Alex Grishaver

A model for research at PHC

9 October 1997

Why develop a model for research?

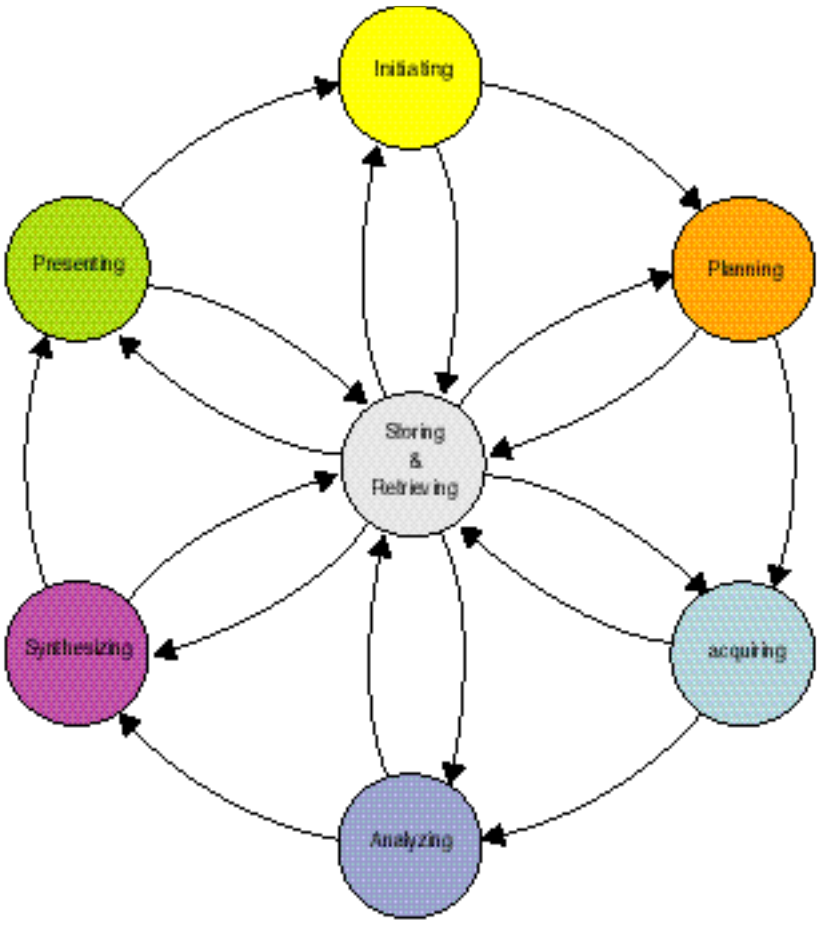
When I joined PHC, one of the first things I noticed in Charley's office was a stack of about 10 2-hour Hi-8 tapes. The tapes had been used to record numerous collaborative design sessions and interviews. While Charley and Debbie had used insights gleaned from these sessions in building their conception of the DoHealth site, noone else had seen the tapes. Charley's research updates helped communicate some of the conclusions and findings that resulted from these sessions, and others developed some important insights based on conversations surrounding this initial research. In retrospect, it seemed to me that the distinctions between a general research process had been confused by the reliance on a particular method: the loose collection of ideas referred to as Video Ethnography. Implementing the first part of the method – simply interacting with research participants and sharing ideas and knowledge -- was all the designers needed in any immediate sense. But without an effective means of sharing their results, PHC lacked a coherent, collective understanding of what was learned. Completing the process would mean analyzing hours of tapes, with each hour of tape taking between 2 and 6 hours to effectively deconstruct.

The model of research I've developed here began with an attempt at separating an appropriate process for research from specific methods. Research methods are almost always laden with assumptions concerning the goals of research: the type of data to be acquired; the audience the conclusions will be presented to and/or used by; and even the character of the insights generated by the research. By choosing a particular method, the researcher has already made numerous assumptions that may or may not comport with the real goals of the research (and these "real goals" often surface retrospectively, because of the disparity between what was achieved and what would have actually been useful). For this reason, people reviewing this document will be hard-pressed to find "pilot surveys," "up-front user research," "QA testing," or any other specific method or approach. Hopefully, you'll find the beginnings of a process for determining appropriate methods, among other important decisions. You'll also find the beginnings of a language for describing the research process, and a sense of the key elements that live within the process. The model should also help initiate a more informed conversation concerning the relationship between research and other entities within PHC.

I've described the research process in terms of a state/transition model. States represent distinct activities or sets of activities, where some condition or event provides the transition to the next state. States build, manipulate, transfer and otherwise act upon numerous research objects. "Defining Internal Goals and Priorities [of research]" is an example of one particular state. "Internal Goals and Priorities Determined" provides the necessary transition to the next state. "Researcher;" "Decision-maker;" "Internal Goal; Internal Priority" are all examples of objects that are created and utilized within the state of "Defining Internal Goals and Priorities [of research]."

I've made value judgements concerning the importance of certain activities within the model, so in this sense the model is prescriptive. For instance (and forgive me for jumping ahead), the "Initiating Actions on Findings" state is an aggressively proactive set of activities designed for keeping other activities on track and implementing relevant Findings.

I have used the term "Secondary Research" to denote research that is based more on a study of artifacts. One might also invoke the postmodernist notion of simulacra of different orders. If I look directly at you, I develop an image of you in my brain. If I look at your shadow on the wall, I'm looking at some kind of artifact of your existence, but not at you. If I took a picture of that shadow, I'd be looking at an artifact of an artifact of your existence. I could also make a photocopy of the picture: an artifact of an artifact of an artifact, and so on. Some research at PHC will start relatively low on the research chain: videotape of a live interview. Other research will begin with third or fourth-order simulacra: a review of a paper describing the results of a text analysis of a videotaped interview. The term "User Research" seems to connote (in the minds of a few PHC denizens, especially those from ID) a particular type of real-time interaction with people, and using a small set of familiar techniques. A paradigmatic example of this conception might be videotaping two children playing with blocks, and then "deconstructing" the interacting using some familiar analytical tools (AEIOU, Observation/Speculation lists). On the other hand, a careful re-reading of email correspondence between two people would be just as much "about users" as a study of real-time interaction. One might make a more general distinction between "live," event-based research, and "recorded," artifact-based research.



