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Rethinking – *Design Thinking* – **Health Care**

The Supplier Role

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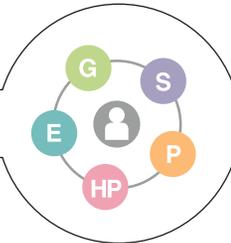
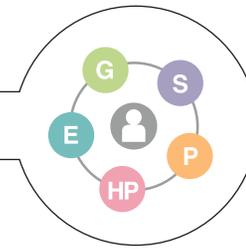


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Preface

The Problem

Health Care is a major priority for Americans. For decades, it has been a matter of national concern; it now demands attention. As health care costs have climbed, concerns about financial failure have joined concerns about quality and access. In 2004, health care nationally accounted for 15.2% of the GDP, far in excess of amounts spent by any other developed country. For this, the life expectancy of Americans born in 2004 was 78 years. In 2007, life expectancy in the U.S. actually declined by .3%, placing the country 44th among industrialized nations. The mediocre level of quality we have purchased we have paid for with far more of our treasure than that spent by any other nation.

The cost of health care in this country must be brought down. Now nearly 2 trillion dollars annually and climbing, health care costs threaten to destabilize the national economy. But we are in no position to allow health care quality to decline; we already trail nearly all of our peers. Health care quality must improve as costs go down. The major health care sectors must find ways to provide services where quality of medical care is the competitive issue, and results are measured at the medical condition level in terms of patient outcome per unit of cost.

Harvard business strategist Michael Porter and colleague Elizabeth Teisberg have analyzed the competitive health care environment from the standpoints of the five major sectors involved: providers, payers/health-plans, suppliers, employers and the government.

Their remarkable conclusions are set forth in a recent book: “Redefining Health Care. Creating Value-Based Competition on Results”. Building on their strategic recommendations, the project described in this report examines how policy proposals might be implemented in the Suppliers sector.

Design planning and policy planning join effectively in policy design synthesis at the point where policy requires means of implementation. This project proposes design concepts in a system context to implement strategy for Suppliers as part of a larger construct uniting all five sectors of the health care community.

The Course

The design concepts are results from a project-based course at IIT’s Institute of Design. The semester-long Systems and Systematic Design course is a workshop in which teams of graduate students, deliberately of mixed international origins and different academic backgrounds, apply the computer-supported Structured Planning process to complex design planning problems. The goal for each project is to develop information thoroughly, propose innovative solutions that take maximum advantage of the information, and integrate those ideas into system concepts that can both be evaluated in their own right and (in a real situation) be the comprehensive project specifications for a follow-on detailed development project.



Course Issues

Complexity. What is the nature of “systems” concepts where policy, products, processes, services and communications are organized to act together to achieve multiple goals? What can be done to assure that a system concept is as complete as possible, covering many functions and attaining a high degree of “wholeness” and organic reliability?

Design planning methods. What is Structured Planning and how can its tool-kit of methods be used to collect, structure and synthesize information in projects of greater complexity than can be comfortably dealt with intuitively? How can such methods be used by a team to extend the effectiveness of all?

Teamwork. How do individuals with different cultural origins and different academic backgrounds work together successfully on teams? What roles are there to be played and what difficulties must be overcome?

The Project Team

Twenty two graduate students from the U.S., Germany, South Korea, China, Singapore and India were assigned to five teams for study of the problems of the five health care sectors. Background experience for team members included degrees in automotive design, history, interior design, industrial design, electrical engineering, control and information technology, computer science, communication

design, chemical engineering, environmental sciences & policy, media systems design, graphic design, English, marketing, international business and biotechnology.

Team members for this project team, studying health care services from the Supplier side, are:

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Harrington College of Design
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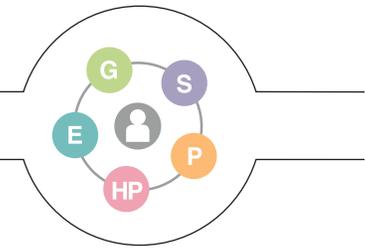
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The Planning Process: Structured Planning

Structured Planning, the systematic planning process taught, is a process for finding, structuring, using and communicating the information necessary for planning. It is a front-end process for developing concepts thoroughly and cohesively.

A number of projects have been undertaken with it and used to further its development. Among over 100 of these, an early published project for Chicago’s transit authority (CTA) was Getting Around: Making the City Accessible to Its Residents (1971). In 1983, the House of the Future project won the Grand Prize in the Japan Design Foundation’s First International Design Competition. In 1985, the design of a habitation module for Space Station was undertaken for NASA. In 1987, the Aquatecture project won the Grand Prize again in the Japan Design Foundation’s Third International Design Competition. In 1991, Project Phoenix on global warming was honored as Environmental Category Grand Winner in Popular Science magazine’s “100 Greatest Achievements in Science and Technology” for the year. In 1993, two award winning projects, NanoPlastics and Aerotecture, were widely publicized in Europe and Japan; in 1995, the National Parks project developed plans for the

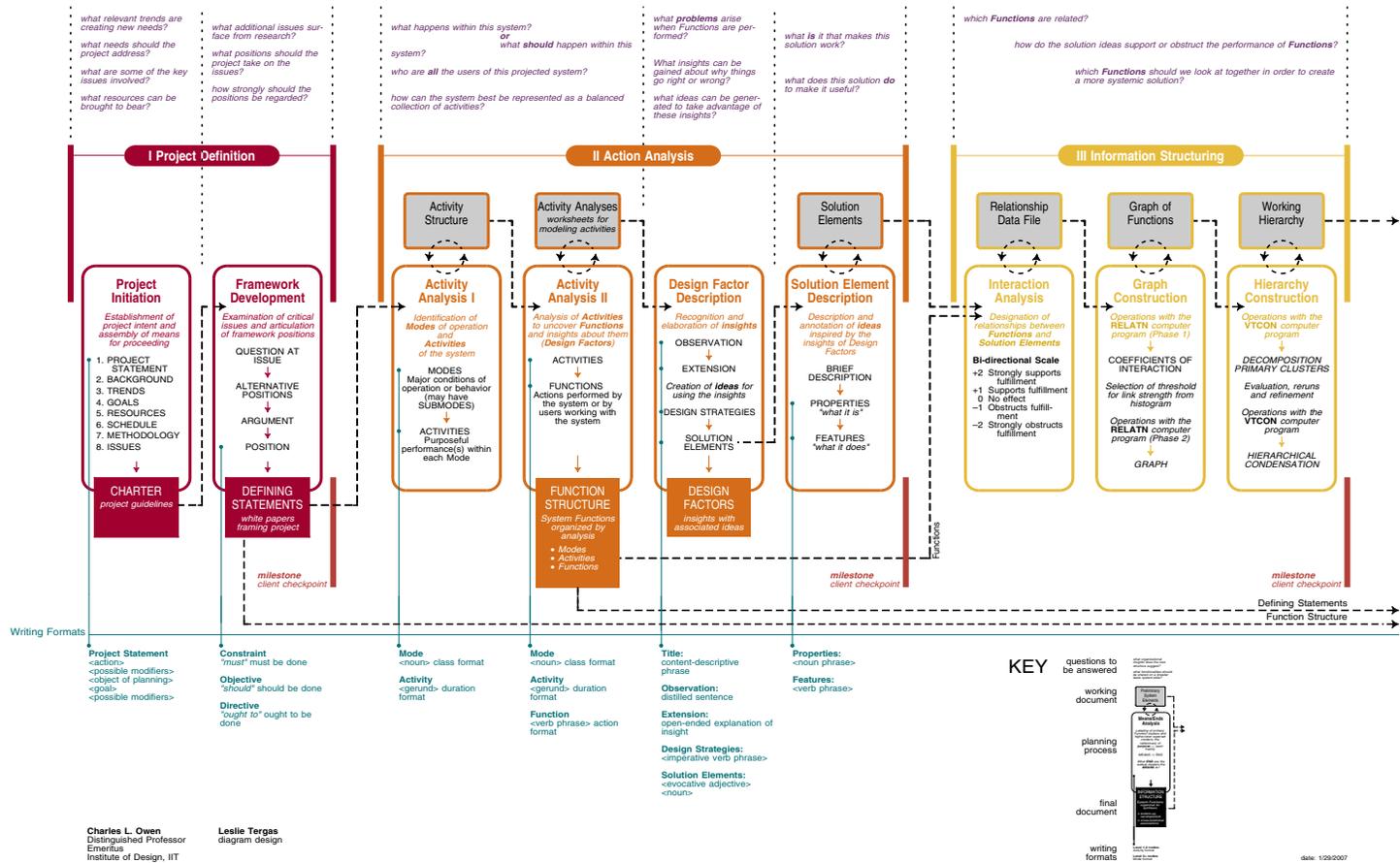
future of the U.S. National Park Service. In 2001, Access to Justice, a project sponsored by the National Center for State Courts, was implemented for use in state courts across the United States, and in 2005, four projects on Home, Play, Work and Health were finalists in four of the five competition categories for Denmark’s INDEX Awards, the world’s richest design prizes. As the process has evolved, it has become an increasingly useful planning tool for business, institutions and government.

A diagram of the process, shown below in two figures, outlines the activities that make up Structured Planning and the working documents and final products that are produced along the way. The following general description follows the diagram. While products of the process are discussed here in the abstract, it is possible to see specific examples produced for this project in the appendices that accompany the report.

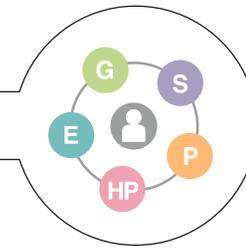


The Structured Planning Process (Phases I - III)

Structured Planning is a front-end, concept development process for finding, and communicating the information necessary for advanced planning



The Structured Planning process: phases I through III.



I Project Definition

The Structured Planning process begins with Project Initiation and the production of a Charter. This is a “brief” that serves as an initial communication vehicle between client and planners. It contains background, context, basic goals, a project statement that cuts to the heart of the planning task, resources to be used, a schedule and an initial set of issues to be investigated.

Defining Statements are mini “white papers” produced in the Framework Development portion of Project Definition. They focus the project within the direction of the Charter, concentrating on the issues and arguing specific directions that the project should follow with regard to them. Together with the Charter, they define the project.

II Action Analysis

Any system can be viewed as a complex entity working with its users in different ways appropriate to its modes of operation. To plan effectively, a planning team must recognize these Modes, identify Activities that occur within them, and isolate the Functions that the users and system perform or are intended to perform within each Activity. The result of the Activity Analyses is a Function Structure.

Half of the purpose of Action Analysis is the enumeration of Functions. The other half is the development of information about these Functions that reveals insight about what happens as they are performed. During Action Analysis, insights are sought about why things go wrong in performing some Functions, and how other Functions manage to be performed well. These insights are uncovered in the Design Factor Description procedure and developed in documents that become part of a qualitative knowledge base. Activity Analyses record information at the Activity level; Design Factors document insights and ideas associated with Functions.

To capture as fully as possible the ideas suggested on Design Factor documents, solution ideas are written up in the Solution Element Description portion of Action Analysis. This is done on simple one-page forms designed to capture enough detail about ideas to give them substance when they are needed later. They have three important sections: “Description” -- a short explanation, “Properties” -- what the idea is, and Features -- what it does. The product of Action Analysis is three sets of critical information: a set of Functions (the Function Structure), a set of insights (Design Factors) and a set of preliminary ideas (Solution Elements).

III Information Structuring

Paradoxically, as useful as the Function Structure is for establishing coverage, it is not the best form of organization for developing concepts. Reorganizing information for use in concept development is the job of two computer programs, RELATN and VTCON.

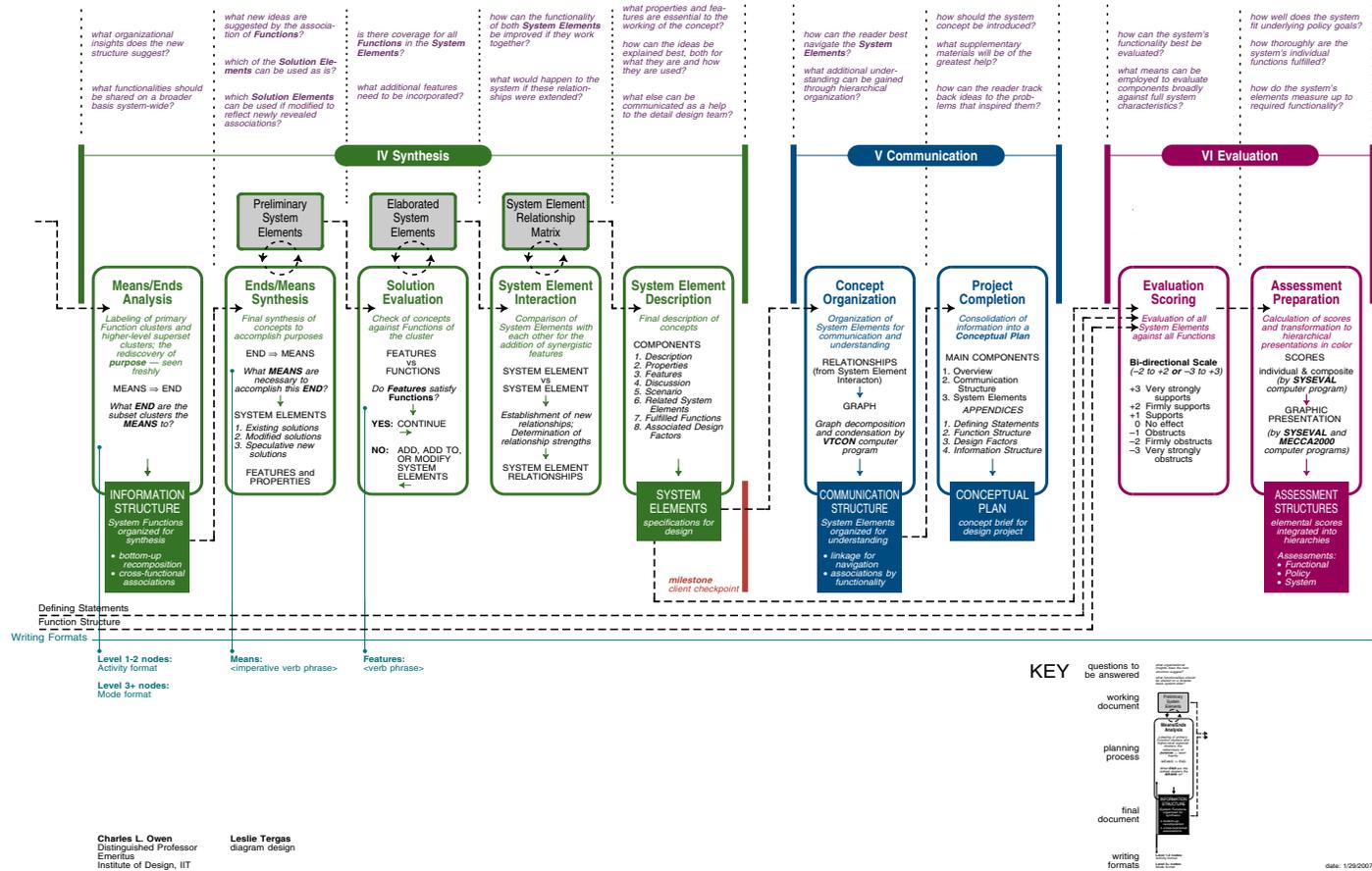
The controlling factor for whether two Functions are associated from the planning standpoint is not whether they are categorically “related” in some manner, but whether a significant number of their potential solutions are of concern to both. Which Solution Elements are of concern to each Function is established in an Interaction Analysis procedure. The RELATN program uses this information in a Graph Construction process to establish links between Functions.

