sheila L. Margolis, PhD

### Abstract

Every organization, including large and small businesses, can be characterized in terms of its core culture. The central element is purpose: not what the organization does, but why it does that (with the assumption that this is filling a need beyond the organization itself). Organizations have a "personality" in the sense of a distinctive philosophy that guides how they fulfill their purpose. Because organizations cannot do all things, they must choose some strategic and universal priorities for action. This core culture is communicated to the world around the organization through its practices and its projection, or efforts to control how it is perceived. Organizations that have a vague core culture or a core culture that does not fit the environment will not thrive. Organizations will also struggle when there is not a smooth fit among the elements of its core culture and the way it is realized in practices and projections.

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What is valued at your dental practice? What is core to your organization's culture? For example, at Amazon, at the core of their culture is a focus on customer obsession. Amazon is built on an array of customer-focused practices. From customer reviews, to selling third-party competitor products, to offering a growing number of Amazon Prime benefits, Amazon ensures that customer obsession is deeply embedded in their culture and displayed in the customer experience. It is a value that is core to their culture.

So for your dental practice, do you have clearly defined values that guide your practice? Is the image you project to the public consistent with these values? Likewise, is the patient experience aligned with these values? And is the employee experience consistent with the values that you believe are core to your culture?

As it turns out, there's a pattern in successful organizations; there are clearly defined core principles and values that are fundamental to each organization. These values are the organization's core culture: the purpose, philosophy, and priorities. And in great organizations, employees understand those principles and values, and they live by them each and every day. They practice them in employee-to-employee interactions and in their interactions with patients.

Also, they project that image to the community. Living your core culture brings authenticity to your brand and harmony for those working in your practice.

### Look at Dental Practice Using the Five Ps

The Five Ps are purpose, philosophy, priorities, practices, and projections. The Five Ps is a system-wide, holistic way to think about your practice. You can use the Five Ps to understand culture, build alignment, and drive change. The key to success is to consistently practice and project the core culture principles and values that define you and that drive performance.

### The Core Culture of Your Practice

To understand core culture and alignment, look deep inside your organization—at the central Three Ps: the organization's core culture.

### Purpose

At the center of core culture is the organization's purpose. Think of purpose as the why of your practice. It's not what you do—like, for example, in a university "to educate."

Many organizations no longer exist because they had a flawed strategy. As their industry made changes, these organizations did not. This lack of an ability to change set them up for their demise.

Instead, the purpose is why the work you do is important. For example, a university's purpose might be "to prepare people for life" or "to empower people to make a difference in their own lives and the world." The purpose is the foundation for your practice. It is your reason for being. It's why your organization exists.

Think of the purpose as the cause that defines one's contribution to society. People seek meaning in their lives through their work. Businesses exist to make a profit. They also exist to make a difference. The purpose is a human focus. And when employees see the purpose as challenging and meaningful, work is more than a job. It's a cause that makes a difference in people's lives. The purpose defines your gift to the world. It is what you believe in and why you're in business.

For example, initially, you may describe the purpose of your practice as something like "to provide dentistry." But to define purpose, ask yourself, "Why is that work important?" If you think about it more deeply, in terms of a why question and not a what question, it might be expressed as "to promote health and well-being,"

"to foster health and self-esteem," "to make a positive difference in people's lives," or something else.

Clarifying the purpose is the first step in defining your organization's core culture. Everything you do must be aligned with the purpose. Are your daily activities working to contribute to it?

### Philosophy

Next, one layer outside of the purpose is the organization's philosophy. Philosophy is a small set of principles or values that guide how you and your staff distinctively do your work. The philosophy is how employees view the organization as being different from other dental practices. And the philosophy is enduring. There is continuity in the organization's character. The philosophy describes the values most important to the practice in the past; it describes the values core to the organization today; and it would feel like a different organization if it was not important to the practice in the future. The organization's philosophy encompasses the few principles or values that employees believe are fundamental and distinctive over the years.

Philosophy is like the personality or character of the organization. It is typically derived from the founder's personality, or the skills or ideals that drove the organization's creation. If the founder is the dentist, then the philosophy describes what's most important to that individual. For

example, in one practice, there is a prime focus on delivering friendly care. In that practice, there is a heightened concern that each patient feels comfortable and enjoys his or her dental experience, or it might be technical excellence, or even exploring innovative technology.

In some practices, sustainability is part of the philosophy of the dental practice. For dentists who truly value sustainability, they use their dental practice as a way to model their personal commitment not only to the economics of their practice, but also to the social and environmental impact of their practice.