The Big Picture

The diagram to the left is crassly reductionistic, but it points out the main features and general flow of research

A research study may be ***initiated*** by a number of different mechanisms. A primary path for initiating research comes from research itself: a researcher (or anyone, for that matter) states his or her informed opinion that research into this or that subject needs to occur.

Once initiated, research enters a *planning* phase. Goals and Priorities of research must be formulated; projected Outcomes must be speculated; a Strategy for conducting research needs to be developed; a Method or Methods need to be chosen… and so much more.

Based on previous planning decisions, researchers begin *acquiring* data.

Once acquired, researchers begin *analyzing* the data to determine its significance.

Based on this analysis, researchers begin *synthesizing* their Findings and Conclusions.

Researchers engage in a number of different activities aimed at *presenting* their Findings and Conclusions in a way that best communicates their thoughts to the right people.

Once presented, more *initiating* takes place: either in initiating further research, or in initiating any Actions specified in the Findings presented by the researchers.

Throughout the research process, *storing and retrieving* of different information and objects takes place. What is stored and retrieved; how; and who (or what object) uses the information; these become important issues to consider in the development of a robust research process.

The next page will list all the states that fall within the above categories (Initiating, Acquiring, Analyzing, etc). Don't worry about memorizing terms and definitions at this point.

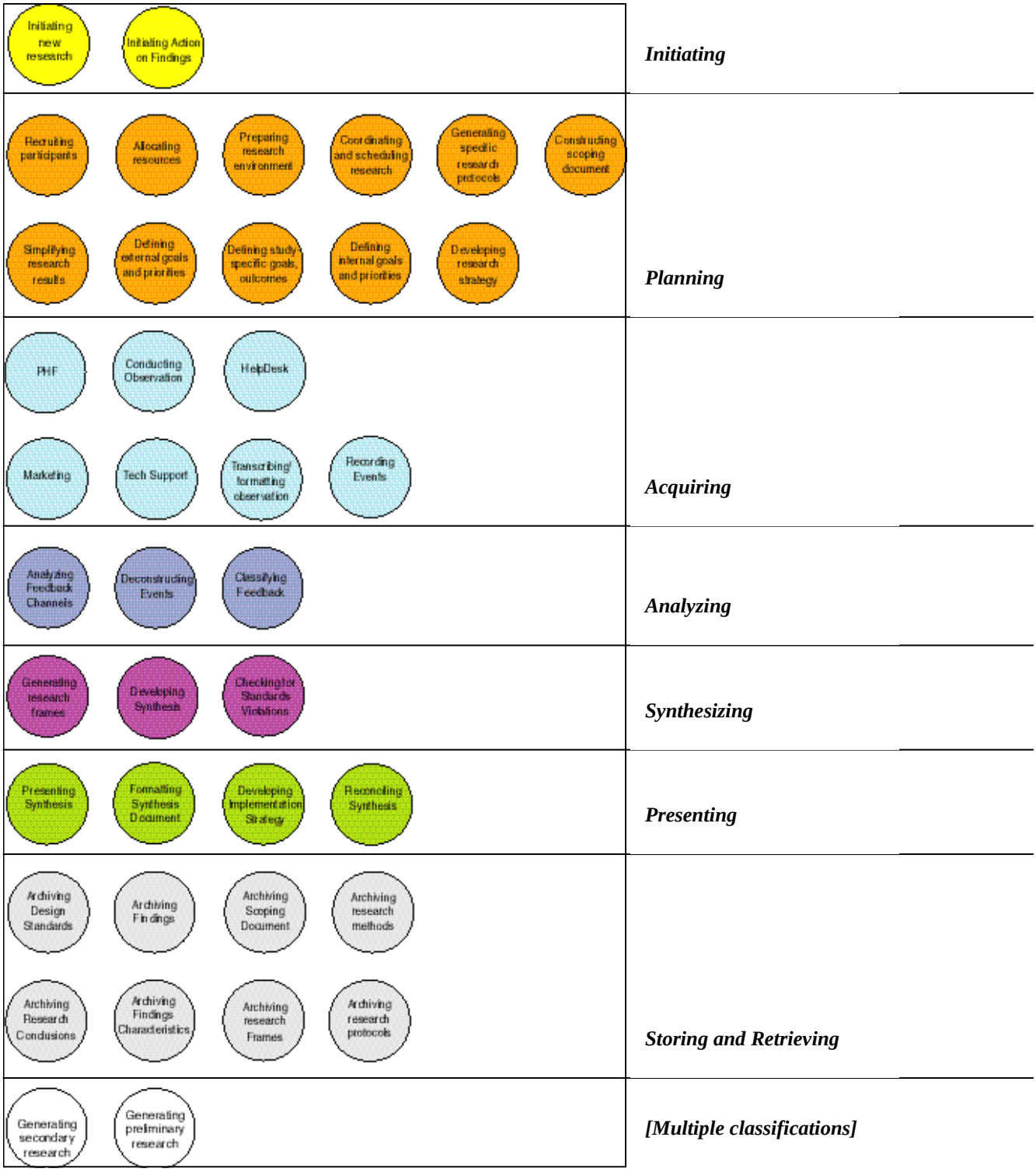
Important Objects (see Object Definitions, p. [?]).