Another program, VTCON, completes the information structuring process. The graph of Functions and links established by RELATN is not easily arranged for visual comprehension. In the Hierarchy Construction activity, VTCON finds clusters of highly interlinked Functions and organizes them into a semi-lattice hierarchy, a visually understandable, very general form of hierarchy most appropriate for planning. The hierarchy is called an Information Structure.

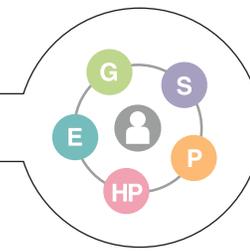


The Structured Planning Process (Phases IV - VI)

Structured Planning is a front-end, concept development process for finding, and communicating the information necessary for advanced planning



The Structured Planning process: phases IV through VI.



IV Synthesis

In its form from the VTCO program, the Information Structure is simply a hierarchical organization. Nodal points above the Function level do not have names. The task of Means/Ends Analysis is to create labels for all nodes in the hierarchy. Moving bottom-up from the known Functions in the bottom level clusters, the question is asked, “To what end are these Functions means?” The answering purpose, as a label, in turn is grouped with its siblings and viewed as means to a higher level end. The process continues to a completely labeled Information Structure.

The process is then reversed as a top-down, structured brainstorming procedure: Ends/Mean Synthesis. In this process, the planning team asks of high level nodes, “what means do we need to meet this end?” As means are established, they are treated in turn as new ends for which means must be found, until the means become concrete enough to be described as final elements of the system (System Elements). Solution Elements originally conceived for the Functions involved are constantly reviewed as possible end products. Original ideas are modified or combined in the light of the means that evolve, and new ideas are added to fill unmet needs revealed by the Information Structure.

System Element Interaction compares System Element with System Element in a search for additional synergies that can contribute to systemic qualities. More than simply recognizing relationships, the planning team proactively seeks out ways for System Elements to work together -- to the extent of modifying one, the other, or both. Changes and additions are incorporated in the properties and features of the individual System Elements.

The last task, System Element Description, completes the write-up of System Elements as specifications, including a succinct description, all relevant -- now essential -- properties and features, and extensive Discussion and

Scenario sections that contain detailed expositions of the ideas in both conceptual and operational terms.

V Communication

Because the result of the Structured Planning process is a complex system, usually with a number of System Elements, a Communication Structure is frequently included as an aid to understanding. This is created during Concept Organization by the VTCO program from an assessment of how important the System Elements are to each other’s operation. Using this structure, the reader can understand the system more easily and navigate its concepts with efficiency.

The product of the Structured Planning process, assembled in the Project Completion section, is a Conceptual Plan, made up of an Overview that provides background and introduces the system, the System Elements that describe the ideas and their relationships, and Appendices that contain all relevant support information, including the Defining Statements, Design Factors, Function Structure and Information Structure.

VI Evaluation

Structured Planning incorporates evaluation among the steps of the process, most notably during Synthesis. It also offers an optional full-system evaluation technique that can be employed to evaluate final results against policy-level and/or function-level criteria. Used for this, it provides merit values hierarchically for the system, its component parts and individual system elements. It can also create similar hierarchical evaluations for the assessment of functional performance and policy performance. Used to compare systems, it can provide system, functional and policy assessments for multiple competitive candidates measured against common function and system structure frameworks.

Introduction

Suppliers of pharmaceuticals, medical equipment, and information services are key players in today's health care system, but they fill a difficult role. On the one hand they develop life-saving products and services, but on the other hand, they are held accountable to their shareholders for increased profits and larger market shares every quarter. These opposing forces make suppliers one of the most maligned players in the health care industry.

We believe that this negative supplier reputation can be addressed through three main themes: *communication*, *value*, and *support*.

Communication

At the core of the problem lies a lack of communication and support between the players in the health care system. Supplier interactions with the government, health plans, and providers are overrun with regulations, standards, and bureaucracy. Each player distrusts the other and blame for the rising costs of health care is constantly being shifted from one player to another. As Michael Porter states, the health care industry is in a state of zero-sum competition. Each player is fighting for a larger piece of the industry pie without realizing that, by working together, they can all benefit while continuing to provide quality care to the public.

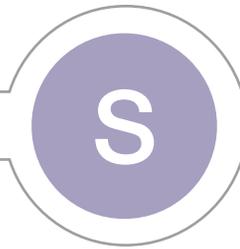
These trust-based relationships can be developed by creating open communication channels between suppliers, the other health care players, and the public. Information about research, products, prices, and sales practices should be easily

accessible and understood by the appropriate recipients. This is the model used in all other commercial industries and the only reason it has not taken hold in the health care industry is because there is a lingering belief that health care is an unfathomable industry. The truth is that it has been, but with the right approach and tools, it can be accessible to everyone.

Value

Currently, suppliers seem to be focused on developing new, revenue-increasing products, without regard to provider and patient needs. Examples include the disproportionate number of lifestyle drugs compared to drugs that save lives. On the other end of the spectrum are medical supply and equipment manufacturers that still develop essential products, but don't take into account provider or patient needs. While these trends are not universally true, they are prevalent enough that they damage the image of suppliers in the health care industry.

The ultimate goal of this project is to provide higher quality care to patients at a lower cost. Suppliers of pharmaceuticals, medical equipment, and information services are in a strong position to create this value. By continuously evaluating their products and collecting feedback from both providers and the public, they can develop better quality products that are both useful and usable. They can also create more value by developing products that treat the entire care cycle, from wellness and prevention, through treatment, and continuing on to rehabilitation monitoring.

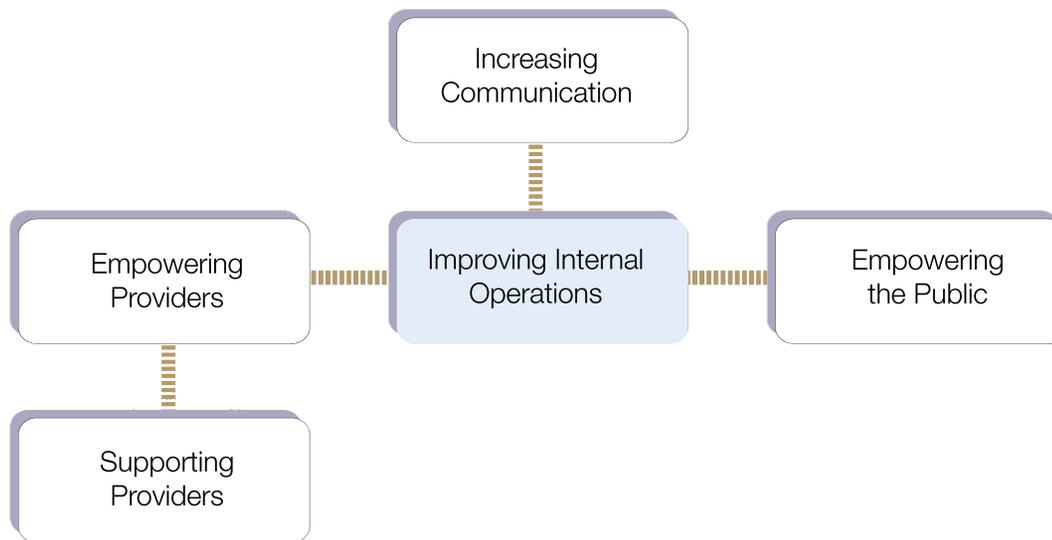


Support

The most important function that suppliers serve after developing products is supporting them. They need to ensure that their medications are being prescribed correctly, their equipment is being serviced regularly, and their devices are being operated safely. The quality of the support services they offer directly affect their relationships with consumers as well as the overall care delivered to the public. At the most fundamental level, supporting a product involves understanding its users and providing services to meet the users' needs.

Our System

The concepts we present in this report aspire to heal the relationships between suppliers and the rest of the health care system, beginning with changes to improve the value of their product offerings. We take the three themes of communication, value, and support and apply them to five main areas: **Improving Internal Operations, Empowering Providers, Supporting Providers, Empowering the Public, and Increasing Communication.**



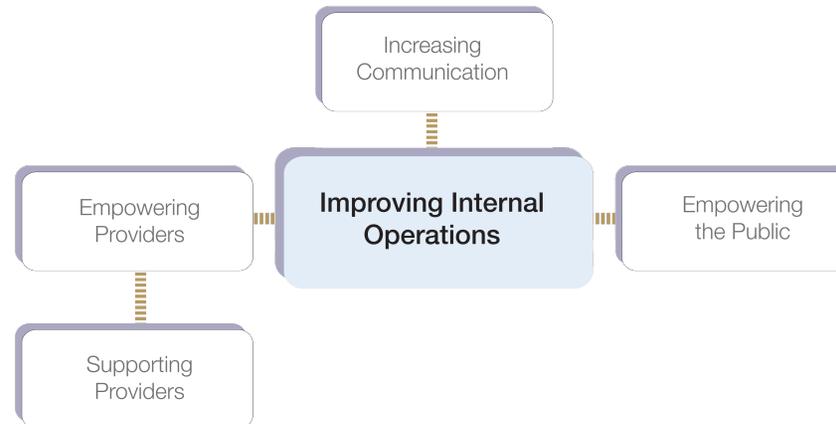
Improving Internal Operations

Suppliers are huge organizations, often housing research, development, business, marketing, and support divisions all under one roof. As an extension of the overall project goal of improving relationships with other players in the health care system, we developed a set of solutions to improve our own internal operations. These solutions focused on the internal operations that we could enhance to ultimately improve our products and offerings.

System elements in this area include:

- Information Database
- Value Metric
- User Studies
- Recognize, Empower, Value (REV)
- Persona

Together, these system elements help suppliers organize their information, evaluate and improve their products, and develop their sales force.





Information Database

Improving Internal Operations

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Product Center
- Persona
- Health Support 2.0
- Official Supplier Database
- Mi-Cycle

FULFILLED FUNCTIONS

- 1 Gather data on products
- 13 Write approval documentation
- 14 Write documentation
- 15 Update documentation
- 23 Provide domain expertise to the government
- 88 Write product documentation

Description

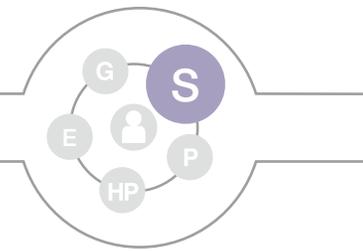
A database that captures, organizes, and returns relevant health care information for suppliers.

Properties

- A set of databases for collecting information
- Connections to other health care databases
- Tools to organize and sort the information
- Tools to analyze the information
- Tools to help suppliers access the data

Features

- Provides the information needed by other supplier system elements
- Tags data and links it to relevant databases for easy retrieval
- Manages internal inventory information
- Manages support requests



Discussion

Information is constantly flowing to and from suppliers and they need a way to manage it. Most supplier organizations already have information systems, so this system element serves as an outline of what an ideal information system should be capable of.

The **Information Database** interacts with four key players:

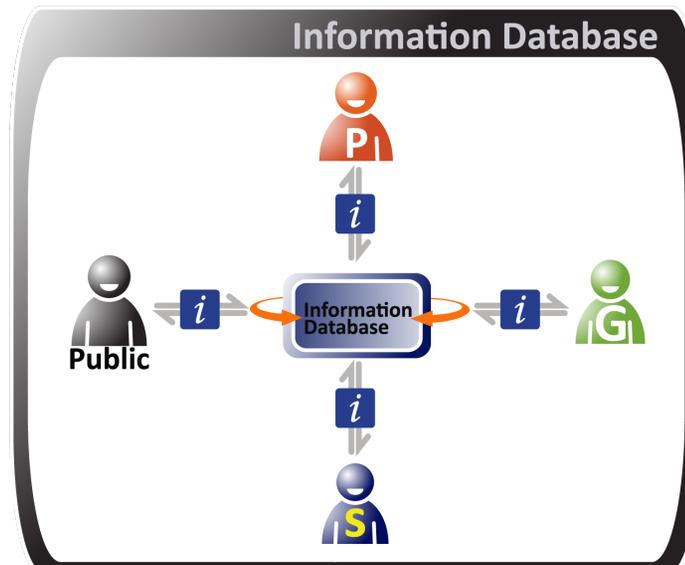
- Government
- Providers
- Public
- Suppliers

The government provides information on new policies and regulations as well as research initiatives and potential funding sources. In the other direction, the Information Database is used to compile reports and documentation to send to the Government. This documentation includes everything from patent applications to proof of adherence to Food and Drug Administration (FDA) and Drug Enforcement Administration (DEA) requirements, applications for R&D funding, and clinical trial results.

Providers share many different types of information with suppliers. Before products are released, they help suppliers run clinical trials and send the results back to the **Information Database**. After purchasing products,

they can send usage information and evaluations back to the suppliers as well as their inventory information. Tools like **Mi-Cycle** can then be built on top of the **Information Database** to help suppliers and providers maintain stock levels and forecast demand trends.

Suppliers do not currently interact extensively with the public, but in this portfolio we discuss ways in which this relationship could be developed. When suppliers create offerings directed to the public, the Information Database can be utilized to provide them with relevant information. In return, the Information Database could also store consumer feedback and usage information.



89 Update documentation

ASSOCIATED DESIGN FACTORS

- 17 Assembling R&D findings takes a lot of time
- 18 Writing R&D proposals takes a lot of time
- 19 Writing approval documentation takes a lot of time
- 20 Documentation deposited in different locations
- 50 Reference materials are lost



Value Metric

Improving Internal Operations

SUPERSET ELEMENT

- Official Supplier Organization

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Product Center
- EZ Evaluate
- EZ Decide

FULFILLED FUNCTIONS

- 16 Evaluate quality of products (G)
- 37 Evaluate quality of products (P)
- 75 Evaluate quality of products (HP)
- 91 Evaluate quality of products (E)

ASSOCIATED DESIGN FACTORS

- 12 Quality evaluations are biased (products and maintenance services)
- 13 Different metrics are being used

Description

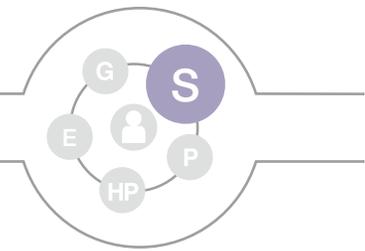
An objective unit of measurement for evaluating and comparing health care products such as devices, pharmaceuticals, and services across all suppliers.

Properties

- Unit of measurement developed by the **Official Supplier Organization**
- Quantitative and qualitative measures

Features

- Provides baseline metrics for evaluating and comparing products
- Helps consumers of health care products determine the right product to purchase



Discussion

Two widely used practices in the health care industry are adopted for generating the **Value Metric**: Quality Adjusted Life Years (QALY) and Health Technology Assessment (HTA). QALY is presently used in medical decision making as an outcome measure of both the quantity and quality of life while HTA is used for considering the effectiveness, appropriateness and broader implications of technologies. HTA assesses both the clinical effectiveness and the cost effectiveness of a given technology.