The purpose, plus the philosophy, are the organization's identity. Identity is the essence of the practice. It is the why and the distinctive and enduring how of the practice. Often the greatest challenge of an organization is to consistently maintain the discipline to be that identity. And usually the changes that an organization needs is to be better at being who you say you are. The organization's identity is fairly stable. Rarely does an organization change its identity. Instead, the way an organization drives change is through its priorities.

### Priorities

Now, one more layer outside of philosophy is the organization's priorities. Priorities are part of core



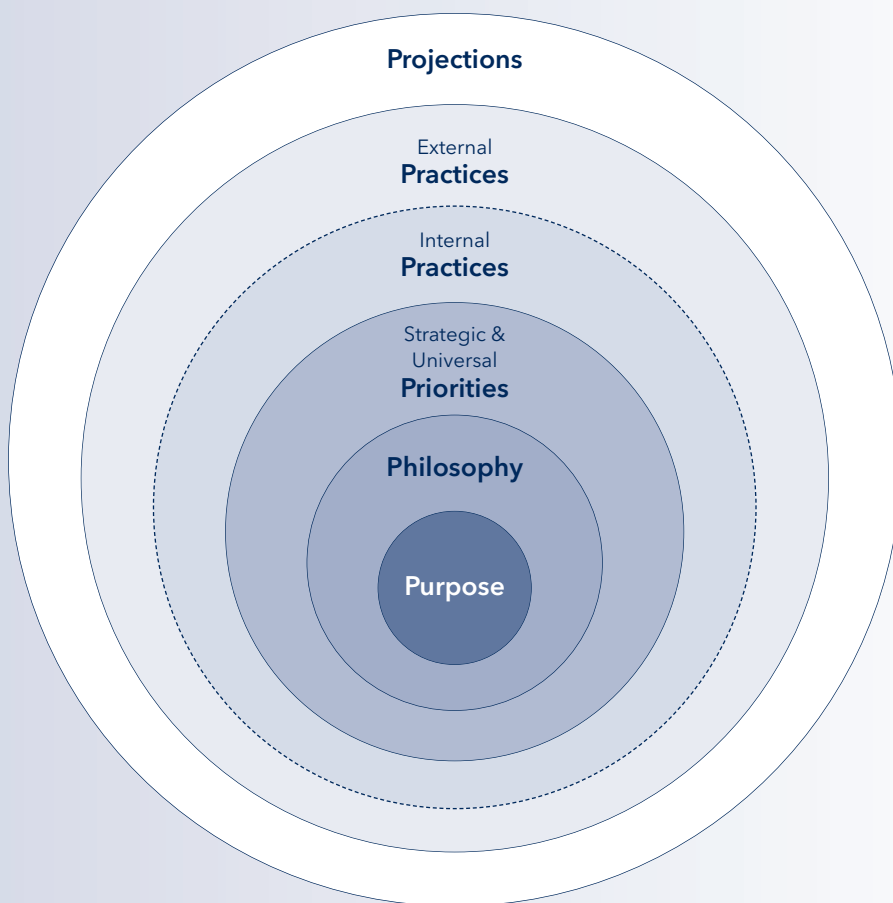
culture—but not a part of organizational identity. There are two types of priorities: strategic priorities and universal priorities. These are the additional values that guide the practice. They are the added values the organization must focus on and pay attention to now in order to be competitive and to thrive in the current business environment. With the ongoing changes in dentistry, dentists must be knowledgeable of the changes and know where they must make adjustments in the way they run their practice. The purpose and philosophy are relatively stable. In contrast, priorities are the way to introduce change in the culture.

Strategic priorities are your strategic values. They have an external, patient focus and align with industry changes and the requirements to have a thriving practice. These priorities describe how you must perform in order to achieve your business goals. Therefore, you must know your strategy and the changes in the dental industry in order to define your strategic priorities.

You must also have a smart strategy to guide your priorities. Otherwise, your strategic priorities will not lead you to success. Many organizations no longer exist because they had a flawed strategy. As their industry made changes, these organizations did not. This lack of an ability to change set them up for their demise. For example, Borders did not have a digital, online focus—instead they concentrated on the growth of their network of stores and physical content like CDs and DVDs. They outsourced their online sales operation to Amazon. It was like handing the keys over to a direct competitor.

A smart strategy must guide your strategic priorities. And when your practice has a change in its business

Figure 1. The Five Ps.



Source: Margolis, S. (2010). Building a Culture of Distinction: Facilitator Guide for Defining Organizational Culture and Managing Change, Workplace Culture Institute.

strategy, you must also reevaluate your priorities. This may require eliminating priorities that are no longer a strategic focus and embedding new priorities so your culture can align with the change. Making changes in priorities is a key way to shape culture and bring needed change.