> Research Synthesis – *[follows the data collection and analysis phase] A summary of what, if anything, can be said about research thus far: what does it all mean? A synthesis can include Conclusions and Findings, but the two should be carefully distinguished.*
>
> Research Conclusions – *An informed opinion concerning the significance of observed events, collected data – but without any value-judgements concerning what to do in response. For example, "We've discovered a hole in the ozone layer above Antarctica. Man-made fluorocarbon gases are primarily responsible for this ozone depletion."*

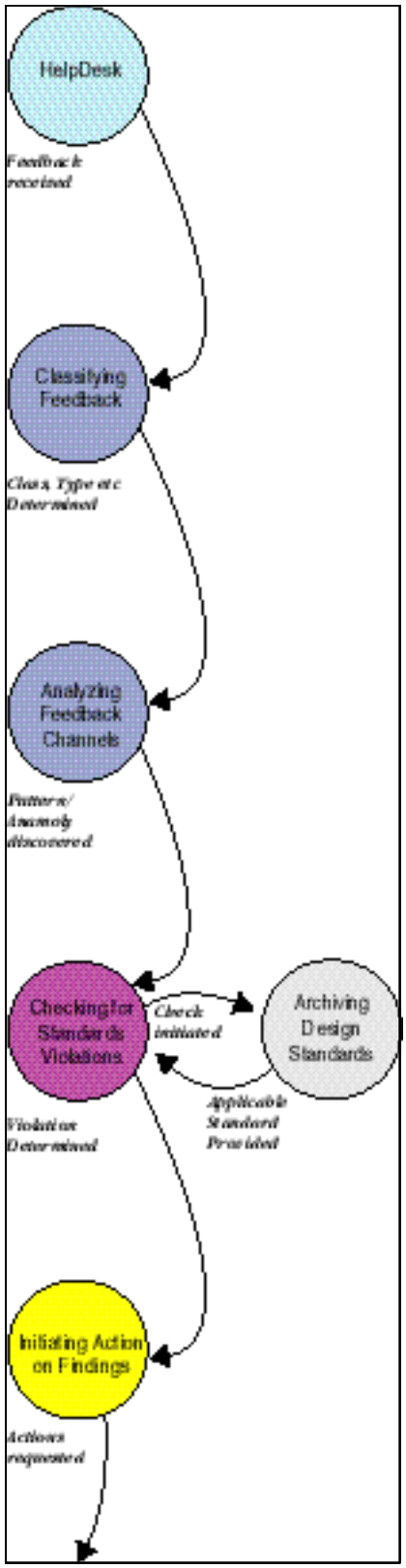
Finding – *An informed opinion that prescribes action. "We've discovered a hole in the ozone layer above Antarctica. Man-made fluorocarbon gases are primarily responsible for this ozone depletion. We believe that a) ozone depletion is a bad thing; b) Industrial countries are primarily responsible for fluorocarbon emissions, and c) that a ban on further production of fluorocarbons by industrial nations could partially ameliorate the problem. Therefore, we urge that industrial countries act immediately to ban fluorocarbon production etc etc…"*

Related Activities

(This diagram lists all the states currently living within the research model. Review them briefly; don't try memorizing anything unless you're more of a masochist than I am.



Simple path based on Standards Assessment



It may help to look at some specific instances of the general model described two pages ago. In this example, the components of the general model aren't represented linearly. Remember that in this state/transition model, specific states can be thought of as "machines" that keep churning along until they're done doing whatever they're supposed to be doing. HelpDesk is constantly receiving Feedback; Classifying Feedback provided by HelpDesk; Analyzing Feedback Channels is constantly looking for Patterns or Anomalies.

Suppose HelpDesk receives 127 new email messages. Many of these messages can be easily classified as somehow about navigation at the general-product level. In analyzing general-product navigation feedback, a Researcher discovers a clear pattern: members can't navigate to their page (My Page)* without using browser-level navigation tools, except on certain odd pages. In other words, navigation back to member page is inconsistent.

Not all feedback patterns will be so clear. In this case, the Pattern is presented to the next relevant state, Checking for Standards Violations. Upon checking in the Design Standards Archive, it's evident that a clear design Standard has been violated: "Members must be able to navigate to their personal page from within the DoHealth web." The remedy is embedded in the Standard: "any instance of inability to navigate to personal page from within DoHealth web should be eliminated etc etc."