One of the main outcomes of the HTA is the incremental cost-effectiveness ratio (ICER) and it is a measure of the additional cost of the new technology over and above the existing technology. In determining the expected health care gain, QALY is also generally used.

Since QALY is used for both pharmaceutical and technical products, and it is widely adopted by the medical world, it will be adopted as the Value Metric for health care products as well. This will be the objective standardized metric that is made available for users in determining if the product is suitable for their use.

In communicating this value to users, QALY will be translated into **Value Metric** which is a more user friendly unit. For pharmaceuticals, **Value Metric** might consider the number of required doses per day, the number of side effects, and average time for recovery. For physical devices,

it might consider characteristics like mean time between failures, ease of use, and repair costs.

The **Value Metric** will be developed and distributed by the **Official Supplier Organization** to ensure that all health care products are evaluated based on the same set of baseline characteristics.

to measure product quality

- 14 Different metrics are being used to measure service quality



User Studies

Improving Internal Operations

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Product Center
- Buddy System
- EZ Evaluate
- Share n' Care

FULFILLED FUNCTIONS

- 33 Analyze results of product usability tests
- 70 Assemble results of usability tests

ASSOCIATED DESIGN FACTORS

- 22 Unable to determine appropriate samples
- 26 Sales people don't sell products based on provider and patient needs

Description

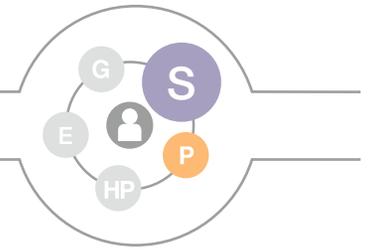
A research tool to help determine the needs of providers and the public. Can also help suppliers make ergonomic and intuitive products.

Properties

- Methods to determine the needs of providers and the public
- Methods to improve the usability of devices

Features

- Suppliers perform user research before and during product development to make better products
- Helps to identify consumer needs
- Ensures that released products are needed and usable (and therefore marketable)
- Reduces training time for new devices
- Reduces the need for major changes after product release
- Collects consumer feedback from the **Product Center**, **Share n' Care** events, and **Buddy System** relationships



Discussion

Manufacturers of advanced medical equipment have historically focused on the technology over the needs of their users. This was not a problem because, much like the computer industry in its early years, there were only a few players in the industry and the devices were only being used by experts. As competition in the medical equipment industry grows, manufacturers will need to start focusing on user needs to differentiate themselves.

Most user and market research methods can be directly applied to the health care industry to develop more useful and usable products. Examples include user observations, ethnographic studies, lead user analyses, and usability studies. Even collecting user feedback is valuable for improving future versions of products. Nurture by Steelcase and the SPARC Innovation Center at the Mayo Clinic are two examples of companies actively employing user research methods to improve their offerings.

Besides developing better products for consumers, suppliers can directly benefit from conducting user research before and during product development. By spending more time up front in the development phase of new products, they can shorten the training time for new users as well as reduce the need for major changes after the first release. These will ultimately save the suppliers both time and money. It will also improve the supplier's image at a time when medical device manufacturers have a negative reputation.



Recognize, Empower, Value (REV)

Improving Internal Operations

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

None

FULFILLED FUNCTIONS

None

ASSOCIATED DESIGN FACTORS

- 26 Sales people don't sell products based on provider and patient needs
- 27 Sales people manipulate drug statistics
- 28 Providers cannot easily verify what sales people tell them
- 30 Providers are incentivized to purchase/prescribe products
- 31 Sales people develop unhealthy relationships with providers

Description

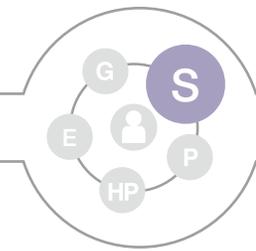
A process to recognize, empower and value supplier sales representatives. Helps develop cohesive sales forces that continue to strengthen over time.

Properties

- Three phased process
- Sales Mentors assigned to each sales representative
- Tailored Training program
- Incentive program

Features

- Develops a team building atmosphere
- Implements a reward and acknowledgment program that benefits the entire supplier organization
- Unveils the underlying issues with sales
- Creates attainable sales representative goals
- Increases employee retention



Discussion

All potential sales representatives have personal goals in mind when considering sales positions within the health care industry. There are many motivators for these sales representatives that may include working with industry leaders, gaining financial wealth, or helping to spread life-saving products. They may also want flexibility to move throughout sales. Supplier organizations need to organize their staff while taking in consideration value, service, and cost efficiency. They can do this by planning methods carefully to attract and retain sales representatives that will add value to their business without rewarding poor or non-performance efforts.

Recognize

The initial phase of **REV** is the Recognize phase. In this phase, suppliers and their sales representatives develop a mutual understanding of the issues and goals of the sales representative using quantitative and qualitative analyses. The strategy here can involve introducing the sales representative to the company’s culture from multiple views.

Empower

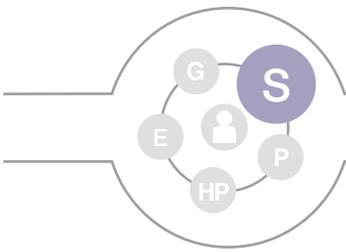
Once the sales representatives goals have been recognized, she can then move to the Empower phase. In this phase, the team member is empowered by learning the necessary skills to operate, communicate and carry out her goals.

This empowerment phase is overlaid with a personal plan that is developed with an advisor, known as a Sales Mentor. The Sales Mentor helps the team member plan a Tailored Training program.

Value

After the sales representative is equipped with all the necessary information to perform, the supplier organization encourages quality outcomes during the Value phase. This is where the company establishes a sales representative appreciation process while the team member continues to learn skills and follow her action plan. The appreciation process creates a structured rewards and incentive program for sales representatives and shows how the principles of performance-related earnings can benefit the entire organization.

With the implementation of **REV**, suppliers can expect higher retention of sales representatives, which will improve the quality of the services they offer as well as reduce the costs needed to continually train new hires.



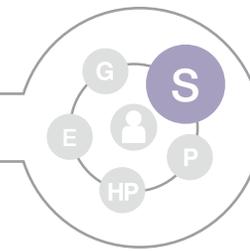
Scenario

A supplier has just hired Lisa, a new sales representative. In order to become a valued employee, Lisa needs to become familiar with the supplier organization. To ensure this happens, the supplier enrolls Lisa into the **REV** program.

During the Recognition phase, Lisa is introduced to the company. She performs a qualitative and quantitative analysis of her new company, trying to find the unique role that she can play. She adds in existing knowledge and experiences into her evaluations whenever possible. By taking the time initially to understand the company that she will be working for, she has already added value to the organization. This analysis reveals issues and goals of the individual, group, department, and most importantly the organization.

After coming to understand the company, Lisa is ready to plan her career development path. In the Empower phase, she is paired with a Sales Mentor and together they create an Action Plan, listing short term and long term goals. They also schedule appropriate training sessions to empower her to achieve these goals.

Throughout her career at the supplier company, Lisa's hard work and progression along her Action Plan are rewarded. She feels like a valued member of the sales force and can clearly see her development path to management roles.



Persona

Improving Internal Operations

Description

A tool that categorizes consumers into archetypical profiles to help suppliers tailor their product offerings. Built on top of the **Information Database**.

Properties

- Fictitious profiles developed to represent different user types
- Profiles for purchases, providers, intermediaries, payers, and end users

Features

- Extracts patterns from behavioral data, user contexts, goals, and attitudes
- Projects a specific and consistent understanding of various target users
- Helps suppliers determine the needs of users more effectively
- Matches users to a persona archetype in order to provide better offerings

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

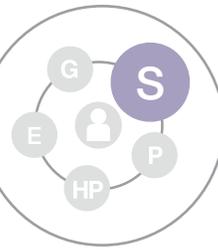
- Information Database
- Just For You Packages

FULFILLED FUNCTIONS

- 31 Assemble relevant samples
- 41 Assemble relevant samples
- 47 Offer product packages
- 90 Assemble relevant samples

ASSOCIATED DESIGN FACTORS

- 11 It's tedious to update documentation
- 22 Unable to determine appropriate samples
- 26 Sales people don't sell products based on provider and patient needs

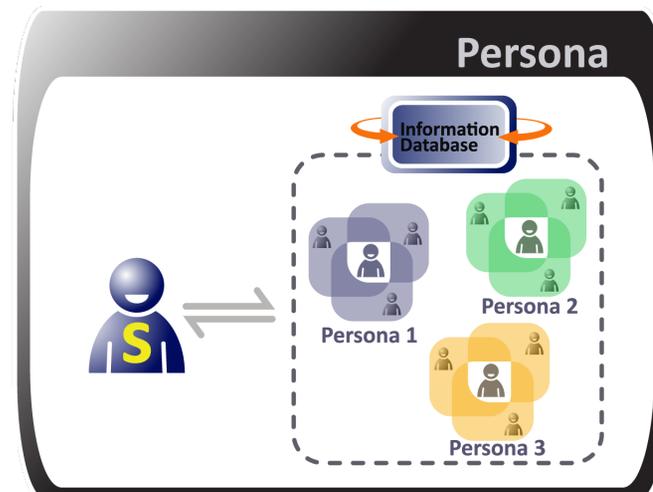


Discussion

Personas are archetypes of users whom the suppliers interact with. They are defined based on their needs, health profiles, and decision making capabilities around the product offerings and services.

Persona, the tool, sits on top of the **Information Database**. The above-mentioned information is collected from consumer evaluations, supplier-provider conversations, and purchasing habits. It is then tagged, categorized, and released to **Persona**.

By understanding the general profile of their end users, suppliers can offer personalized products and recommendations. These customized offerings are discussed later under **Just For You Packages**.



Examples of possible personas developed after studying a sample of users are:

- *Young Achievers*. The characteristics defining this group include high frequency of exercise and well below average age and hypertension. They comprise more than half the total population (58.1%). Although largely a low-risk group, the young achievers had a high prevalence of alcohol consumption and acute drinking.
- *Risk-Takers*. This group was characterized by high levels of smoking and low levels of exercise. They were generally above average on weight and hypertension.
- *Middle-Aged Hypertensives*. People of this group are generally older in age, overweight, and hypertensive, but otherwise cautious with regard to risky behaviors like smoking, drinking, and exercise. About 60% of this group was overweight or obese, and about three-quarters were hypertensive.
- *Multiple Risk*. This group was characterized by hypertension, obesity, above average age, and greatly below average education and income. Although low on drinking and average smoking, only a quarter of this group reported exercising. Additionally, this group had the highest percentage of elderly people, women, and minorities.

Empowering Providers

The main point of contact between suppliers and the rest of the health care system is with providers. It is providers who purchase our products and use them to administer care to patients. As such, the supplier-provider relationship is critical to the success of the health care industry.

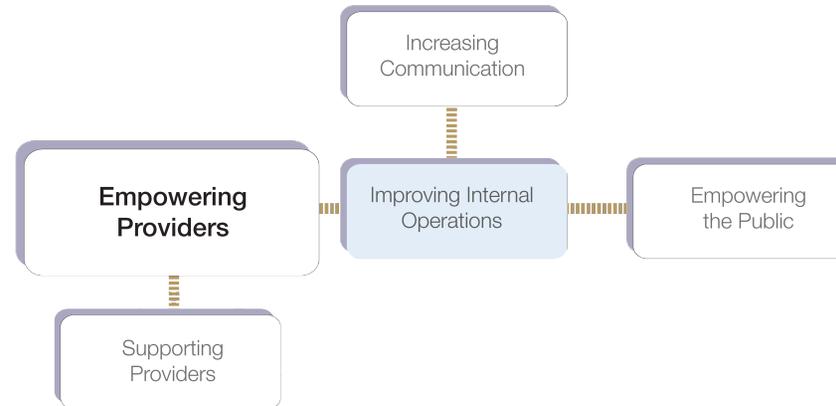
Sales representatives, especially those from pharmaceutical companies, are some of the most vilified people in the health care industry. They are accused, sometimes rightly, of using unethical sales practices to promote their products.

We believe that suppliers can empower providers and by doing so receive valuable feedback for improving their own offerings.

System elements in this area include:

- Buddy System
- Phase I Sales
- Just For You Packages
- Good Practices
- EZ Decide
- Flex Plans

Together, these system elements help suppliers develop strong, trust-based relationships with providers.





Buddy System

Empowering Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Phase I Sales
- Just For You Packages
- Flex Plans
- REV

FULFILLED FUNCTIONS

- 47 Offer product packages
- 53 Maintain product sales and repair teams

ASSOCIATED DESIGN FACTORS

- 7 No way to know when a device fails on the Provider's end
- 48 Training for providers needs to be repeated when products are updated or new providers

Description

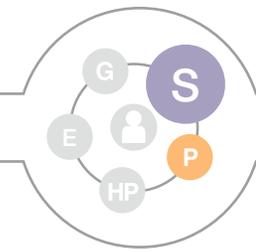
A way for suppliers to organize their sales force to provide better services to providers. Based on the semi-independent, small team organization of Whole Foods Markets' sales force where each team is composed of a sales representative, trainers, and technicians.

Properties

- Small supplier teams, each composed of a sales representative, trainers, and technicians
- The sales representative in each team is the team leader
- Each team is assigned to a set of providers
- Several teams are overseen by a manager
- General guidelines that all teams must follow
- Managers and leaders have the freedom to modify services to meet their providers' needs
- Internal portal for cross-team communication

Features

- Allows supplier teams to get to know each other and develop cohesive, efficient teams
- Allows providers to develop stronger relationships with their suppliers
- Creates an open feedback channel between suppliers and providers based on familiarity
- Allows suppliers to tailor their services to specific providers
- Creates a sense of competition and a learning environment between supplier teams



Discussion

Many of the problems in today’s health care system can be attributed to poor communication between the different players in the system. Specifically, many providers blame suppliers for unreasonably high prices, citing their opaque and potentially unethical marketing practices. Many of their accusations are true, but suppliers have been forced to use these techniques to survive in the competitive market. Since many providers and health plans look only at prices, suppliers cannot compete on the quality or effectiveness of their products. Instead, they offer special discounts and advertise directly to consumers to gain market share.

The **Buddy System** is an attempt to improve the communication between suppliers and providers. With the **Buddy System**, suppliers split their customer service force (i.e. sales representatives, trainers, and maintenance engineers) into small teams with each team assigned to a subset of providers. At the most basic level, this will allow providers to get to know their suppliers and develop a stronger relationship. If supplier teams are able to choose or bid for specific providers, this relationship will be even stronger since an active choice was involved.

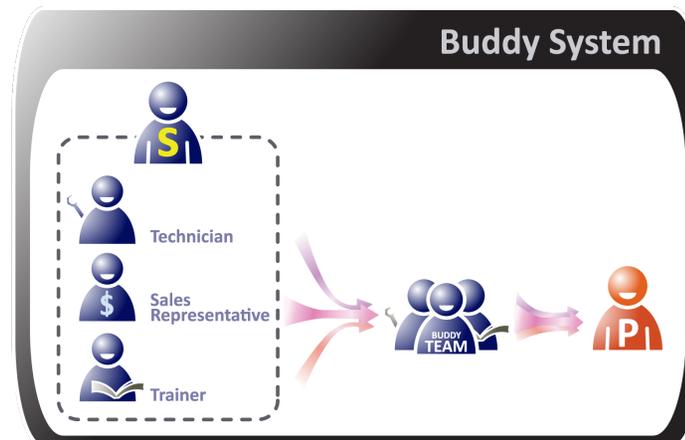
Over time, and with semi-autonomous teams, the **Buddy System** will allow suppliers to tailor offerings to providers. For example, rather than offering lower prices for bulk sales, suppliers can offer lower prices for **Just For You Packages**, specific combinations of products that are

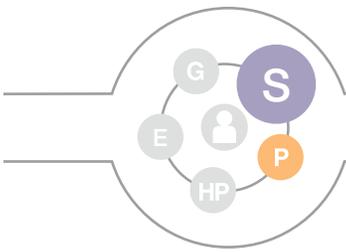
most useful for the providers. As supplier teams learn more about the providers, their expertise, and their patient demographics, they can also direct research and development in appropriate directions.