For example, in the 2009 recession, many organizations had as their priority to reduce costs. Therefore, cost control was a strategic priority

adopted at that time. But years later, other issues have risen in importance.

More and more, organizations are choosing sustainability as a strategic priority. Sustainability is not necessarily a part of the identity of these dental practices; it is neither the purpose nor the philosophy. Instead, for many, it has become a focus due to an increased awareness of the need for a triple bottom line approach—not focusing just on financial, but also on the environmental and social impact of their practices.

Everyone in the practice must understand the industry challenges and how the practice is going to achieve its goals within the context of the business environment. Life is not stable. The ability to embed change within an organization is key to surviving and thriving. Priorities give organizations that flexibility to evolve with the times, while simultaneously sustaining the dental practice's distinctive and enduring identity.

The second type of priority is universal. Universal priorities are the values that drive employee engagement. They are called universal priorities because they promote an enriching and motivating workplace that stimulates exceptional efforts and contributes to heightened employee loyalty. These are values that organizations today are seeking to

infuse in their cultures in their efforts to have happy, productive, engaged employees.

The six universal priorities are fit, trust, caring, communication, achievement, and ownership. Having these values promotes an engaged staff.

- *Fit*: Employees should be a fit with the core culture of the practice and a fit with their jobs.
- *Trust*: To thrive, employees must trust their leaders.
- *Caring*: A workplace must be caring and supportive.
- *Communication*: Information must be shared—in healthy organizations, information flows freely in all directions.
- *Achievement*: Employees must feel like they are growing, developing, and achieving.
- *Ownership*: When employees feel like an owner—having a feeling of reasonable control and flexibility in their work and participating in decision-making that impacts them—they are more engaged.

In an ideal world, these values would not be differentiators. But organizations do not uniformly live these values; therefore, the presence of these values enhances the competitiveness of the organization, and the absence of these values deters an organization from achieving its potential. Organizations should assess their strengths and weaknesses in these values and highlight, in their core culture, the values to focus on and improve. These values—the universal priorities to focus on and pay attention to—may change over time. Universal priorities are a way to introduce internal changes with your staff in order to have a thriving workplace where employees put forth

the energy and effort to help the practice succeed.

## Alignment of Practices and Projections with the Core Culture

Once you have defined the core culture—your practice's purpose, philosophy and priorities, you must audit your practices and projections to find opportunities to increase alignment.

Think of alignment as the way to embed change in your culture. The aim is to more consistently practice the core culture principles and values. So, for instance, if sustainability is a new priority, then you must assess current practices and projections to determine if they are aligned with sustainability. Where there is insufficient alignment, the organization must make changes.

Organizations should always seek better ways to practice the core culture principles and values that drive success. All interactions must be laced with the core culture principles and values. By auditing your practices and projections, you can find ways to improve alignment and make positive change.

## Align Practices with the Core Culture

Practices can be internal or external. Internal practices are employee-to-employee practices such as how the organization is structured; how work is designed; the systems and processes for doing work and making decisions; recruitment and selection practices; training and development; performance management; internal communications; and technology.

Some examples of sustainable practices that might be introduced to enhance alignment with the priority of sustainability include energy conservation practices, water conservation practices, eliminating products with toxins, limiting or eliminating mercury waste, and using biodegradable products.

The aim is to ensure all internal practices are aligned with your purpose, philosophy, and priorities.

External practices are the patients and the markets you serve, your products and services for your patients, and your suppliers, vendors, and business partners. All external practices must also be aligned with your purpose, philosophy, and priorities.

Some examples of sustainable practices that might be introduced to enhance alignment with the priority of sustainability include energy conservation practices, water conservation practices, eliminating products with toxins, limiting or eliminating mercury waste, and using biodegradable products. Dentists

concerned about sustainability see the importance of having the best indoor air quality for their patients and staff. And they consistently look for ways to recycle everything they possibly can, including moving from paper to digital. They may offer patients paper bags instead of plastic and give toothbrushes that can be recycled.

### Align Projections with the Core Culture

Projections embody the organization's image that it displays to the public through things like the organization's name, logo, symbols, location and look of its offices, image of its dentists, dress/uniforms of the staff, marketing, public relations, advertising, and community activities. These projections must be aligned with the purpose, philosophy, and priorities.