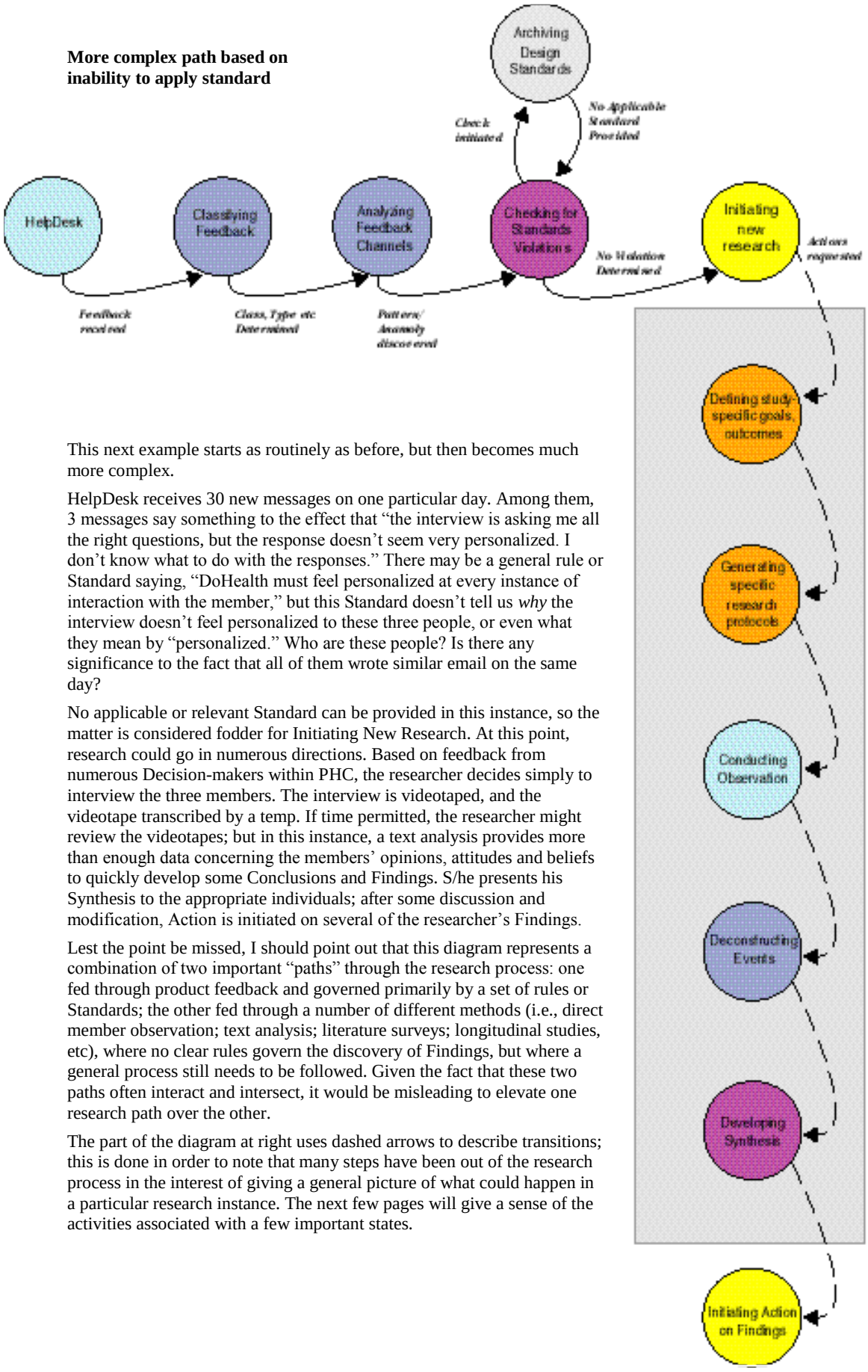
The above represents an extremely routinized, almost automatic, instance of research. Even so, all of the components of more abstract or open-ended research still exist:

Research has been *initiated* by an automatic procedure: when data is *acquired*, it is immediately handed over for *analysis*. The analysis (in this case, a pattern of use that points to a navigation problem), when matched with the appropriate standard, allows the researcher to *synthesize* a Finding: an informed opinion that requires the researcher to *initiate* action. The entire procedure has been more or less pre-planned by the routine way in which the states feed information to each other.

Important Objects

Design Standard – *A Finding that can be used consistently as a general rule and/or benchmark. "Brown colors on a black background are bad. Don't put brown on black. If you already did, change it."*

More complex path based on inability to apply standard



This next example starts as routinely as before, but then becomes much more complex.

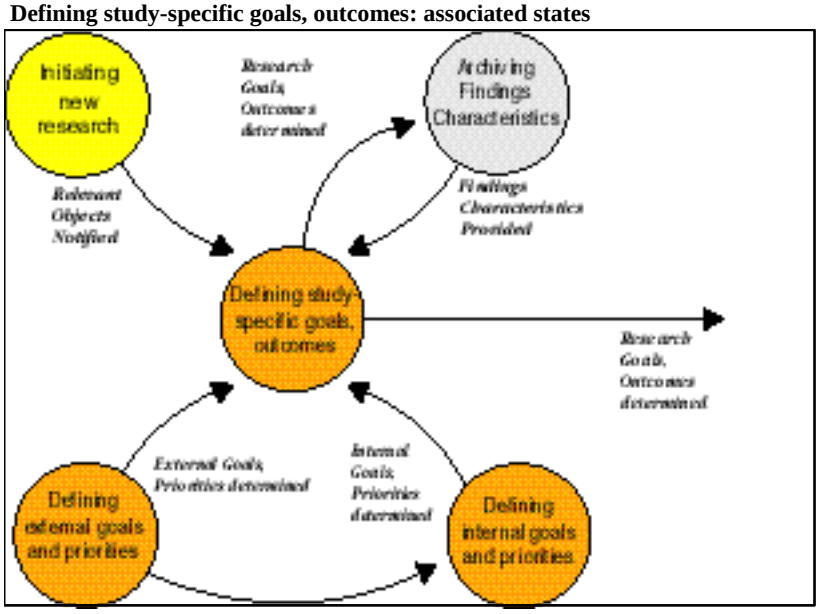
HelpDesk receives 30 new messages on one particular day. Among them, 3 messages say something to the effect that "the interview is asking me all the right questions, but the response doesn't seem very personalized. I don't know what to do with the responses." There may be a general rule or Standard saying, "DoHealth must feel personalized at every instance of interaction with the member," but this Standard doesn't tell us *why* the interview doesn't feel personalized to these three people, or even what they mean by "personalized." Who are these people? Is there any significance to the fact that all of them wrote similar email on the same day?

No applicable or relevant Standard can be provided in this instance, so the matter is considered fodder for Initiating New Research. At this point, research could go in numerous directions. Based on feedback from numerous Decision-makers within PHC, the researcher decides simply to interview the three members. The interview is videotaped, and the videotape transcribed by a temp. If time permitted, the researcher might review the videotapes; but in this instance, a text analysis provides more than enough data concerning the members' opinions, attitudes and beliefs to quickly develop some Conclusions and Findings. S/he presents his Synthesis to the appropriate individuals; after some discussion and modification, Action is initiated on several of the researcher's Findings.

Lest the point be missed, I should point out that this diagram represents a combination of two important "paths" through the research process: one fed through product feedback and governed primarily by a set of rules or Standards; the other fed through a number of different methods (i.e., direct member observation; text analysis; literature surveys; longitudinal studies, etc), where no clear rules govern the discovery of Findings, but where a general process still needs to be followed. Given the fact that these two paths often interact and intersect, it would be misleading to elevate one research path over the other.