When a strong, trust-based relationship has been formed, this supplier-provider connection can be an effective feedback channel. Providers can inform suppliers of their needs, their concerns about products, and their concerns about supplier services. Suppliers can, in turn, use this information to improve their own products and services. They can also return to providers for clinical trials and usability tests. Since providers have a direct link to patients, they can help suppliers determine which directions to pursue in terms of research and development.

purchase products

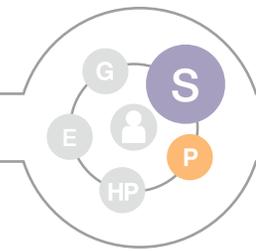
- 57 Training sales and repair teams is resource intensive
- 58 Providers don't know how to fix equipment by themselves





On the supplier end, these small, semi-autonomous teams will add importance to the job descriptions of the members. Since their roles are more pivotal, their responsibilities and pay will increase. This, combined with **REV**, an employee appreciation program, will decrease turnover and the expenditures needed to train new hires. Rather than being a member of a massive sales team, people are members of small, multi-disciplinary, customer service teams.

To improve the performance of these teams, suppliers can give the teams the freedom to adjust their services as needed, depending on their providers. They can then create an internal portal that allows teams to compare their performances and learn best practices. These inter-team communications will create a sense of competition that will drive the teams to continually re-evaluate and improve their services.



Phase I Sales

Empowering Providers

Description

A model for holding sales discussions with providers. Specifies that product sales must be conducted in two phases, where negotiations cannot occur until the second phase.

Properties

- Phase one of a two-phased sales pitch
- An informational phase where suppliers introduce providers to new research and products
- Supporting materials left with the provider for independent investigation
- A rule that nothing can be sold in phase one
- A negotiation and sales phase after the provider has decided to purchase a product

Features

- Allows suppliers and providers to share ideas in an enforced no-sales environment
- Allows providers to consider products objectively without any pressure
- Discourages manipulation or false representation of data
- Encourages open discussion between providers and suppliers
- Allows providers to do more independent research on products before making a purchasing decision

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Buddy System
- Good Practices
- Reference Materials
- Information Database

FULFILLED FUNCTIONS

52 Continue informative relationship

ASSOCIATED DESIGN FACTORS

- 26 Sales people don't sell products based on provider and patient needs
- 27 Sales people manipulate drug statistics
- 28 Providers cannot easily verify what sales people tell them



- 29 Purchasing contracts and prices are based on special discounts
- 30 Providers are incentivized to purchase/prescribe products
- 31 Sales people develop unhealthy relationships with providers

Discussion

Suppliers are notorious for their sales tactics. Doctors get free lunches, gifts, and samples from suppliers every day. They are presented with a lot of data and promotional materials and then asked to make a purchasing decision. Providers have to think about what's best for their practice and their patients, without becoming biased by the incentives that suppliers are offering.

Unfortunately, most providers and health plans are more concerned about price than about quality or effectiveness. As such, nothing differentiates one product from another one, except for the price and other incentives suppliers might offer to the buyer.

Phase I Sales remove the stress from this relationship. Every product is pitched to buyers in two phases. In the first phase, sales representatives introduce the new product to buyers. There is explicitly no option to buy or sell at this meeting. It is meant only to inform the buyer of the indications of the product and what its advantages and disadvantages are. Knowing that this first meeting has no obligations attached to it, the buyer can be at ease and spend the time asking questions instead of suspecting the sales representative's motivations.

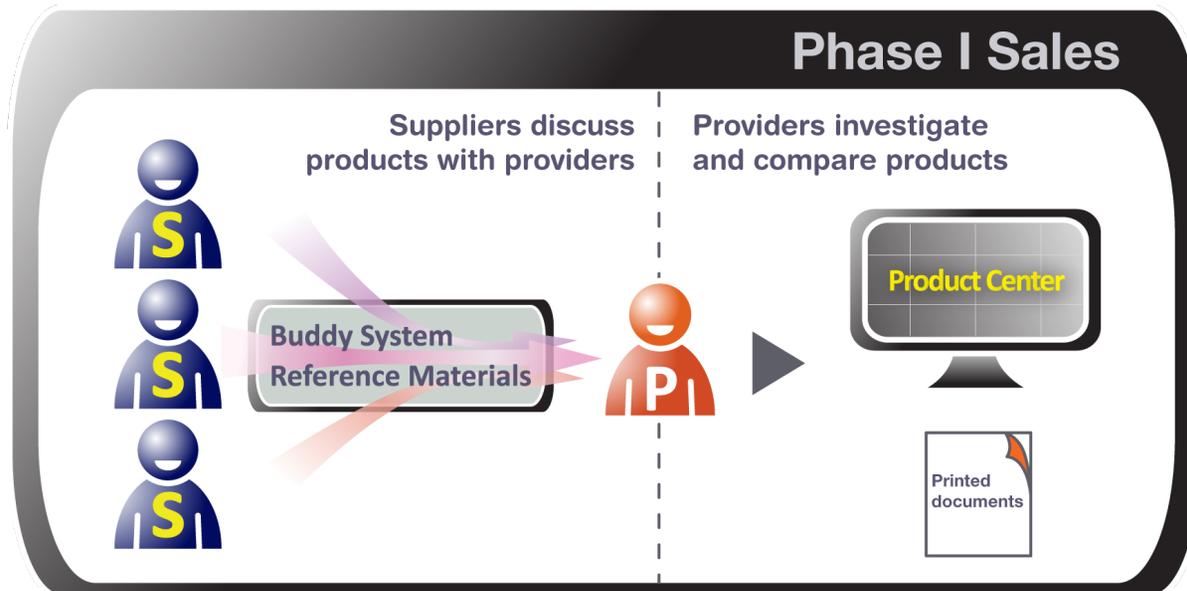
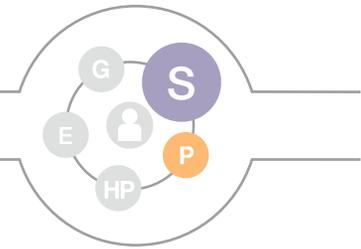
At the end of the meeting, the sales representative leaves supporting **Reference Materials** with the buyer. The sales representative may also refer the provider to the **Product Center** where all research results, product information,

and prices are made available to the public. The buyer can continue to learn more by investigating the supporting material on her own time. There is no sales representative hovering over her shoulder telling her how to interpret the information.

After the buyer has had enough time to make an informed decision, the sales representative approaches her again to see if she has any questions or would be interested in placing an order. In this phase, sales representatives may negotiate prices and offer ethical promotions, but this occurs only after the buyer has decided to purchase the product based on its own merits. Incentives are also limited by the **Good Practices** guidelines set forth by the **Official Supplier Organization**.

On the supplier's end, **Phase I Sales** allow sales representatives to get to know their buyers better while saving money on all the promotional materials and other marketing expenditures that they are no longer providing.

Used in conjunction with the **Buddy System**, **Phase I Sales** can greatly improve supplier-buyer relationships, enabling open communication between the two groups.





Just For You Packages

Empowering Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Buddy System
- Persona
- Supplier Partnerships
- EZ Decide

FULFILLED FUNCTIONS

- 41 Assemble relevant products
- 47 Offer relevant product packages

ASSOCIATED DESIGN FACTORS

- 26 Sales people don't sell products based on provider and patient needs

Description

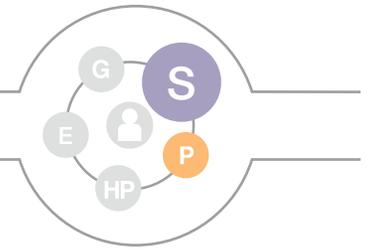
Customized product packages tailored to providers' preferences and needs for treating medical conditions - as opposed to specific symptoms. Compiled from a supplier's product portfolio or from a partnership between multiple suppliers.

Properties

- Tailored product packages for providers
- Product packages developed from multiple suppliers (potentially developed by **Supplier Partnerships**)
- Discounted package rates
- Products grouped according to provider needs (determined by **Persona**) or to provide full-cycle-of-care treatments
- Modular products customized to meet provider needs

Features

- Develops positive relationships between suppliers and providers
- Encourages collaboration between suppliers
- Encourages product interoperability
- Encourages holistic solutions that offer unified full-cycle-of-care treatment
- Incentivizes providers with lower package prices
- Reduces waste of resources by using just-in-time manufacturing
- Uses **EZ Decide** and **Buddy System** relationships to determine appropriate products for each provider

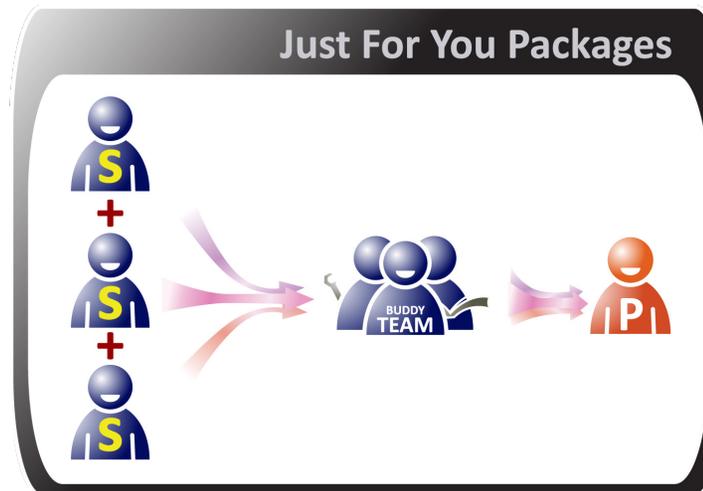


Discussion

Just For You Packages use information from **Buddy System** relationships and **Persona** to determine a provider's needs and preferences. Sales representatives then use that information to compile sets of products tailored to each provider. These products can be offered at a discounted price.

Besides offering better services to providers, **Just For You Packages** also encourage suppliers to develop interoperable and modular products that can easily be customized for individual providers. When a supplier doesn't have a competency needed to provide products that treat full-cycles-of-care, **Just For You Packages** encourage the development of partnerships with other suppliers.

By developing stronger relationships with providers and collaborating with other suppliers, suppliers will be able to offer better **Just For You Packages**, ultimately offering better care to patients. For example, a manufacturer of hospital beds could partner with a manufacture of PET scanners to create beds that can be attached directly to the scanner. Providers benefit from this package because it will be discounted and minimizes their operational costs, patients benefit from not having to move from bed to bed whenever they need to have a test done, and suppliers benefit from the increased market share they will get as a result of their higher-value product offerings.





Good Practices

Empowering Providers

SUPERSET ELEMENT

Official Supplier Organization

SUBSET ELEMENTS

- Promotional Periods

RELATED ELEMENTS

- Buddy System
- Just For You Packages

FULFILLED FUNCTIONS

48 Negotiate contracts

ASSOCIATED DESIGN FACTORS

- 26 Sales people don't sell products based on provider and patient needs
- 27 Sales people manipulate drug statistics
- 28 Providers cannot easily verify what sales people tell them
- 29 Purchasing contracts and prices are based on special discounts

Description

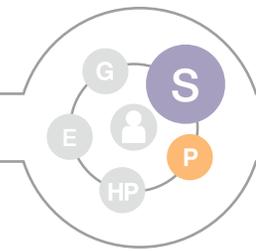
A set of guidelines to ensure ethical sales practices. Published by the **Official Supplier Organization**.

Properties

- A set of solutions to encourage ethical sales practices
- Guidelines for sales representative interactions with providers
- Supplier and sales representative blacklists
- Guidelines set by the Official Supplier Organization

Features

- Holds sales representatives accountable for their team members' actions
- Publishes blacklists to ensure industry-wide "good practices"
- Publishes guidelines to promote the company's image in the public eye
- Suggests ways to promote products ethically



Discussion

In order to improve supplier-provider relationships as well as the public opinion of suppliers, the **Official Supplier Organization** publishes **Good Practices**. These are a set of guidelines to ensure ethical sales practices between suppliers and providers.

When sales representatives are found to be violating **Good Practices**, they will be publicly blacklisted. If a certain number of sales representatives from one company is blacklisted, the company itself is put on a blacklist. The **Official Supplier Organization** determines whether an accused sales representative has really violated the guidelines.



Promotional Periods

Besides creating negative incentives, **Good Practices** also offers suggestions for how to conduct ethical sales practices. **Promotional Periods** is one such suggestion. They are standard trial periods that allow providers to test run products for a period of time either for free or at a steep discount. After the **Promotional Period** they can decide whether they want to purchase or return the product.

Promotional Periods is a part of **Good Practices** because they drastically reduce the advantages of providing incentives to providers. If providers are allowed to try a product before purchasing it, they can make their decision based solely on its performance. **Promotional Periods** also force suppliers to make the value of their products evident right away.

- 30 Providers are incentivized to purchase/prescribe products
- 31 Sales people develop unhealthy relationships with providers



Empowering Providers

Scenario

Mike just started working as a supply chain manager at a large hospital and is in charge of all major purchasing decisions. He expects, and dreads, all the sales pitches he will need to sit through, trying to sift out the real value of products from the smooth-talking, lunch-providing sales representatives. He also fears that he will be subconsciously affected by the incentives and make purchasing decisions that are not in the best interest of the hospital and its patients.

Imagine his surprise when his first “sales meeting” with one of their major suppliers consists of an informative session with three people, a sales rep named Lisa, a trainer, and a technician. Lisa explains that she’s the leader of a small team of trainers and technicians under **Buddy System** that will be working closely with the hospital throughout their relationship. She then spends some time talking about what her company and team, specifically, has been doing with the hospital in the past few years and how they’re hoping to continue the relationship. She introduces the trainer and technician and they talk a little about what their roles are. At the end of the session, Lisa thanks him for his time and leaves. No sales pitch!

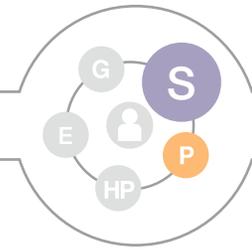
This relationship continues over the next few years. Lisa frequently visits the hospital to share new research or products that she thinks Mike will be particularly interested in. She’s come to know his hospital and its patient demographic well, so Mike usually trusts her when she suggests a specific product. Lisa even compiles

packages of products, called **Just For You Packages**, that she thinks the hospital will benefit from and allows the doctors to use the products for a free **Promotional Period** before making a decision about buying.

Lisa uses a two-phased sales approach. She never pressures him to purchase a product the first time she introduces it to him. Instead, she just tells him about the product and why she thinks his patients will benefit from it. Lisa calls this **Phase I Sales**. She then leaves him with more **Reference Materials** that he can investigate on his own and comes back a week later to see if he’d like to test-run the product or purchase it.