There are many ways to align the priority of sustainability with projections. For some who practice sustainable dentistry, they project that image through public education and community service projects. Some locate their practice where it will offer easy accessibility to public transportation. The facility for the practice is also a way to achieve alignment with sustainability. Dental practices can achieve LEED certification when their facilities meet sustainable guidelines in their construction. Alignment of the core culture with projections ensures the community is aware of the values that are core to the practice's culture.

### Alignment Plan and Metrics to Monitor Change

Once you have audited opportunities for change, you can create and implement an alignment plan. This plan will guide you and your organization in better practicing and projecting the core culture principles and values. The goal is to achieve better alignment each day. Use metrics to monitor how well you are delivering on your purpose, living your distinctive philosophy, and practicing your priorities. Be sure everyone works each day to more effectively live the principles of your core culture that drive performance.

In the words of Jeff Bezos about customer obsession: "Customer focus is deeply ingrained in all the nooks and crannies of our culture." Bezos wants employees to embed that customer focus in everything Amazon does.

Use the Five Ps to guide you. Know the purpose, philosophy, and priorities of your practice and live by those principles and values each day. Use your unique culture to drive change and ensure your organization's success. ■

# Gies Ethics Project

## The ADA News and ADA Membership

David W. Chambers, EdM, MBA,  
PhD, FACD

### Abstract

An organization's communications with its members can be read as partially reflecting the identity of those members. Four issues of the *ADA News* from each of the years 1975, 1985, 1995, 2005, and 2015 were coded for content. Information from the association and news about developments affecting the context of practice remained a constant feature through the period analyzed. Commercial advertisements and sales promotions to member dentists increased dramatically at the same time that letters from members and personal stories about dentists were less commonly featured. These changes parallel the steady decline in ADA membership during this same period. Several hypotheses may explain this relationship.

**Dr. Chambers** is Editor of the College. This report is part of the empirical study of ethics in the profession requested by the Regents of the College and known as the ACD Gies Ethics Project.

*Photo by Dr. Herb Borsuk*



*The world is a looking-glass, and  
gives back to every man the refraction  
of his face.*

—William Makepeace Thackeray,  
Vanity Fair

Membership in the American Dental Association has declined steadily over the past half century. As shown in Figure 1, in the middle of the past century more than nine in ten active dentists were ADA members. Although there is some sign that the rate of decline is abating, the rate of loss has been about 0.6% each year over the past half century.

Even though the direction and regularity of this trend is clear, it must certainly reflect a variety of causes. Similar trends have been noted over the time period in many organizations. Among the health professions, medicine and dentistry show comparable losses, while nursing, veterinary medicine, and others have been less impacted. Generally, civic and fraternal organizations such as the Masons and the League of Women Voters have seen heavy losses, while professions such as engineers, accountants, lawyers, and architects have remained steady (Putnam, 2000).

The general decline in “joining” was examined by Chambers (2004). It is almost certain that, in the case of dentistry, there are both general societal causes and changes in what dentists value. It is not the purpose of this study to identify the causes and give them their relative weights.

This report looks, instead, at how changes in one organization's—the American Dental Association—self-image (as expressed in a publication intended to communicate with its members) interacts with membership rate.

Arguably, the *ADA News* reflects the interests of the association's members. To the extent this is true, it should be possible to “read” what the association believes its members are like or what they value by studying the content of the publication. If both membership and content in the *ADA News* changed in a systematic fashion during the past 40 years, a prima facie case can be made that some dentists may be leaving the association because it no longer reflects their values.

### Materials and Methods

The *ADA News* began publication twice a month in 1975 as a means of providing members with timely information regarding association activities and events of importance to practice. Originally two-tone and 12 pages in size, it became full-color, four-column grid, 11 x 14, and varied in length from 12 to 32 pages in subsequent years.

The ADA library provided digital copies of 20 back issues of the *ADA News* for examination. These consisted of two issues from March and two from August in each of the years 1975, 1985, 1995, 2005, and 2015.



The content of these issues was measured in terms of percent space devoted to eight different content categories. Space per item was measured using a ruler, with text and photographs being given equal weight. Because the number of pages differed across issues, space per category was converted to percentages within each issue.

Coding categories were determined by an iterative process. Eleven potential categories were identified by review of 2016 and 2017 issues (not included in the study). Approximately six months later, four 2017 issues of the *ADA News* were reviewed and each item was placed in the category demonstrating the best fit. When it was uncertain how to categorize an item, that prompted crafting tighter category definitions, consolidations, and eventually the elimination of three potential categories.

The categories retained for use are shown in Table 1. Banners, statements of ownership, and similar material were not coded. The selection of March and August issues was partially determined by a desire to avoid heavy emphasis on the ADA annual meeting or campaign material relative to officer election. Approximately four pages of such coverage were found in the 20 issues examined, but they were excluded from coding.