The part of the diagram at right uses dashed arrows to describe transitions; this is done in order to note that many steps have been out of the research process in the interest of giving a general picture of what could happen in a particular research instance. The next few pages will give a sense of the activities associated with a few important states.

Defining study-specific goals, outcomes: associated states



Each state within the gray box on the previous page has numerous other states associated with it. "Defining Study-Specific Goals and Outcomes" has at least 4 other states associated with it (and certainly others I haven't thought of). Most of these states also have other states associated with them (and so on, and so on…), but they're not shown in this particular diagram.

Before actually defining the Goals and Outcomes of research, the most obvious preliminary step lies in initiating the new study. A "New Research Request" is generated and disseminated to a host of other objects: Researchers and Decision-makers are the most important class of objects notified, with important subclasses (i.e., Observational Researcher; Literature Search Researcher; Ethnographic Researcher) that I won't describe here. In order to Define Goals and Outcomes, these objects first need to develop and reconcile certain other objects. If the research is to bear fruit for a PHC partner such as Lexant, their goals for research and their priorities – the things they need most from the research – need to be clearly defined. PHC also needs to engage in a similar exercise, and then determine the overlap (if any) between internal and external Goals and Priorities. As with other activities, this process could take 5 minutes or 1 week depending on the research project.

While the results of research are rarely 100% predictable, defining the form the research will ultimately take becomes an important aspect of early planning. Are the applicable results of research – the Findings – supposed to help guide illustrators in the production of visual content for a web site, or are Findings meant to affect the work of programmers writing C code? The recipient(s) of research Findings are literate within a certain definable range of communication forms; the chosen form of communication needs to contain appropriate characteristics for comprehension by the intended recipient.

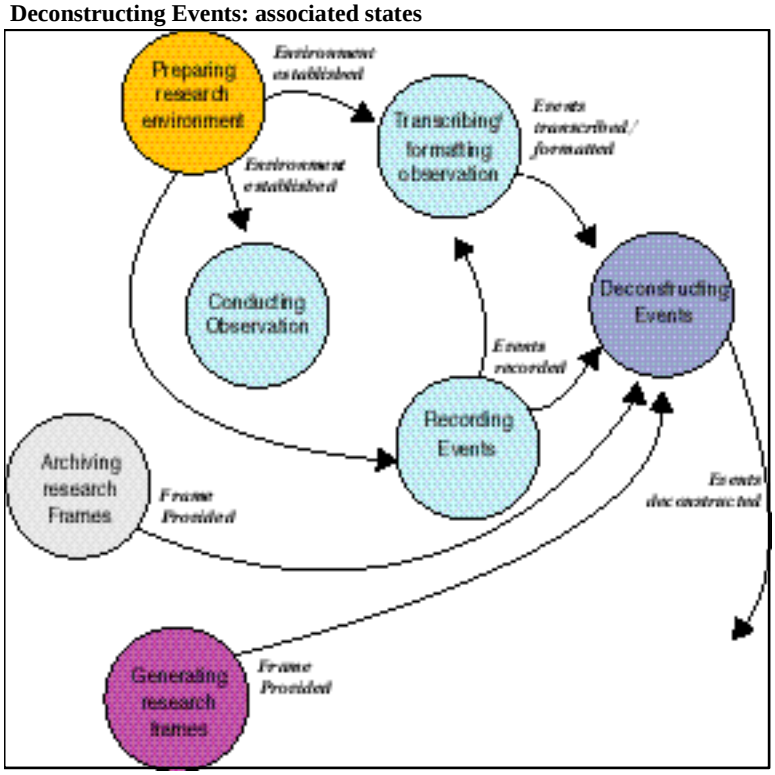
Important Objects:

Findings Characteristic – *A description of how a Finding is communicated, what form the communication will take, and who the intended recipient is. There can be multiple Characteristics for a single Finding.*

Scoping Document (not shown in the above diagram) – *A consolidation of information outlining Research Strategy, Goals and Outcomes of Research.*

Research Strategy – *A plan for conducting research based on Goals, Outcomes, audience (as described in Findings Characteristics), and methods. The plan should describe time frames, deadlines, resources etc in general terms.*

Deconstructing Events: associated states



Between "Conducting Observation" and "Deconstructing Events," numerous other activities come into play. Before a simple, semi-structured interview takes place, the interview environment needs to be prepared (and, in order to prepare the research environment, numerous scheduling and coordinating activities must have already been completed). The interview is considered a specific type of Event that is unique to the qualities of the interview and the projected Goals and Outcomes of Research. As such, it may be recorded in different ways. In this case, imagine the interview being captured on videotape and verbal communication later transcribed (recording and transcribing are probably synonymous in some sense; these two activities could probably be combined). Written transcription will aid in deconstructing verbal communication within the interview. The videotaped recording will aid in verbal deconstruction, as well as in analyzing nuances of speech and body language. Researchers will employ a particular type of approach in their deconstruction of the Event. They may employ Structured Planning approach, whereby observations and insights concerning discrete "chunks" of video (or of transcribed content) are catalogued, along with more generative (prescriptive) speculations concerning the significance of the observation. A whole series of operations may later be applied to these sets of observations and speculations, until the researchers realize they've just wasted a hundred hours of time wallowing in a process that's left them drained of any creativity they might have previously possessed. But that's another story. They might also employ a less structured content analysis, or some other approach that helps them reveal logic structures within the conversation. A collection of these Frames should reside in some form of repository, or are generated based on the demands of research (and generating research Frames may become a research project in itself).