Lisa’s small team of trainers and technicians are on hand whenever necessary and become friendly with the hospital staff. Since it’s always the same trainers and technicians, Lisa’s team knows what the in-house team is capable of and can diagnose and fix problems quickly. Whenever Mike has a question, he doesn’t call a central 800 number, he calls Lisa and Lisa does whatever is necessary to fix the problem.

On her end, Lisa loves working with her team. She knows their strengths and weaknesses and can delegate problems to the best person to handle them. Since each team member works with the providers in a different way, they can compare notes and determine the best ways to work with each provider. There are certain guidelines that every sales team has to follow, but Lisa and her team have the freedom to tailor their services. For example, they know



that Mike's hospital has a great intranet so they prefer digital documentation and manuals that can be uploaded to their system. Another hospital still depends on paper manuals though, so Lisa makes sure that she brings multiple copies with her when she sells them a product. This way, they can have a copy of the manual in every room where the product might be used. Resources aren't wasted by providing both formats to both providers.

Back at work, Lisa and her team are always comparing notes with other teams in their company. All the providers are asked to evaluate the supplier's service and this feedback, compiled with sales results, is used to rank all of the supplier teams monthly. Teams are encouraged to try different sales tactics and then report back about their successes and failures. This creates a sense of friendly competition between all the teams.



EZ Decide

Empowering Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Product Center
- Value Metric

FULFILLED FUNCTIONS

None

ASSOCIATED DESIGN FACTORS

- 24 Providers are unable to compare products across suppliers
- 32 Product details are difficult to understand

Description

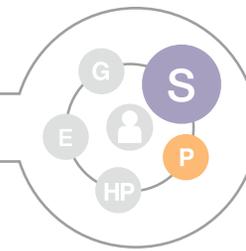
A tool to help providers make purchasing decisions based on their needs and preferences. Can be used standalone or as a part of the **Product Center**, in which case it is also available to the general public.

Properties

- A decision making support tool
- Different formats are used

Features

- Helps individuals, physicians, or other buyers make health care purchasing decisions
- Guides users through the various steps in deciding the best health care product for their needs
- Captures the health conditions of users and then suggests various suitable health care products
- Provides the probabilities of positive/negative outcomes occurring if the product is purchased
- Improves users' knowledge and satisfaction with the decision-making process
- Encourages users to consider alternatives and choose products that best meet their personal needs and preferences



Discussion

It is very difficult for people to make decisions about which health care products, either pharmaceuticals or devices, best meets their needs. Cost is commonly used as the yardstick in the absence of any other guides. **EZ Decide** is a decision making support tool to help bridge this gap. **EZ Decide** guides users through the essential steps in making a good decision. These steps are detailed as follows :

Step 1: Determine the health care condition to be addressed.

People provide the existing signs and symptoms, disease stage, and other key indicators of present health condition.

Step 2: Collect personal preferences

People specify their personal preferences. Some people are willing to pay more for a faster recovery while others are keen to explore a cheaper option even if it means a more painful treatment. This step allows them to specify these choices.

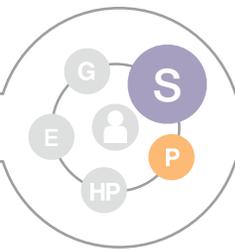
Step 3: Suggest products

EZ Decide recommends a range of products based on the user's needs and preferences. The products are presented with supporting information to help people compare them and decide which would best fit their needs. By offering

a small set of suggestions, **EZ Decide** empowers people without overwhelming them.

If users prefer more details, **EZ Decide** can display a full decision tree to help them make their decisions. The decision tree shows all the possible outcomes, both positive and negative, of using a device and determines the probability of each one happening. Using this information, people can decide which device is best for them.

Behind the scenes, **EZ Decide** cross referenced the user's preferences with standardized measures of quality determined using **Value Metric** to come up with its list of suggestions.



Scenario

David is recently diagnosed with diabetes and is told that he should purchase a blood glucose meter to monitor his health at home. He goes to his doctor, who uses EZ Decide to recommend a monitor that will suit David's needs.

The doctor asks David a few questions to determine his preferences. He learns that David doesn't have a lot of money to spare, but leads a high-risk lifestyle for diabetics (e.g. eats an unhealthy diet) and therefore cares very much about the precision of the device. Although David would prefer the device to be user-friendly, he's relatively tech savvy so he isn't as concerned about the interface of the device.

The doctor inputs these preferences into EZ Decide and a list of recommended blood glucose monitors is presented. The doctor goes over the advantages and disadvantages of each of the monitors with David and ultimately lets David choose which one best fits his needs.

EZ Decide

1

Search > Blood Monitor

2

Decision factor

- Cost
- Precision
- Speed
- Interface
- Durability

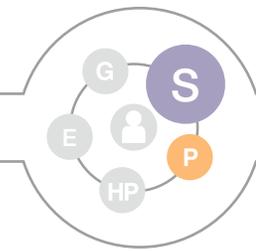
3

Comparison

Value Metric

4

e-Purchase



Flex Plans

Empowering Providers

Description

A set of purchasing and servicing plans that enables providers to purchase advanced medical equipment that they would otherwise not be able to afford.

Properties

- Flexible purchasing and support plans for medical equipment and services
- Multiple plans based on provider needs and cost constraints
- Manuals, tools, and software to help providers repair their own devices

Features

- Determines provider needs using **Persona** and from **Buddy System** interactions
- Allows buyers to compare and choose their own plans
- Emphasizes repair and reuse, over buying new products
- Allows **Buddy System** teams to develop their own purchase and maintenance plans based on their specific providers
- Reduces waste as products are used longer
- Encourages suppliers to consider ease of repair and reuse when designing new products

SUPERSET ELEMENT

None

SUBSET ELEMENTS

- Empowering Warranty
- Legacy Contracts
- Product Leases

RELATED ELEMENTS

- Persona
- Buddy System
- Just For You Packages
- EZ Train

FULFILLED FUNCTIONS

- 29 Gather data on drugs and products
- 42 Collaborate to generate new product ideas
- 47 Offer relevant packages
- 48 Negotiate contracts



- 58 Recall bad products
- 60 Loan temporary equipment

ASSOCIATED DESIGN FACTORS

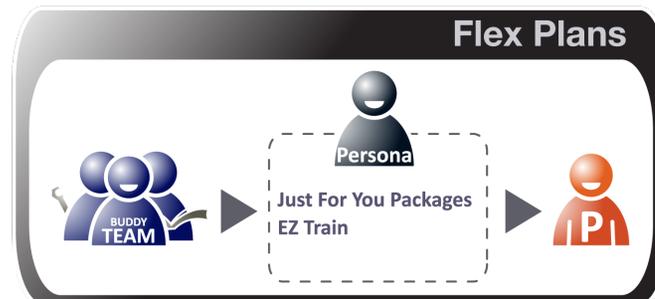
- 8 Providers cannot easily verify what sales people tell them
- 24 Providers are unable to compare products across suppliers
- 30 Providers are incentivized to purchase/prescribe products

Discussion

Since buying and maintaining advanced medical equipment can be very expensive, suppliers need to offer flexible purchasing and servicing plans to providers. **Flex Plans** is one way to do this, and are especially useful for those with limited financial resources.

All **Flex Plans** encourage providers to perform routine checks of their equipment and learn how to do basic repairs. Suppliers enable them by providing the training, manuals, tools, and software they need to maintain their own equipment.

Flex Plans can be a part of a **Just For You Package** developed under the **Buddy System**. The buddy team's sales representative would use **Persona** and her interactions with the provider to determine the purchasing and servicing plan most appropriate for him. She could combine the product with a Flex Plan warranty and an **EZ Train** subscription to minimize the cost of the product for the provider.



While there can be many types of **Flex Plans**, three variations are **Empowering Warranties**, **Legacy Contracts**, and **Product Leases**.

Empowering Warranties

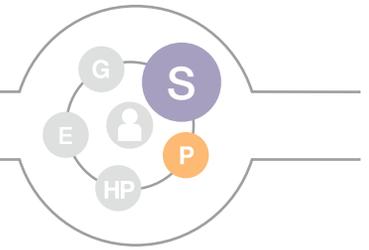
These product warranties are cheaper than regular plans, but require that providers first try to service their own equipment before contacting the supplier support team.

To ensure that the products are still providing quality care, providers are required to attend annual **Brand Certification** classes and suppliers perform random checks either remotely or in person via **Buddy System** teams.

Besides costing less for the providers, Empowering Warranties also save suppliers money by reducing the number of service calls they need to make.

Legacy Contracts

Since medical devices are built to a high standard of quality, they continue to function long after they are obsolete. Currently suppliers stop supporting devices after a certain number of years and providers are forced to either replace their equipment or find third-party companies to maintain it.



Legacy Contracts are higher-priced than standard warranties, but guarantee that suppliers will continue to manufacture spare parts and offer repair services for obsolete equipment. For providers, this higher warranty fee is still cheaper than purchasing new equipment when what they have is still working fine.

Legacy Contracts expire when a product can no longer operate at its maximum effectiveness. When this happens, a retirement and upgrade clause take effect, allowing suppliers to take the product back and offering the provider a discount for upgrading to a newer model. The retirement clause allows suppliers to recycle the materials and also encourages them to consider cradle-to-cradle manufacturing when developing products. The upgrade clause incentivizes providers to stay with the same supplier.

Product Leases

Many suppliers currently offer leasing programs for their high-priced equipment. This is an effective way to provide quality equipment to providers who may not otherwise be able to afford it.

Leasing also encourages suppliers to think about remanufacturing and recycling products and materials in the design and development phases. This ultimately saves them money and protects the environment by reducing waste.

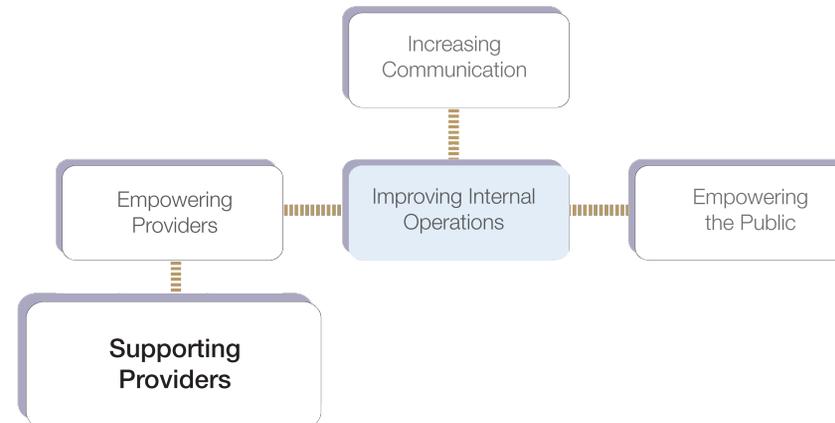
Supporting Providers

Supporting products after they have been sold is just as important as the sale itself. Pharmaceuticals and advanced medical equipment can save or take away lives and it is essential that they are functioning at the peak of their ability at all times. This means that people need to know, not only how to service products, but also how to use them.

For suppliers, supporting providers in the use of their products is one way to build up the trust that they need to base their relationships on. System elements in this area include:

- Mi-Cycle
- Reference Materials
- EZ Train
- Brand Certification

Together, these system elements help suppliers support providers in the use of their products.





Mi-Cycle

Supporting Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

- Physical Conditions
- Storage Procedures
- Stock Card

RELATED ELEMENTS

- e-Purchase

FULFILLED FUNCTIONS

- 1 Gather data on products
- 41 Assemble relevant products
- 47 Offer relevant product packages
- 54 Deliver products
- 58 Recall bad products
- 61 Take back old products

ASSOCIATED DESIGN FACTORS

- 5 Sales information on products is biased

Description

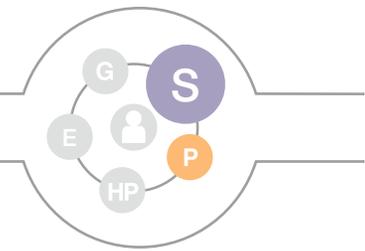
A web based application that synchronizes inventory levels between suppliers and providers. Tracks purchasing habits and forecasts future demand.

Properties

- Web application
- Live exchange network of inventory information between providers and suppliers
- Automatic update of levels that allow for transparency
- Personalized feedback or automation of supply and demand reports when necessary

Features

- Responds quickly to supply and demand fluctuations
- Handles unexpected external disruptions
- Recovers promptly from disasters
- Collaborates with suppliers and providers to personalize process
- Allows suppliers to manufacture products based on accurate customer needs
- Links to **e-Purchase** to purchase based on forecasts



Discussion

In the developed health care system there is the need for providers to be aware of the flow of information and inventory of pharmaceutical and medical equipment between their suppliers, themselves; and their patients, the general public. The supply chain is often left for others to handle because of the complexity that has been created between multiple players and payments. However, supply chain management is an area of great costs savings. Although this understanding of inventory levels is not the primary responsibility of providers, it is a valuable analysis to keep in mind as they administer supplies, and their inventory levels wax and wain. By being aware of changing inventory levels, providers are able to utilize products better, minimize error, and predict supply and demand.

Mi-Cycle is a web based application that is used to reveal product levels between suppliers and providers. By creating transparency of inventory, providers and suppliers can forge new relationships that use algorithms to anticipate each other.

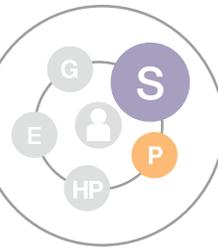
A great feature of **Mi-Cycle** is that it helps providers anticipate the necessary storage requirements for incoming supply. Automating inventory management with a point-of-use system can assist in the rearranging of space within storage spaces or the setting of correct temperature levels for the incoming products.

Mi-Cycle has a smart feature, **Physical Conditions**, that assists in calculating available storage space in conjunction with incoming supply. The provider is able to input dimensions, floor plans, and layouts of existing storage space. This planning tool flags situations when ordering more products is necessary, but there is no available storage space. While calculating available storage space, this resource takes into consideration the size of shipping and storage packaging, which is known primarily by the supplier.

An additional amenity of **Mi-Cycle** is that it provides reminders for all necessary storage conditions, referred to as **Storage Procedures**. Upon receiving supplies the provider will also receive a helpful note about the product. Some products need refrigeration while other products need to be in a controlled area. At this time there is also a human acknowledgement of expiration dates, which is crucial to know before a product is used in the patient's care cycle.