The author performed all the coding. The content of the 20 issues was recorded twice, separated by approximate two months. Where

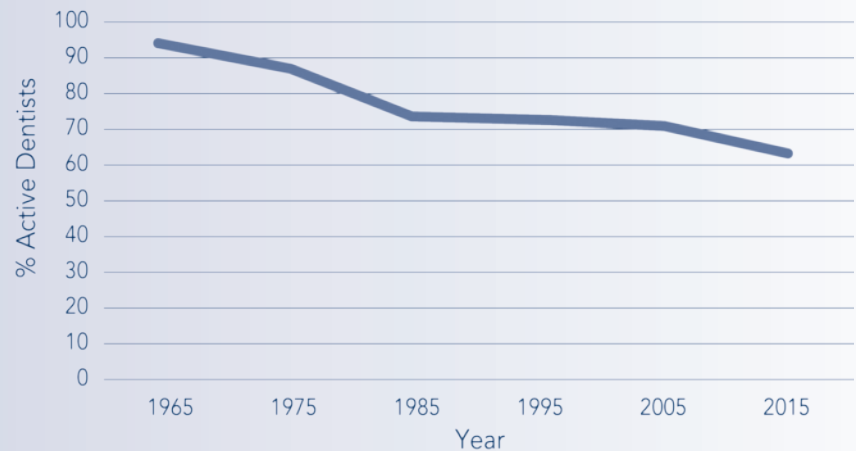
differences were found, the average of the two values was used.

## Results

Consistency of the coding was acceptable, with correlation between the first and second coding results across all categories and issues of  $r = 0.936$ .

The overall percentage of *ADA News* content is shown in Table 1. Advertising and sales to members accounted for more than half of the material, and the proportion rose steadily over the years. Internal and external news was constant at about

**FIGURE 1. Fifty-year membership trend in the American Dental Association showing members as a percentage of active dentists.**



Sources: Putnam RD. *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster, 2000 and American Dental Association. *National recruitment and retention report for active licenses dentists: End of year 2015*. Chicago: The Association, 2016.

A balance between harvesting what is at hand and searching for better future alternatives is essential to the survival of any group.

Table 1. **Coding categories for content in the *ADA News*.**

Name	%	Definition
Advertisements	47	Promotion of products or services paid for by commercial suppliers. Announcements of meetings sponsored by other dental professional groups were not include in this category, but in the “Other News” category.
ADA News	15	Association activities, announcements, information about officers and staff, statistics on practice patterns of dentists. Policy positions of the association accompanied by descriptions of activity advocating these positions was coded as “Lobbying.”
Shout-outs	8	Personal recognitions for individual dentists or organizations, announcements of new deans, or significant honors from groups other than the ADA, stories of unusual personal accomplishments.
Other News	8	Information such as federal policy, scientific breakthroughs, public health concerns, coming from sources other than the ADA but relevant to individual practice.
Letters	7	Opinion from ADA members regarding issues of the day. Letters were further sorted into four categories: those that praised the ADA, those that raised challenges to its practices, those that praised other organizations, and those that challenged the actions or positions of others.
Internal Marketing	7	Announcement of services, materials, information, or other member benefits for which members (and others) would be charged a fee. Buyer guides and affinity cards (for which the association receives a commission) were so categorized. Announcements of the annual meeting or other conferences sponsored by the ADA were not coded, in this or any other category.
Lobbying	6	Announcements of ADA lobbying positions, political stances and their reasons in opposition to positions taken by government, other professional organizations, or commercial organizations, such as benefits programs.
Awards	2	Announcements of winners of awards sponsored by the ADA or requests for nominations for such awards.

a quarter of the content. Focus on member opinions and accomplishments represented about 15% of content, but the proportion declined over the years.

Table 2 shows the correlations between yearly ADA membership and percentage of *ADA News* content. There are two coefficients in each case because a pronounced curvilinear relationship was observed. This was due to the fact that the effects of changed content balance on declining membership appears to have stabilized.

Declining association membership is strongly paired with an increasing commercial orientation in *ADA News* content, as shown the two panels in Figure 2. This is apparent in more advertising space paid for by outside vendors and in the association’s appeals to sell services to its own members.

Association membership was positively correlated with two factors, both related to member participation. Opportunity to express personal opinions in the form of letters was significantly associated with high membership numbers. To a lesser, but still statistically significant, extent, recognition of the personal accomplishments, typically unrelated to dental practice, in the form of “shout-outs” was also positively related to ADA membership, as graphed in Figure 3.