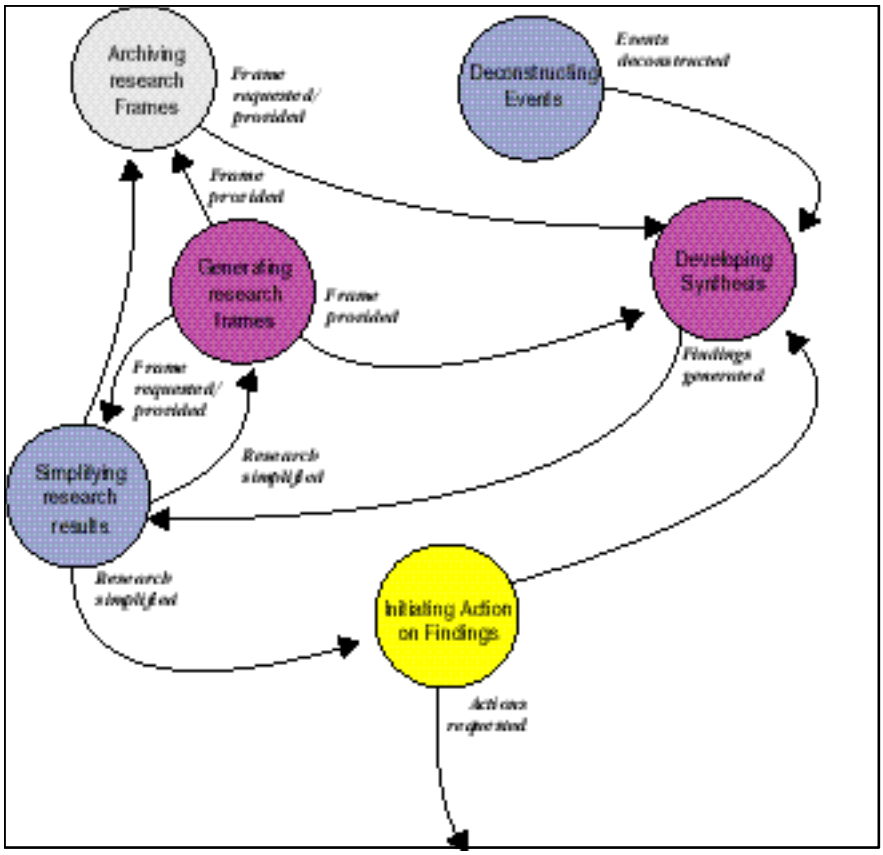
Important Objects

Event – *an instance of something happening, somewhere, for some period of time.*

Research Frame – *An analytical, methodological or other tool or technique used for managing information derived through research. A filter. Frames are usually subsets of research methods. Examples include Frameworks (AEIOU, SOAP); content analysis; creating a videogram; developing Observations/Speculations.*

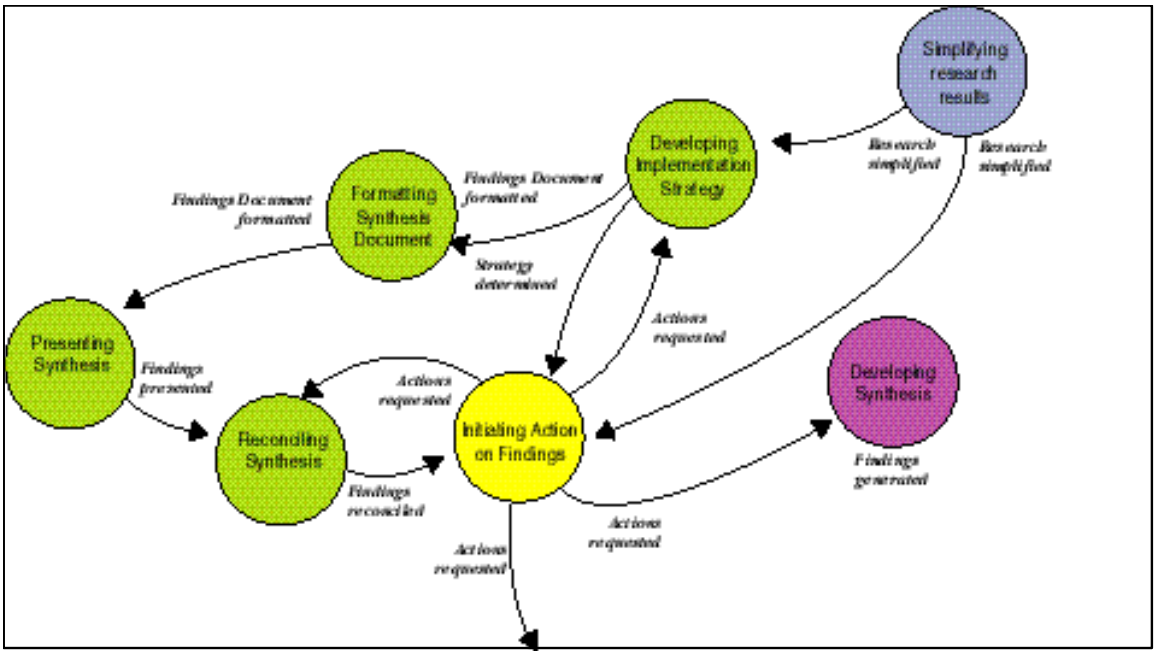
Deconstructed Event – *An event that has been observed and interpreted and the interpretation externalized in some way. A simple example of deconstruction is the verbal recollection of something that happened to you on your way to the airport (but in this case, the effectiveness of the deconstruction depends on the speaker, and maybe on the quality of the cab ride).*

Developing Synthesis: associated states



"Developing Synthesis" involves many of the same states as "Deconstructing Events." A different set of intellectual or analytical tools may be used in determining which insights constitute research Conclusions, and which insights constitute Findings. Once Conclusions and/or Findings have been generated, they need to be properly communicated to relevant objects. Much of the formatting of Conclusions and Findings should occur as a natural process of research (see previous page discussing Findings Characteristics); "Simplifying Research results is another step designed to ensure that research is appropriately communicated. While much research will follow this sequence, it's conceivable that the research process could slow to a snail's pace at numerous points in the process. "Initiating Action on Findings" is therefore both a reactive and a proactive activity. If research results (either Findings or Conclusions, or both) haven't progressed in a timely manner, this state gives research a quick impetus to action (the "Initiate Action on Findings" state probably has numerous transitions to other activities that I haven't shown or thought of).