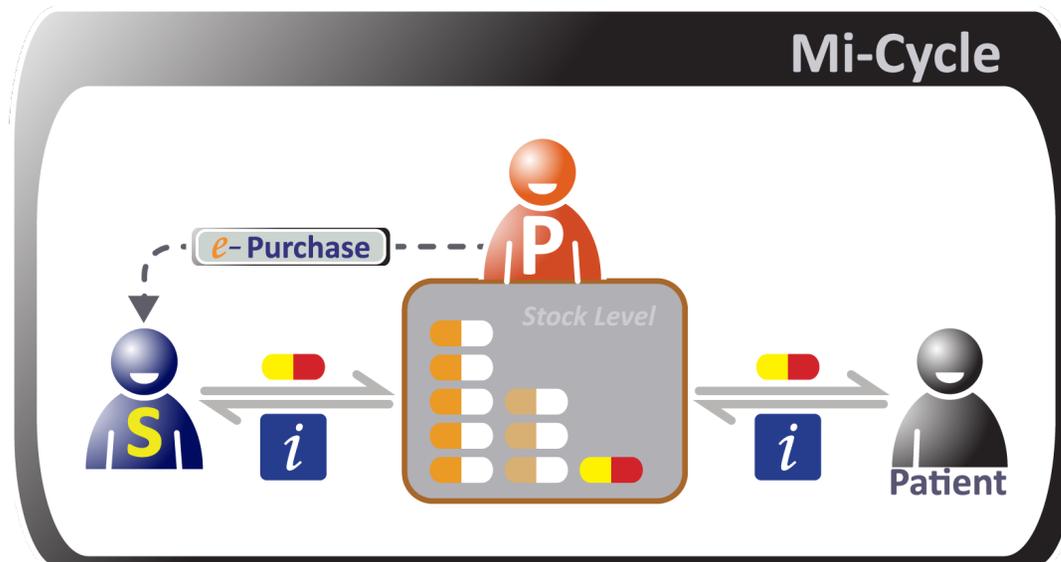
The **Stock Card** element of **Mi-Cycle** houses all of the information on inventory levels. Every product has a **Stock Card** which contains the date that the specific product was received, how many were received, and the balance in stock. As this data changes for a particular product, the supplier's corresponding **Stock Card** will also be updated.

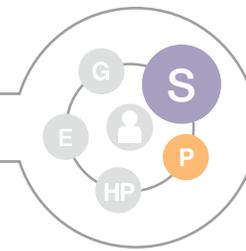
- 6 Suppliers can't find the necessary data
- 20 Documentation deposited in different locations
- 29 Purchasing contracts and prices are based on special discounts



On the supplier's side of the situation, it is crucial to have a constant live record of where products are going and at what rate. This allows the stock level to be maintained with automated replenishment enabled by **e-Purchase**, an online purchasing system between providers and suppliers. Eventually suppliers will be able to streamline product distribution, resulting in lower labor, inventory and space costs. Just-in-time manufacturing and stocking will then become more feasible.

If after a specific amount of time, a product is not active and the levels have remained stagnant, the suppliers will recall the product and pick it up from the provider. On the opposite end, if the stock level of a product falls rapidly, the supplier can also keep track of this pattern. This may provide valuable insight into trends. And, in less fortunate situations like natural disasters and epidemics, **Mi-Cycle** can ensure that the affected regions have the supplies they need.





Scenario

A supply chain coordinator, Mike, is looking for a better way to manage the inventory levels at his hospital. He has been doing all of his ordering and purchasing with the assistance of an administrative support team from the hospital. His responsibilities involve ordering products and services for the hospital along with distributing them to the different departments. Mike also tries to ensure that every hospital employee receives accurate supplies on time and is aware of the correct storage requirements.

Some factors that make Mike's job difficult are the inconsistencies between the information exchange of supply and demand. Because he is doing very little of his calculating and ordering on a computer, his quantity levels are not precise and there is a large amount of stock that remains unused and eventually goes bad. On other occasions he realizes that he does not have adequate inventory to fulfill the demand of the hospital employees. When Mike is able to accurately compose his needed levels, he is informed that the supplier, which in this case is a distributor, does not have it available or the price of it has now changed. The anticipated calculations that Mike had planned for now mean very little.

Mike's sales representative, Lisa, realizes his frustrations over time and introduces Mike to **Mi-Cycle**, a new web application that is being offered to preferred customers. This live exchange of information will now allow Mike to use the computer along with the internet to do all of

his purchasing and ordering. This will allow for accurate predictions of his ordering cycle. With this application he can also develop algorithms that will help the hospital understand where and when supplies will be used. By subscribing to **Mi-Cycle**, Mike is also able to review the supplier's inventory levels. This form of transparency will allow Mike and his staff to anticipate and prepare appropriately for back orders and possible price changes.

Mi-Cycle links to **e-Purchase** which is an additional web application provided by the supplier or the distributor. This application is used for smart purchasing. **e-Purchase** will have access to **Product Center**, which has all of the product information and list prices. By using **Mi-Cycle** along with **e-Purchase**, Mike is able to plan the hospital's supply chain more efficiently.

Upon receiving the supplies, **Mi-Cycle** assists Mike and his staff with instructions on how to store the products effectively. While checking-in supplies, this information is displayed as a feature informing the employee of possible expiration dates or specific storage conditions.

Lisa is now able to monitor the patterns of Mike's orders more effectively. This allows for Lisa to track patterns of ordering that may require attention. If Mike's hospital, along with others in the area have an approaching increase in demand, then Lisa's company can carry-out just in time manufacturing.



Reference Materials

Supporting Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Product Center

FULFILLED FUNCTIONS

- 44 Communicate product information
- 56 Provide reference materials

ASSOCIATED DESIGN FACTORS

- 49 Training is forgotten
- 50 Reference materials are lost
- 51 Difficult to determine where the fault lies when products or services malfunction
- 57 Training sales and repair teams is resource intensive
- 58 Providers don't know how to fix equipment by themselves

Description

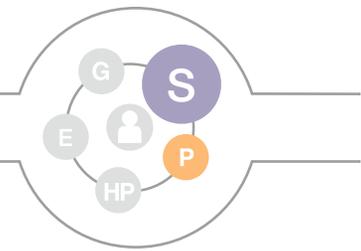
An initiative to offer more aid to providers. Includes information on how to operate and repair devices, use information services, and prescribe drugs.

Properties

- Standardized cheat sheets that accompany every product with quick reminders on how to use the product
- Print and/or digital guides on medical devices
- Accessible via the **Product Center**
- Labeled product parts for easy repair
- Duplicate reference materials so that copies can be placed wherever the product will be used

Features

- Empowers providers to use products more effectively
- Reduces the amount of supplier resources needed to support products after they are sold
- Encourages suppliers to think about usability in the design phase of product development
- Provides easy access to reference materials, anytime, anywhere
- Allows providers to focus on diagnosis and treatment instead of how to run equipment
- Reveals full functionality of products to providers



Discussion

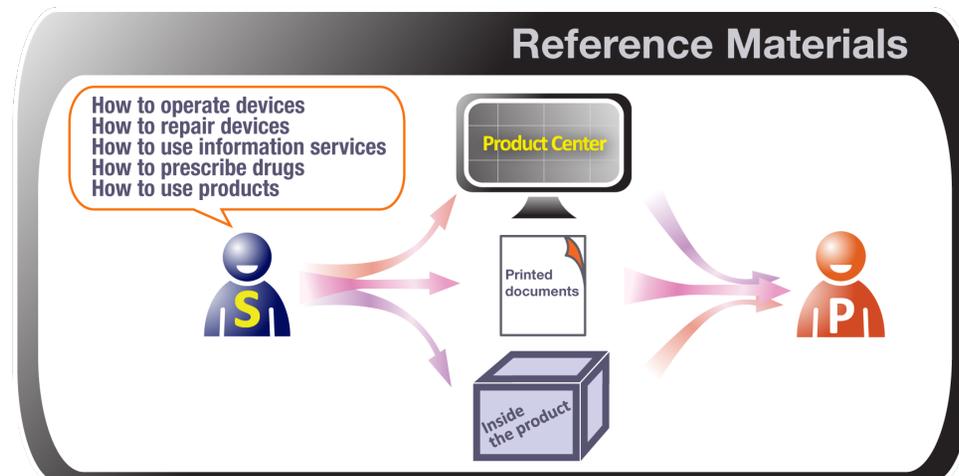
Pharmaceuticals and medical equipment are designed for expert users, which are the only people in the industry who have the skills to use them. Unfortunately, in some cases the products are so complex that even providers cannot remember how to use them. In these situations, it is important that every product, whether it is a drug or a device, come with easy-to-understand reference materials to support their use.

At the most basic level, this can mean providing duplicate copies of manuals for free so that providers can place one in every room where the product will be used. Currently manuals are generally either all kept in one place, away from where the product is actually used, or they're thrown out.

Since manuals can often be thick and daunting, another solution is to create product cheat sheets, with all of the most frequent operations explained on one sheet of paper. These can be physically attached to devices or kept together with the pharmaceuticals to remind providers of the basic uses of the products. If they need more detailed instructions, they can then reference the complete manuals.

Another option is to provide instructions via on-device computers. Since many new devices have screens on them, they can be used to guide providers through procedures. This serves the dual purpose of teaching providers how to do procedures while also letting them concentrate on their patients.

Reference Materials on how to repair devices when they malfunction would also save providers a lot of time and suppliers a lot of support resources. An example is how current photocopier machines all have labelled rolls and trays so that the on-device screen can reference which part of the machine has jammed. This allows people to troubleshoot problems on their own without calling the manufacturer for help. Suppliers of medical devices could employ the same techniques for the easy fixes.





EZ Train

Supporting Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Brand Certification

FULFILLED FUNCTIONS

- 55 Educate providers on product use

ASSOCIATED DESIGN FACTORS

- 15 Hands-on training is not always possible
- 16 Can't simulate real problems for training
- 48 Training for providers needs to be repeated when products are updated or new providers purchase products
- 49 Training is forgotten

Description

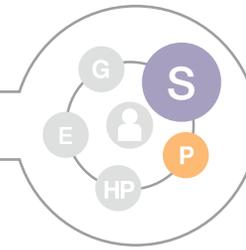
A subscription-based, multidisciplinary training program for providers. Includes internet courses, **Reference Materials**, and on-site training.

Properties

- Quality continuing education and training programs
- Online courses providing access to training anytime, anywhere
- Continuing education courses yearly for all health care professionals
- Subscription purchased either through a service contract or through a stand-alone subscription
- Computer simulators of patients for training

Features

- Empowers providers to use products more effectively
- Ensures proper use of medical equipment
- Reveals opportunities for use
- Guarantees continual access to training guides



Discussion

Most suppliers of medical equipment offer training courses, but they are offered at set times throughout the year and can cost thousands of dollars.

EZ Train is a new way of approaching training. Providers pay an annual subscription fee to have access to a variety of training materials offered through multiple channels. Besides the standard courses and manuals, there will also be online classes, tutorials, and simulations. Providers will be able to access them anytime, anywhere.

The accessibility of the materials allows providers to refresh their memories on how to use equipment for certain procedures when they need it. This ensures that patients will always receive the best care possible.

For an extra fee, providers can sign up for **Brand Certification** courses to ensure that their staff are maintaining a specific level of competency.

- 57 Training sales and repair teams is resource intensive
- 58 Providers don't know how to fix equipment by themselves



Brand Certification

Supporting Providers

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Empowering Warranty
- EZ Train

FULFILLED FUNCTIONS

- 55 Educate providers on product use

ASSOCIATED DESIGN FACTORS

- 57 Training sales and repair teams is resource intensive
- 58 Providers don't know how to fix equipment by themselves

Description

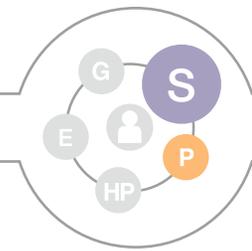
A way to designate levels of expertise regarding a product or series of products offered by a supplier. Recognized industry-wide and must be renewed.

Properties

- Supplier-run courses to educate supplier technicians and sales representatives, providers, and other health care players on product use
- Industry recognized certification
- General education and technical training depending on the audience
- Annual recertification
- Points system with different levels, e.g. Silver level in GE radiology products
- Included in an **Empowering Warranty**
- Available at provider sites and supplier headquarters

Features

- Ensures consistent service quality for all products
- Ensures knowledgeable sales representatives
- Encourages people to learn more about products
- Allows convenient and affordable access to training and information



Discussion

Brand Certification is a way to ensure that suppliers, operators of medical devices, and prescribers of pharmaceuticals are knowledgeable about the products they are using. Depending on the type of user, there are different levels of certification. While a technician may need to know how to service a product, a provider needs to know how to use it, and a supplier sales representative needs to know its indications.

Brand Certifications need to be renewed annually and are recognized industry wide like Microsoft Certified Professional designations. Over time, these certifications will ensure that all operators and prescribers of products are knowledgeable experts.

Annual recertification is an especially important aspect of **Empowering Warranties**. Since providers are taking more responsibility in maintaining their own products, they are required to attend annual high-level Brand Certification classes. Certification can also be used to ensure that providers under the **EZ Train** subscription are maintaining their skills.

Scenario

Dr. Greene's hospital recently purchased an Electronic Medical Record (EMR) system. Dr. Greene is really excited about this new computer-based patient medical record

solution as it provides all the patients' data instantaneously. Furthermore, it makes data transfer and provision of services a lot more accurate and efficient than with a traditional paper-based medical record. This system will help Dr. Greene and his colleagues be more effective in their work.

The hospital recognizes that for the EMR to be effective, it needs to be running at all times. To this end, they decide to send some of their technicians to get brand certified from the supplier.

Paul, together with several other technicians, is selected to attend a software **Brand Certification** course offered by the supplier. During the course, they are introduced to the software languages used to develop EMR applications as well as the platforms that they are used on. Paul finds the topics very interesting and easily passes the certification test. He also decides to sign up for the EMR hardware infrastructure **Brand Certification** course taking place the following month.

Upon return to the hospital, Paul and his team are able to maintain parts of the EMR system without any problems. As they continue to renew and upgrade their certifications, the hospital becomes more and more self-sufficient, with their EMR system running smoothly.

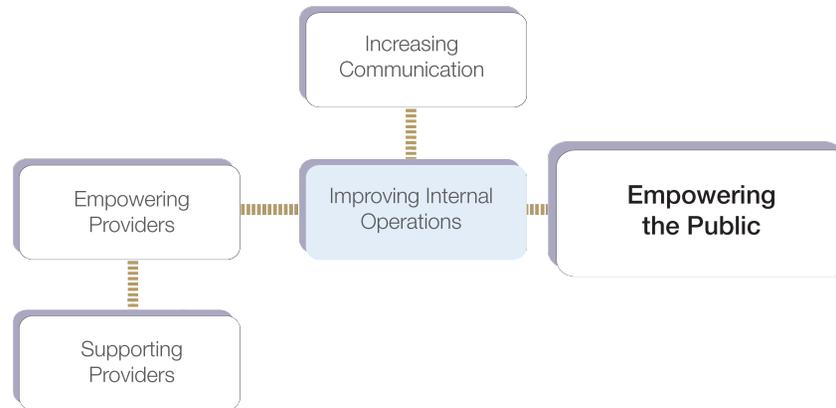
Empowering the Public

Suppliers of health care products have historically interacted mostly with providers who then use their products to care for patients. Currently there is a trend toward health care consumerism where suppliers can provide value directly to the public in the form of information and health monitoring devices.

By selling products directly to consumers and providing people with the resources to make informed decisions, suppliers can take a strong role in the prevention of disease and the maintenance of wellness. System elements in this area include:

- Product Center
- Health Support 2.0

Together, these system elements help suppliers enter the growing prevention and wellness market.





Product Center

Empowering the Public

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Information Database
- Reference Materials
- e-Purchase
- EZ Decide

FULFILLED FUNCTIONS

- 1 Gather data on products
- 44 Communicate product information
- 46 Promote products
- 79 Report product information
- 82 Report comparison information of product costs across suppliers
- 87 Gather data on drugs and

Description

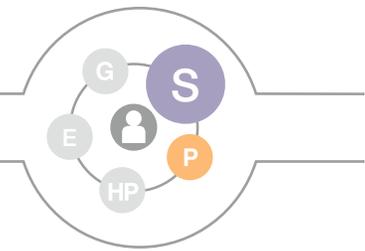
A third-party, online retailer of medical products. Can be used by providers to view and purchase pharmaceuticals, medical equipment, and supplies, and by the public to purchase home medical devices.