An attempt was made to further characterize the content of letters appearing in the *ADA News* by analyzing the apparent motivation of the letters. “Defender” letters were those judged to praise the ADA or criticize other organizations relative to the practice of dentistry. “Builder” letters were those that questioned positions or actions taken by the association or praised other organizations for actions thought to advance oral health. “Defender”

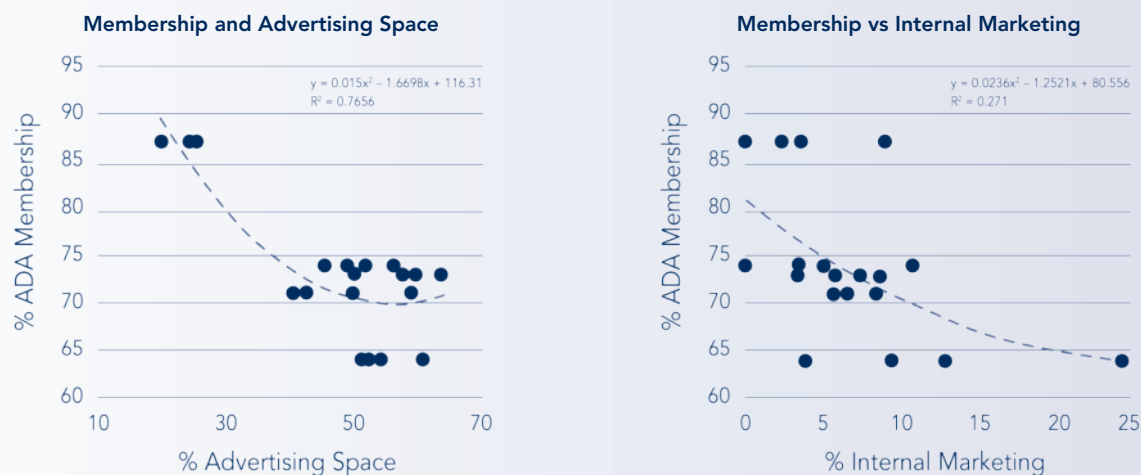
letters, constituted 55% of those published while the remaining 45% were more challenging. The graph in Figure 4 shows an association between the attitude of letters in the *ADA News* and association membership. During times of high membership, challenging letters predominated; as membership declined, more “patriotic” letters came to predominate. Not only do the slopes for the two relationships cross each other, they are significantly different at  $p < 0.05$ , suggesting that a strong membership base is associated

**Table 2. Correlation between ADA membership as a percentage of active dentists across the years 1975 to 2015 and percentage of content in *ADA News* by category.**

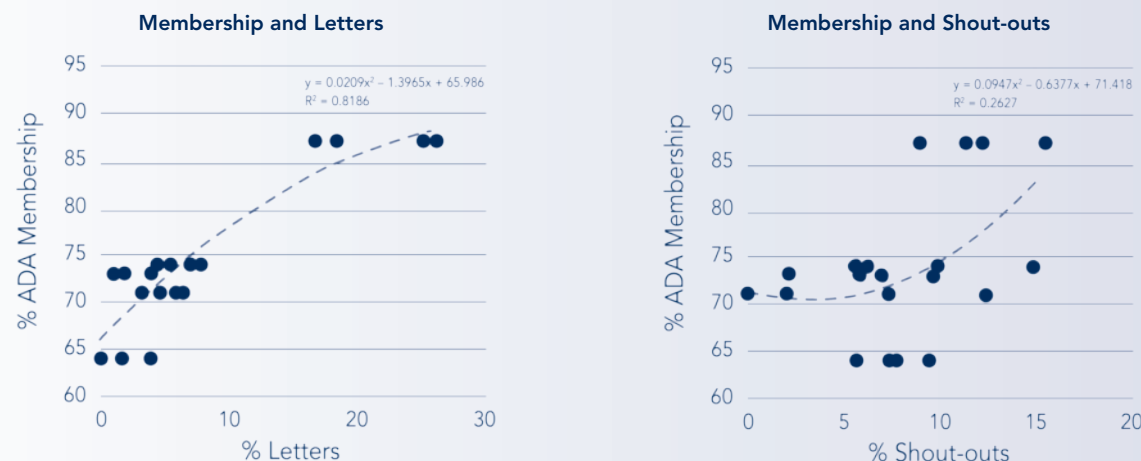
Category	Linear r-value	Best curve r-value
Advertisements	-0.818***	-0.875***
Association news	0.341	0.355
Shout-outs	0.450*	0.513*
Other news	0.408	0.418
Letters	0.894***	0.905***
Internal marketing	-0.508*	-0.521*
Lobbying	-0.069	-0.228
Awards	-0.379	-0.383