Initiating Action on Findings: associated states



"Initiating Action on Findings" is also closely associated with a number of "presenting" states (see the "big picture model in the beginning of this document).

Once research has been simplified, an implementation →presentation→reconciliation→action cycle can begin. Researchers largely develop the initial implementation strategy. This strategy is included, along with Findings and Conclusions, in a Synthesis Document. The document is disseminated, and formally presented to relevant parties in order to initiate a larger discussion concerning the relevance and application of the results. During reconciliation, some Findings may gain increasing importance while others lose the priority status accorded by the researchers. Some Conclusions (research results that don't prescribe any particular action), upon analysis and reflection by non-researchers, may suggest that certain actions be taken; these Conclusions may be modified, becoming Findings. The Implementation Strategy can also be modified at this point. Once the results of synthesis have been reconciled, Action can be taken on Findings.

This concludes the overview of the research model. The next step is to take a look at the diagram of the whole model (next page), and compare it with the attached table. You'll probably need to enlarge the diagram onto ledger paper.

Notes on using the Table

The table has three columns:

- The first column simply lists the title of the state.
- The second column lists the responsibilities of the state.
- The third column lists the objects that collaborate in the activities occurring within the state. Some objects are created within the state itself. These objects have a ">" symbol in front of them. For example, the state "Generating Research Frames" has at least 3 objects associated with it: >Frame; Researcher; New research Initiator. A Frame is generated as a natural consequence of the state fulfilling its responsibilities.

Missing Pieces

Several people have pointed out inconsistencies and apparent omissions in earlier drafts of the model and accompanying text. I've tried to address most of these points in the previous pages.

For me, the largest omission is the lack of a parallel *object model* that would support the state/transition model I've articulated. I speak of the numerous objects created and manipulated through the research process, but there's no visual representation of their relationship. The table listing states and objects could provide the basis for creating such a model.

I've neglected to articulate some concepts critical to the research and development process. Andy Cargile noted that the model lacked a representation of Need as common "currency" within PHC's existing (largely implicit) lexicon. Also missing is a clear articulation of an Insight. Both of these objects are crucial to the synthesis of Findings, but they don't really appear explicitly in my discussion.

There are a few other activities that either need to be incorporated into existing states, or explicitly defined as distinct states. There needs to be a "governing" state; that is, a state that makes sure research is kept on schedule and that the research process doesn't needlessly pursue tangential topics. I've placed the burden of this activity within "Initiating Action on Findings," but it may need to be drawn out more explicitly. Conversely, others have suggested creating states that ensures no stone is left uncovered. I've tried to incorporate numerous avenues toward initiating new research within the model, so that initiating new research becomes an intrinsic side effect of pursuing the research process. If a state were developed specifically for the purpose of following all possible research avenues, it would directly conflict with the theoretical "governing state." It is worth resolving these issues. Yet another person suggested a state that existed purely for tracking and "not forgetting" outstanding issues and needs. I believe this function is fulfilled through a pretty well-developed archiving process. Also, while I've built a state that checks for Standards *violations*, I haven't developed a state for *confirming existing assumptions and theories*. Such a state should be explicitly added to the model.

Some initial definitions of Objects
(These definitions have already appeared throughout the document)

Event – *an instance of something happening, somewhere, for some period of time.*

Research Frame – *An analytical, methodological or other tool or technique used for managing information derived through research. A filter. Frames are usually subsets of research methods. Examples include Frameworks (AEIOU, SOAP); content analysis; creating a videogram; developing Observations/Speculations.*

Deconstructed Event – *An event that has been observed and interpreted and the interpretation externalized in some way. The simplest example of deconstruction is the verbal recollection of something that happened to you on your way to the airport (but in this case, the effectiveness of the deconstruction depends on the speaker, and maybe on the quality of the cab ride).*

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Finding – *An informed opinion that prescribes action. "We've discovered a hole in the ozone layer above Antarctica. Man-made fluorocarbon gases are primarily responsible for this ozone depletion. We believe that a) ozone depletion is a bad thing; b) Industrial countries are primarily responsible for fluorocarbon emissions, and c) that a ban on further production of fluorocarbons by industrial nations could partially ameliorate the problem. Therefore, we urge that industrial countries act immediately to ban fluorocarbon production etc etc…"*

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The full list

(HelpDesk, Marketing, PHF, etc)
Abstract
Classification
Event
External decision-makers
Feedback Analyzer
Feedback Repository
Findings Characteristics Archive
Formatted Event Deconstruction
Goals/Outcomes
Implementor
Marketing
Observation
Preliminary Finding
Product Manager
Recorded Event
Research Archives
Research Consultant
Research Initiator
Research Protocol
Research Strategy
Resource
Secondary Research
Standards Evaluator
Study-Specific Outcome
Transcribed Event

[Archived] Protocol(s)
Action Initiator
Design Standard
Event Recorder
External Goal
Feedback Anomaly
Finding(s)
Findings Distributor
Frame
HelpDesk;
Internal decision-makers
New Research Initiator
Pattern
Preliminary Research Document
Project Lead
Recording
Research Conclusions
Research Environment
Research Methods
Research Protocol Archive
Research Synthesis
Scoping Document
Secondary Research Conclusions
Study-specific Goal
Tech Support;
User Feedback Channels