Properties

- Web portal with products from multiple suppliers
- Website for product information including cost, intended use, manuals, etc.
- Reviews of products (by providers for advanced equipment and consumers for home care equipment)
- Network of provider evaluators
- **e-Purchase** portal for purchasing products
- Decision-making tool
- Centralized location for viewing products and references

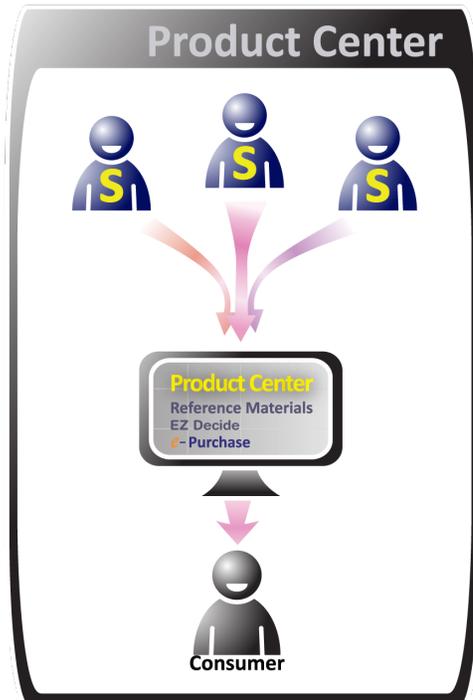
Features

- Extracts product details and supporting materials from suppliers' Information Databases
- Creates a forum for discussing products and collecting feedback
- Identifies early adopters and key users for potential future collaboration
- Creates a transparent cost system for both providers and the public
- Allows providers and the public to purchase products directly using **e-Purchase** and without going through group purchasing organizations.
- Uses **EZ Decide** to help consumers determine which products to purchase



Discussion

Online retailers like Amazon and New Egg are quickly becoming standard purchasing destinations for people. By selling products online, these companies can eliminate the costs of maintaining brick and mortar stores and benefit from the wide consumer base of the internet. The **Product Center** is an online retailer for medical products that mimics these other company models.



The **Product Center** collects product information and **Reference Materials** from multiple suppliers and sells the products directly to providers and the public. People can compare products, view prices, and read reviews posted by other consumers.

Since medical jargon can be difficult to understand, the **Product Center** also offers a decision making tool built off of **EZ Decide**. It allows consumers to specify their preferences and then suggests a subset of products that meets their needs.

Suppliers benefit from the **Product Center** because they can use it to gather user feedback that they can then use to improve their products. It also allows suppliers to reach a much broader consumer audience.

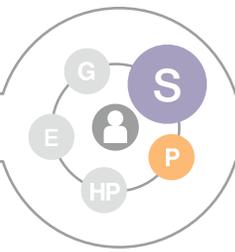
Although the **Product Center** is primarily directed to consumers, small providers can also benefit from purchasing their supplies directly through it. Currently smaller providers have to go through Group Purchasing Organizations (GPOs) to purchase their supplies. While the GPOs allow them to leverage the purchasing power of a group of providers, they also mark up the prices and receive kick-backs from the suppliers. By purchasing products via the **Product Center**, small providers can eliminate this intermediate step.

products

- 93 Promote new products
- 94 Report product information

ASSOCIATED DESIGN FACTORS

- 24 Providers are unable to compare products across suppliers
- 29 Purchasing contracts and prices are based on special discounts
- 27 Sales people manipulate drug statistics
- 41 Collecting product price information from other suppliers is difficult

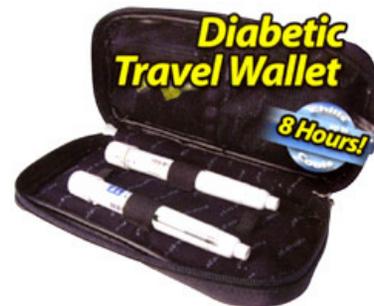


Scenario

David has been on diabetic care for sometime. Fortunately, he has the **Health Support 2.0** web site to help him manage his condition. From **My Health**, he also learns about other related products which several diabetic patients have been using. David is particularly interested in the Diabetic Travel Wallet by Fridge-To-Go mentioned by many users. As he is also scheduled to visit the doctor soon, he decides to find out more about other related diabetic products which he might discuss with the doctor.

David logs into the **Product Center** and visits the Diabetic Care Section. He goes directly to the Diabetic Travel Wallet and finds out that there are several other manufacturers who produce similar products.

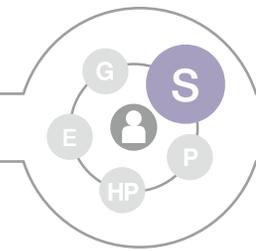
He makes a comparison of these products using **EZ Decide** and reads through the reviews of the Diabetic Travel Wallet made by Fridge-To-Go. He feels that it is good for him and purchases it online.



He then decides to learn more about other diabetic products that might make his daily insulin injection process less cumbersome. As he browses the section, he finds out about a new design developed by some German students. It is a trendy-looking wristwatch that contains an innovative ultra-light insulin pump to help people with diabetes. The watch produces its own electricity using piezoelectric technology originally developed for European satellites.

David watches a video about the wristwatch and enjoys learning about the technology used. He is happy to find out about this latest research and plans on discussing it with his doctor at his next appointment. He hopes to own one of these watches in the near future.





Health Support 2.0

Empowering the Public

Description

An online portal that encourages healthy lifestyles through three sites: **Stay Well**, **My Health**, and **Home Care**. **Stay Well** encourages healthy living, **My Health** supports people with chronic illnesses, and **Home Care** enables people to monitor their own health.

Properties

- Web based software applications and information
- Web forums for discussion
- Internet enabled health care products
- Advice for food, exercise regime based on profile
- Health monitoring and recommendations

Features

- Consists of three key areas: **Stay Well**, **My Health**, and **Home Care**
- Provides information support for health conditions
- Helps patients better manage their health care at home
- Provides user group support
- Provides guidance and support for maintaining wellness
- Identifies evolving patterns/trends in health and lifestyle parameters
- Indicates elevated risks of disease development
- Reveals episodes at early stages
- Facilitates personalized guidance

SUPERSET ELEMENT

None

SUBSET ELEMENTS

- Home Care
- Stay Well
- My Health

RELATED ELEMENTS

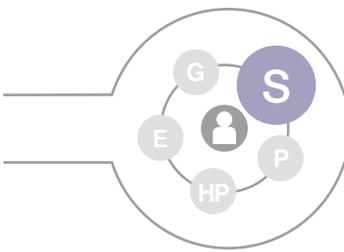
- Product Center

FULFILLED FUNCTIONS

- 92 Provide incentives for employees to maintain a healthy lifestyle

ASSOCIATED DESIGN FACTORS

- 32 Product details are difficult to understand
- 44 Employers are not concerned about suppliers' products



- Prompts for early medical intervention

Discussion

Health Support 2.0 empowers the public to lead a healthy lifestyle by providing them with health-related information and decision support tools.

Three approaches are available to aid the public: **Stay Well**, **My Health**, and **Home Care**. These three elements empower the public to stay healthy and help them through different stages of their health cycle.

Stay Well

Stay Well helps users live well and stay healthy. Guidance in terms of food intake and exercise regimens is published. In addition, **Stay Well** offers health care product recommendations based on what the users are interested in. It allows suppliers to move into the prevention and wellness industries where before they had only worked in treatment.

My Health

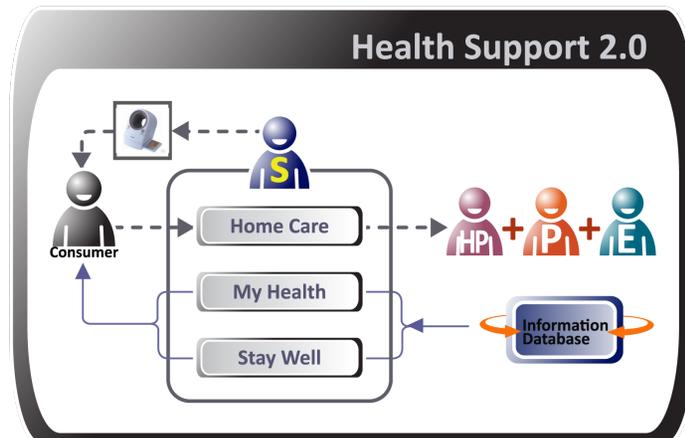
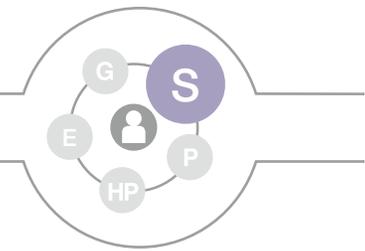
My Health provides relevant information for users who need to find out more about their health conditions. Signs and symptoms of different diseases are published and tips are provided to assist users in deciding on the possible steps that they can take. Sometimes, the aid could take the form of a recommendation to take an over-the-counter

medication. On other occasions, users may be referred to their physicians for a thorough check up depending on their conditions. Where applicable, prescription drugs or medical devices may be offered. When a consumer can purchase the recommended product directly without a prescription, **My Health** will redirect him to the **Product Center**. If there are multiple courses of action that a consumer can take, he can use **EZ Decide** in conjunction with **My Health**.

Home Care

For users with chronic health conditions or who want to monitor their health on a frequent basis, **Home Care** provides devices and an integrated web portal. People can use the devices to administer medication and monitor other health statistics and then upload this data to the **Home Care** section of **Health Support 2.0**. The website will track the person's details and warn her of any irregularities that should be discussed with a doctor.

As an added benefit to the other health care players, **Home Care** information can be released by the users to their providers, health plans, and/or employers. The other players can then use this information to ensure patient accountability or offer incentives to make healthy lifestyle choices.



Scenario

David’s mom has had diabetes for many years and he suspects that he could be diabetic as well. He checks out the **Health Support 2.0** web site. After learning about the symptoms, he decides to try out the diet and exercise regimen for a week before visiting the doctor.

At the same time, he notices that **Health Support 2.0** recommended a few insulin injectors to help him control his diabetes from home. He makes some comparisons of the different products using **EZ Decide**, and chooses a few to discuss with his doctor.

After a week, David decides to visit his doctor who confirms that he is diabetic and needs insulin medication. David discusses his previously selected insulin injectors

with his doctor, who recommends one based on David’s condition.

With the help of **Home Care**, David gets constant reminders and advice on what he could do to stay well. **Home Care** also monitors his daily blood glucose level and adjusts his insulin dosages accordingly.

Overall, David feels empowered to live his life as a diabetic with the support of his doctor and **Health Support 2.0**.

Increasing Communication

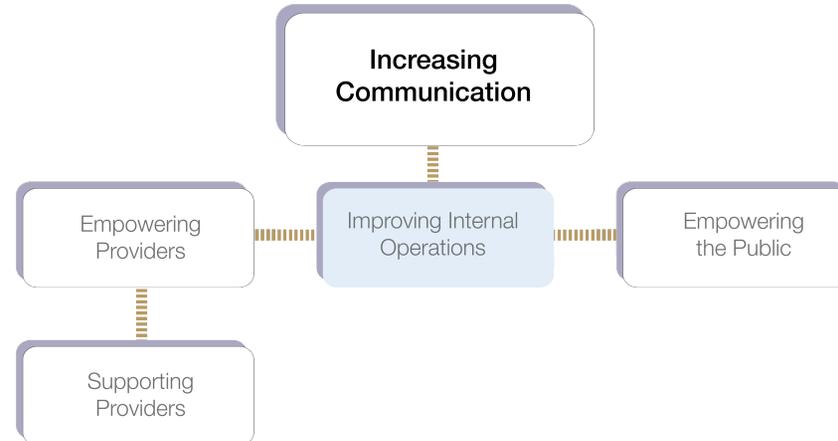
The health care industry is immensely complex and constantly changing. One of the main problems with today's health care system is that there is a lack of open communication among all of the key players.

In previous sections we addressed how suppliers and providers could create strong, trust-based relationships with the help of a set of communication solutions. We now address three more ways to improve communication among suppliers and between suppliers and the rest of the health care system.

System elements in this area include:

- Official Supplier Organization
- Share n' Care
- EZ Evaluate

Together, these system elements create the foundation for an open communication system.





Official Supplier Organization (OSO)

Increasing Communication

SUPERSET ELEMENT

None

SUBSET ELEMENTS

- Health Broadcasting Organization (HBO)
- Supplier Partnerships
- GrapHic

RELATED ELEMENTS

- Good Practices
- Value Metric

FULFILLED FUNCTIONS

- 1 Gather data on products
- 44 Communicate product information
- 79 Report product information
- 93 Promote new products
- 94 Report product information

Description

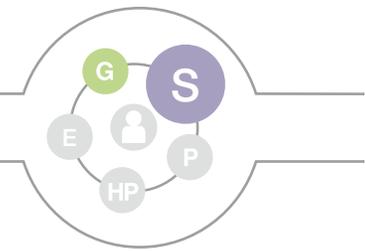
An opt-in network of suppliers of medical equipment, pharmaceuticals, and services. Sets guidelines and standards, encourages communication among members, and collects relevant supplier news to share.

Properties

- Organization of suppliers, divided into two groups: pharmaceuticals and advanced equipment
- Optional membership
- Network of communication to keep track of where advanced medical equipment and pharmaceuticals are

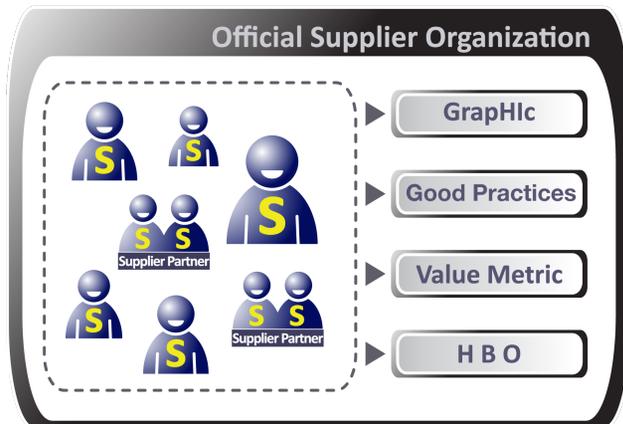
Features

- Sets standard evaluation metrics across member suppliers with **Value Metric**
- Sets language and graphical standards across member suppliers with **GrapHic**
- Encourages suppliers to share research findings and collaborate to develop new products (**Supplier Partnerships**)
- Sets and publishes **Good Practices** - guidelines for ethical sales practices
- Lobbies the government for research funding to be distributed among the most appropriate suppliers
- Moves supplier competition from zero-sum to positive-sum where multiple suppliers can work together for the benefit of everyone



Discussion

The **Official Supplier Organization's** goal is to improve communication among suppliers and help the public understand the supplier industry. In many ways it is like the Pharmaceutical Research and Manufacturers of America (PhRMA), except that it is for all health care suppliers. This broader scope of membership will enable health care solutions that can address entire cycle of care rather than just the diagnosis or treatment.