NB: \* =  $p < 0.05$ , \*\*\* =  $p < 0.001$

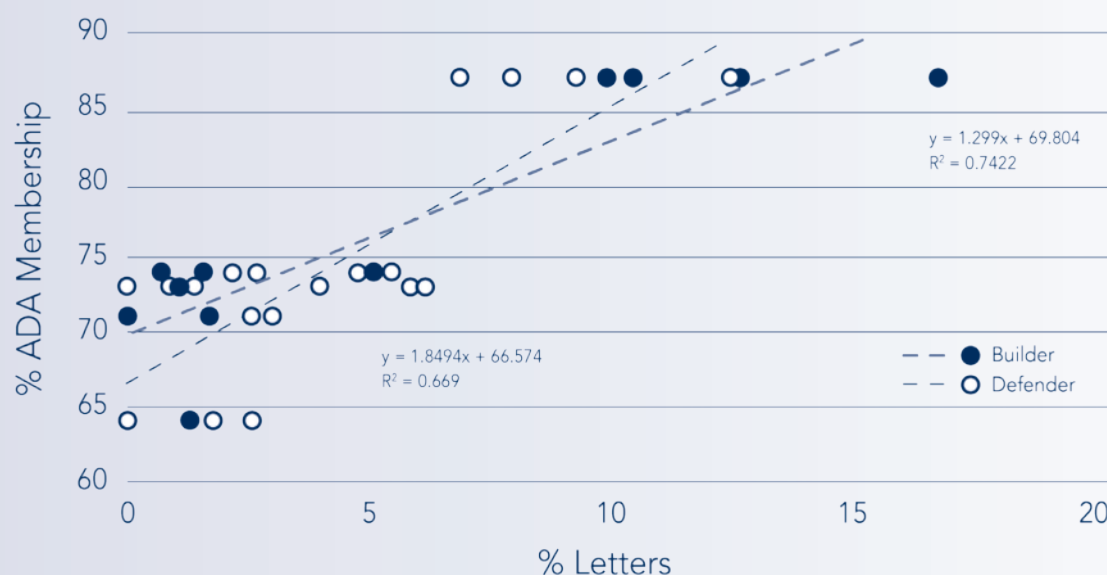
**FIGURE 2. Changes in commercial content in *ADA News* and association membership.**



**FIGURE 3. Association between featuring individual members and membership rate on association membership.**



**FIGURE 4. Association between ADA membership and letters classified as those defending the status quo and those challenging the profession to make improvements.**



with open discussion of the strengths and weaknesses of an organization relative to its context, while a weaker membership is more defensive in its opinions.

## Discussion

The official publication of an organization can be read as projecting the image those in leadership positions or staff wish to communicate regarding who its members are and what they value. It is clear that the image of members of the American Dental Association, as reflected in its twice-month newsletter to its members, has changed over the past 40 years. At the same time the strength of the association, or its claim to represent the entire profession, has also changed.

The function of the *ADA News* with respect to conveying news outside the organization about matters that affect the membership and information from within the organization has

remained relatively constant over the period of 1975 through 2015. The commercial emphasis of the newsletter (advertisements and offers of services from the ADA in exchange of fees paid by members) has increased from a quarter of the content to two-thirds. At the same time the content that features the opinions and personal stories of members has decreased from one-third to 10%. Both of these changes are significantly associated with declining membership in the association.

These are correlations, so it is impossible to say in a definitive fashion that a shift away from the personal voice and participation of members to a commercial orientation “caused” a decline in membership. Both trends could reflect general changes in society. Another plausible interpretation is that increased commercialism, especially a greater emphasis on drawing money from members to support the organization, represents an effort to compensate for declining membership revenues. The association’s 2015–2019 strategic plan includes the following objectives: “Objective 2: Achieve a net increase

of 4,000 active licensed members by the end of 2019” and “5.2: Increase member utilization of existing products and services and pursue new markets.” These goals may compete against each other. To the extent that the ADA emphasizes benefits over participation, it will be in competition with an increasing number of other groups, including those with commercial expertise and substantial resources, who provide specialized services for dentists. Those dentists who prioritize patient care and professional relationships over commercial success may identify less with the image of dentistry increasingly portrayed in *ADA News*.