GrapHic

One of the main roles of the **OSO** is to set standards and guidelines that cover most, if not all, major health care suppliers in the United States. Two examples are **Good Practices**, which are guidelines to ensure ethical sales practices, and **Value Metric**, which is a standard unit for evaluating the quality of products. A third example is **GrapHic**.

GrapHic is an initiative to create standardized terms and graphics to explain the use and indications of products. Currently, most suppliers rely on text labels and information leaflets for distributing information on how to use their health care products. The use of text based reference materials is contrary to the findings of research in psychology and marketing which indicates that humans have a cognitive preference for picture-based rather than text-based information. It has been found that pictorial aids are more likely to improve recall, comprehension, and adherence.

For health care devices, the pictograms are useful for identifying proper usage, warnings and disposals. These pictograms are especially helpful for patients who lack text based understanding.

ASSOCIATED DESIGN FACTORS

- 26 Sales people don't sell products based on provider and patient needs
- 27 Sales people manipulate drug statistics
- 28 Providers cannot easily verify what sales people tell them
- 29 Purchasing contracts and prices are based on special discounts
- 30 Providers are incentivized to purchase/prescribe products
- 31 Sales people develop unhealthy relationships with providers
- 32 Product details are difficult to understand
- 33 Insufficient government funding
- 40 Suppliers unwilling to reveal proprietary information
- 41 Collecting product price information from other suppliers is difficult

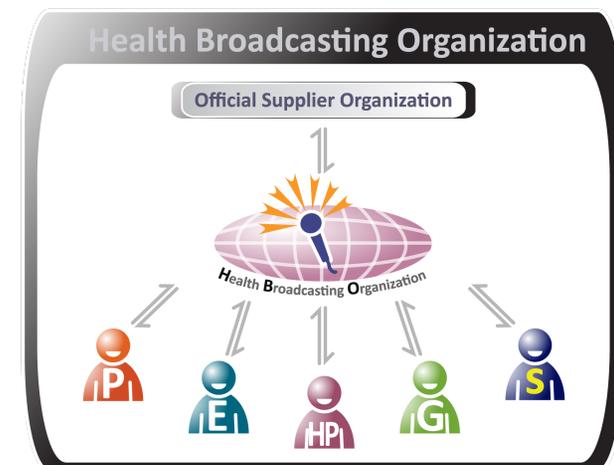


There are presently several pictogram standards and guidance documents available. They include medical equipment symbols and safety signs (<http://www.aami.org/publications/standards/symbcd.html>), symbols used on labels and in labelling of in vitro diagnostic devices intended for professional use and also pictograms for medications (<http://www.usp.org/audiences/consumers/pictograms>). With good intentions, these organizations have developed pictograms for health care products. However, most of them are not standardized nor uniformly used.

GraphIC aims to reduce the problem of confusing text and pictograms and it is based on standards set by the **OSO**. These pictograms will be consistently represented on all pharmaceuticals and medical products as well as all related publications including brochures, flyers and web sites.

Health Broadcasting Organization (HBO)

The purpose of the **HBO** is to collect information relevant to suppliers from all of the different health care players and share it with the **OSO's** members. This information includes policies and research initiatives from the government, health trends from the providers, and new research developments from universities, among other issues. All of this information is broadcast using multiple channels to provide ease of access to the suppliers.





Supplier Partnerships

With the information distributed from the **HBO**, suppliers can stay aware of what's going on in the industry and what other suppliers are working on. This provides a strong foundation for another initiative that the **OSO** sponsors - **Supplier Partnerships**. These are collaborations to develop products or sets of products that leverage each supplier's strengths. **Just For You Packages** are a possible result of **Supplier Partnerships**. These partnerships will also allow suppliers to develop products that treat entire cycle of care, thereby delivering more value to the providers and ultimately the patients.

Scenario

Lisa has been on the job for half a year and enjoys it tremendously. Recently, she attended a meeting organized by the **OSO** and learned about a new product that Company X was working on. They were seeking partners to develop a full cycle of care solution. As Lisa listened to the presentation, she realized that her products complemented very well with what was described. After the presentation, she approached the presenter and they decided to jointly request for a government grant. With the **OSO's** support, the government approved the project without further queries. The two partners developed a very useful product that helps patients throughout a full cycle of care treatment.

Lisa finds the **OSO** network very helpful and attends the meetings regularly. She is looking forward to the meeting this evening as they will be discussing a new **graphIc** pictograph for medical equipment which falls in her product range. Also, they will be going through the latest list of **Good Practices** for medical sales representatives and she wants to hear about them.

While she works on her computer, a newsfeed from **HBO** reminds her of the meeting and shows her the program schedule for the night.



Share n' Care

Increasing Communication

SUPERSET ELEMENT

None

SUBSET ELEMENTS

None

RELATED ELEMENTS

- Brand Certification

FULFILLED FUNCTIONS

- 25 Access product usability test results
- 44 Communicate product information
- 46 Promote products
- 50 Inform providers of current, improved, and future development plans
- 52 Continue informative relationship
- 76 Present improved, future products
- 79 Report product information

Description

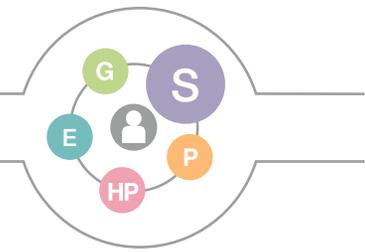
Events where health plans, suppliers, providers, patients, employers and sales representatives to come together to discuss products. Can be either a professional seminar tailored to health plans, suppliers, and providers, or a patient workshop that provides product information for patients and their employers.

Properties

- Physical meeting point that serves as an exchange of information for suppliers, health plans, providers, patients and employers
- Seminar for different players to share ideas and insights about mature and developing products
- Credit system for professionals, acknowledging attendance

Features

- Updates professionals and the public on current trends in the health care product industry
- Creates an avenue for suppliers to communicate directly with the public
- Allows suppliers to collect feedback on products from both providers and patients
- Openly discusses customer satisfaction, performance improvement, and technological advancements with attendees



Discussion

By participating in **Share n’ Care** seminars, people are able to assess their current knowledge of products while interacting with other players in the health care industry, in a common place. These seminars are meant to ensure that people stay informed and are able to use products correctly.

The professional **Share n’ Care**, will provide a shared meeting place for medical and managed care professionals. This experience augments the stakeholders’ understanding of clinical trials, since both the physicians that run the trials and the suppliers who develop the therapy are there. Professionals are also able to leave this forum with some type of certification for the featured product, possibly a **Brand Certification**, which is a way to show that one has gone through the process of inquiring about a particular product within the supplier industry.

The alternate **Share n’ Care** will provide educational information for patients and their employers. This educational workshop can cover issues such as decision making and usability, without selling products or using scare tactics.

Once there is an established meeting point, patients can use the seminar as an additional access to information. Here patients along with their employers can give feedback or report issues with current products, or possibly preview and test pre-market products.

A supplier can host a **Share n’ Care** seminar with the sole purpose of obtaining user information or feedback. This additional information will do many things. To the supplier, it will be insightful information about the usability of the product. But to the other players, it communicates the basic information about products and gives multiple points of view, which is essential for promoting and using a product with sincerity. In addition to this a supplier may want to host a **Share n’ Care** seminar to educate users more effectively on the use of a product so as to ensure that the product is being used properly throughout the health care industry.

Ultimately, a supplier would desire to host a **Share n’ Care** seminar because they are preparing all stakeholders for a thorough understanding of product safety and clinical quality information, while taking in consideration all rapidly changing technologies and treatment. In support of transparency, suppliers can also use this time as an opportunity to discuss financial challenges, especially with rising consumerism and active employers.

- 82 Report comparison information of product costs across suppliers
- 87 Gather data on drugs and products
- 93 Promote new products
- 94 Report product information
- 95 Continue informative relationship

ASSOCIATED DESIGN FACTORS

- 8 Health plans do not wish to participate in feedback
- 28 Providers cannot easily verify what sales people tell them
- 32 Product details are difficult to understand
- 44 Employers are not concerned about suppliers’ products

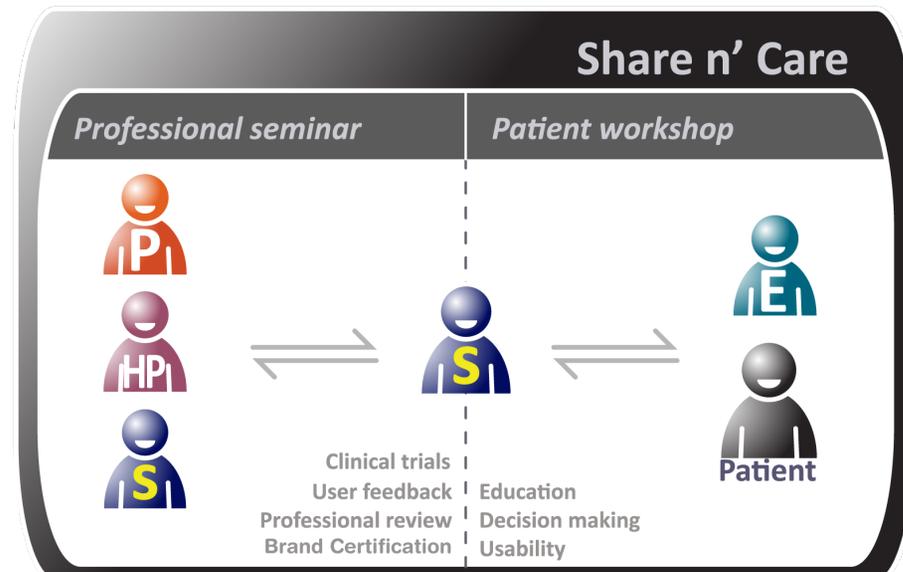


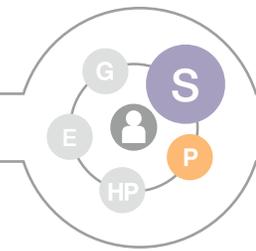
Scenario

A supplier has just released a new product and Dr. Greene is very intrigued by it. He would like to know many things about it including its performance during the clinical trials and what other providers think about the product.

Dr. Greene hears that the supplier is hosting a **Share n' Care** seminar and registers for it agreeing to share information about similar products that he is knowledgeable of and to be open-minded about the new product. Besides providers, the supplier will also invite other manufacturers of similar devices to attend as well as the specific providers that ran the clinical trials. These providers have initial knowledge of the pros and cons of the product. By having professionals there that have been intimate with the product Dr. Greene will be able to learn a lot about the product directly from users. Dr. Greene will also have the opportunity to meet other providers who are interested in similar fields.

Upon prescribing this new product to his patient David, Dr. Greene will be able to educate David thoroughly on the background information and alternatives to this therapy. Although Dr. Greene is **Brand Certified** with this product, he also is able to direct David to an additional **Share n' Care** seminar that is geared directly towards patients. Here, David is able to meet other potential users of this product. Whether they are current users or not, all the other attendees provide support to David because they have similar diagnoses.





EZ Evaluate

Increasing Communication

Description

A means for health care providers and consumers to evaluate pharmaceuticals, medical devices, and services. Can be accessed via multiple channels anytime and anywhere.

Properties

- A mechanism for gathering feedback on the quality of health care products
- Selective media (such as paper, web based, text messaging, over the telephone) are used depending on situations and availability

Features

- Collects qualitative and quantitative feedback from both professionals and the public
- Uses feedback results for product improvement and also for sharing with other users through the **Product Center** and the **Health Broadcasting Organization (HBO)**
- Offers multiple formats for providing feedback

SUPERSET ELEMENT

None

SUBSET ELEMENTS

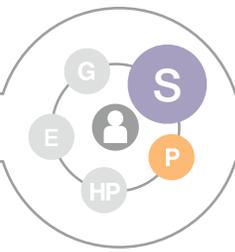
None

RELATED ELEMENTS

- Value Metric
- Health Broadcasting Organization (HBO)
- Product Center

FULFILLED FUNCTIONS

- 2 Collect results of service quality evaluations
- 3 Collect results of product quality evaluations
- 16 Evaluate quality of products
- 37 Evaluate quality of products
- 38 Evaluate quality of support services
- 49 Request product quality



evaluations

- 62 Request service quality evaluations
- 67 Collect feedback of services from health plans
- 75 Evaluate quality of products
- 84 Provide feedback surveys
- 91 Evaluate quality of products

ASSOCIATED DESIGN FACTORS

- 12 Quality evaluations are biased (products and maintenance services)
- 13 Different metrics are being used to measure product quality
- 14 Different metrics are being used to measure service quality
- 47 Providers don't have time to evaluate supplier services

Discussion

EZ Evaluate captures users' feedback of their experiences with health care products. This feedback is very critical to enable the continual improvement of products and also helps potential users choose products.

Suppliers generate related questions and feedback forms for users to answer after they have used the health care products. The target user groups also include secondary users, such as maintenance and administrators of treatment processes. Similarly, nurses and doctors will also be targeted to carry out these evaluations.

Since professionals are very busy and users are all in different positions, **EZ Evaluate** offers multiple channels of feedback to be adaptable to their needs. Besides paper formats, other media are used for collecting evaluations. They include web based and telephone surveys, questions on PDAs, and other means that are simple for the users to access.

After collecting the feedback, these results are combined with quality ratings determined by **Value Metric** and shared on different networks, including the **Health Broadcasting Organization (HBO)** and the **Product Center**. The evaluation results and comments are useful for potential users and buyers of health care products to make an unbiased choice.

Scenario

David needs a glucose monitor for his diabetes and he decides to visit the **Product Center** web site. After looking at the specifications, he decides to also study the comments made by previous users. The users' comments were very helpful and he was able to make a decision quickly on what he needs.

After using the diabetes products for a month, David feels well and he was glad that he was able to make a good choice based on the information found in the **Product Center**. While surfing the internet for other health care information at **Health Support 2.0**, he was prompted to fill in an evaluation form regarding the use of the products he had purchased. David was keen to share his experience with others and took 3 minutes to complete the questions and added some comments on how he felt with the use.

The **EZ Evaluate** system has been beneficial to the supplier producing the products. Users also benefit as it is a social network that promotes sharing of experience.

Conclusion

In this report we have shown how suppliers of pharmaceuticals, medical equipment, and information services can redefine their relationships with the players of the health care system. Starting with a foundation of quality products that meet consumers' needs, suppliers can build long-lasting, trust-based relationships with other suppliers, providers, and the public. Specifically, we have looked at solutions that sought to improve *communication*, *value*, and *support* in five specific supplier interactions:

- Improving internal operations
- Empowering providers
- Supporting providers
- Empowering the public
- Increasing communication

What is uplifting is that very few of our solutions are completely speculative. Most already exist in one form or another, whether in the health care industry or in an analogous field. In looking at the health care system as a whole and the supplier role specifically, we were able to pull these innovative ideas from many different sources and integrate them into a unified system.

The fundamental road block that we discovered, is not the lack of solutions for a better health care system, but the lack of a joint effort among the health care players. In this report and the reports of our classmates, we have imagined

a world where all the key health care players are willing to work together to adopt and enhance health care solutions. A system where the government sets standards and ensures that everyone has access to care, where health plans are health institutions instead of “care deniers,” where employers support and encourage employees to live healthy lives, and where providers have the time and freedom to provide the best care possible.

Into this world we introduce suppliers that create the infrastructure that the whole health care system rests on. Suppliers that care about their consumers, develop trust-based relationships with providers, and educate the public to make informed decisions about their health.

This is the world that we present to you.