There is an alternative explanation for the observed association between commercial and non-personal characterization of the image projected by the *ADA News* and declining membership. At Robert Putnam (2000) and William Sullivan (2005) have argued, organizations are drifting toward increasing “professionalization.” As these authors



use the term, it should not be mistaken for the exercise of professional standards of integrity and service among the members, but the use of lawyers, advertising executives, fund-raisers, lobbyists, consultants, event planners, web designers, research firms, and the like—both within the organization and especially on a contract basis—to replace volunteer members in leadership positions. Such changes can become self-perpetuating when they consume increasing resources. Putnam describes this as “checkbook participation,” the practice of paying non-colleagues to run an organization on behalf of the members. This explanation has the advantage of accounting for both the increased commercialization of the *ADA News* and the decreased voice given to members in terms of printing their opinions and featuring their personal accomplishments. Although not formally measured in this study, the absence of information from the House of Delegates and reports from committees and councils, including actions of the trustees in the newsletter, is notable.

The opportunity for member voice in the form of letters has declined in the *ADA News* in recent years; the balance has also shifted toward a dominance of ADA-positive messages. Healthy organizations need both those who praise what is essential and those who ask how we can do better. A group that lives off its successes or publicizes past accomplishments rather than making new ones possible is unwisely investing in the future of its young members (Fisher, 2009). An organization that fails to balance its attention between hunting and

harvesting is doomed (Blum & Merkle, 2010). Bill Bishop’s *The Big Sort* (2008) is a cautionary tale of how an imbalance of the “defenders” over the “builders” leads to fragmentation rather than strength.

These results should also be considered in the context of whether the ADA represents the entire dental profession or the entire oral health profession. Membership numbers may not be the best indicator. In the 1930s and ’40s, the American College of Dentists challenged the then prevailing model of dental journalism (American College of Dentists, 1932) as being dominated by commercial interests and failing to serve the entire profession. As a result of the efforts of the college, the S.S. White Company, which published the leading journal in the field, *Dental Cosmos*, assigned ownership of their publication to the ADA. The ADA agreed in exchange to publish a brief, periodic notification of scientific advances to be sent free of charge to all dentists (Chambers, 2012). The current *JADA* contains a higher percentage of advertisements than did *Dental Cosmos*, and a publication for the entire profession never materialized.

The *ADA News* is one of four communication platforms used by the association. The others include the *Journal of the American Dental Association* that is devoted to disseminating scientific information about the materials, procedures, and patient characteristics that affect clinical care; a website that focuses on expressing policy, services, and maintaining membership functions; and a rich range of in-person opportunities at meetings and via service on committees. As an example of “professionalization” of these platforms, *JADA* is now published “on behalf of” the ADA by Elsevier, Inc.

These other forms of communication should be studied as has been begun with the *ADA News* in an effort to understand how communication shapes the identity of the profession and how changes in communication can best be used to strengthen it. ■

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# Submitting Manuscripts for Potential Publication in JACD

Manuscripts for potential publication in the *Journal of the American College of Dentists* should be sent as attachments via e-mail to the editor, Dr. David W. Chambers, at [dchambers@pacific.edu](mailto:dchambers@pacific.edu). The transmittal message should affirm that the manuscript or substantial portions of it or prior analyses of the data upon which it is based have not been previously published and that the manuscript is not currently under review by any other journal.

Authors are strongly urged to review several recent volumes of *JACD*. These can be found on the ACD website under “publications.” In conducting this review, authors should pay particular attention to the type of paper we focus on. For example, we normally do not publish clinical case reports or articles that describe dental techniques. The communication policy of the College is to “identify and place before the Fellows, the profession, and other parties of interest those issues that affect dentistry and oral health.

The goal is to stimulate this community to remain informed, inquire actively, and participate in the formation of public policy and personal leadership to advance the purpose and objectives of the College.”

There is no style sheet for the *Journal of the American College of Dentists*. Authors are expected to be familiar with previously published material and to model the style of former publications as nearly as possible.

A “desk review” is normally provided within one week of receiving a manuscript to determine whether it suits the general content and quality criteria for publication. Papers that hold potential are often sent directly for peer review. Usually there are six anonymous reviewers, representing subject matter experts, boards of the College, and typical readers. In certain cases, a manuscript will be returned to the authors with suggestions for improvements and directions about conformity with the style of work published in this journal. The peer-review process typically takes four to five weeks.

Authors whose submissions are peer-reviewed receive feedback from this process. A copy of the guidelines used by reviewers is found on the ACD website under “How to Review a Manuscript for the *Journal of the American College of Dentists*.”

An annual report of the peer review process for *JACD* is printed in the fourth issue of each volume. Typically, this journal accepts about a quarter of the manuscripts reviewed and the consistency of the reviewers is in the phi = .60 to .80 range.

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