[New] Protocol
Anomaly
Design Standard Repository
Event Transcriber/Formatter
External Priority
Feedback Pattern
Findings Characteristic
Findings Repository
Goal
Implementation Strategy
Key Decision-maker
New Research Request
PHF (Personal Health Facilitator)
Priority
Reconciled Findings
Recording Media
Research Conclusions Document
Research Frame
Research Participant
Research Resource
Researcher
Scoping Document Repository
Standard
Study-Specific Goals
Timetable
Violation

The Whole Tamale

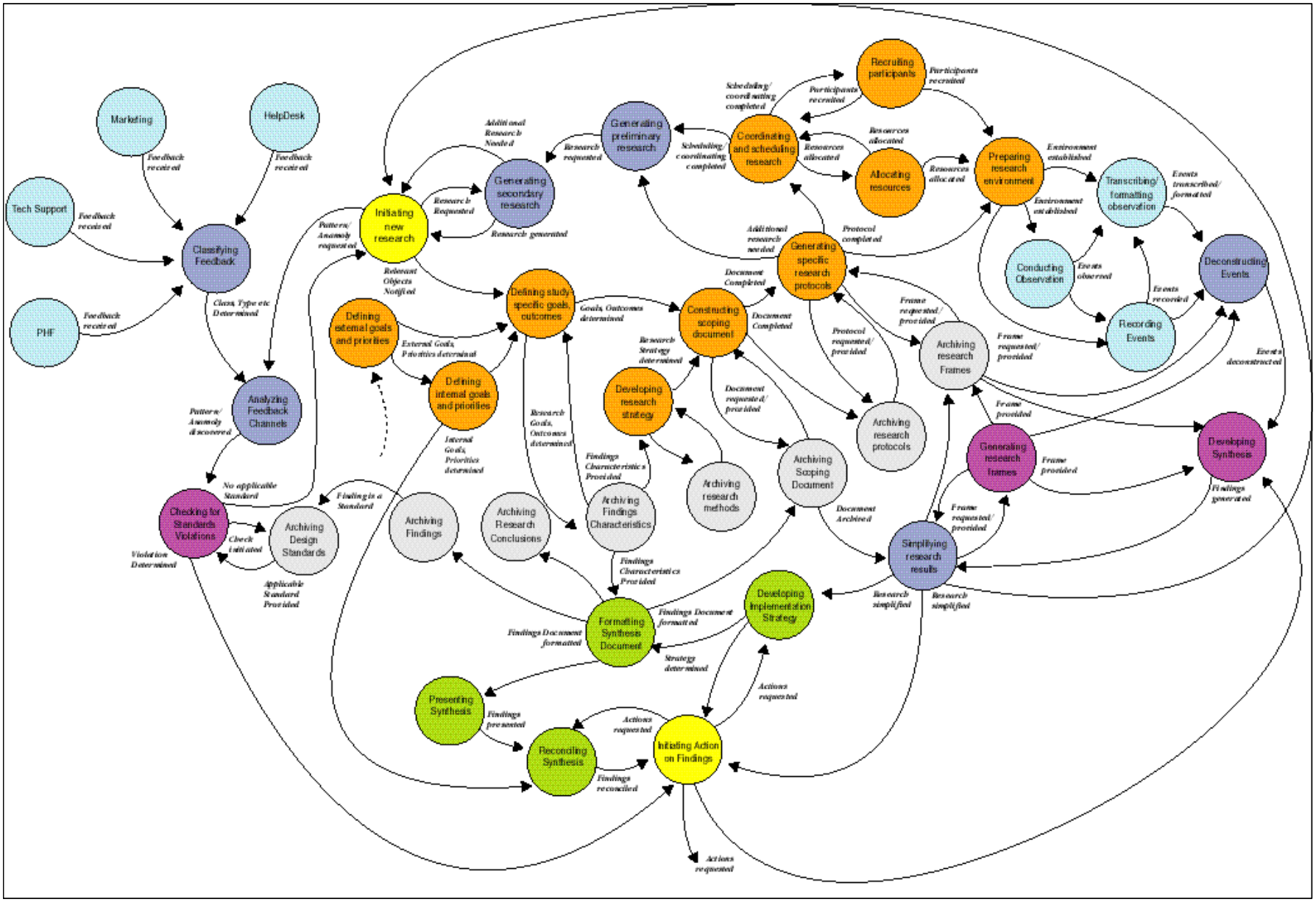

Table: States, Activities/Responsibilities, Objects/Collaborators

State	Activity/Responsibility	Objects (collaborators
Allocating Resources		
Analyzing Feedback Channels	• Beyond categorizing feedback and putting it into reasonable "buckets," Feedback needs to be analyzed comparatively. • Patterns and Anomalies need to be identified. If either a Pattern or an Anomaly is identified, it must be measured against Standards. • If no Standards Violation is determined, the Pattern or Anomaly may be unique; the Analyzer may request that new research be initiated.	>Pattern; > Anomaly; Feedback Analyzer; Design Standard; New Research Initiator; Research Archives; User Feedback Channels (HelpDesk, Marketing, PHF, etc)
Archiving Design Standards	• Standards are stored and retrieved from the Design Standards Repository.	Design Standards Repository; Findings Repository; Finding; Research Resource
Archiving Findings	• Findings are stored and retrieved from the Findings Repository. • When a Finding is also a Design Standard, the Finding is provided for Archiving Design Standards. *[There should also be some sort of function for reviewing and analyzing archived Findings: which were implemented, which weren't, and why?]*	>Findings repository; Findings; Design Standard
Archiving Findings Characteristics	• Findings Characteristics are stored and retrieved from the Findings Characteristics Repository. • Findings Characteristics are actively provided to Research Strategy developers and Goal/Outcome developers	Findings Characteristics Archive; Findings Characteristic; Finding; Goals/Outcomes;
Archiving Research Frames	• Research Frames are stored and retrieved from the Research Frames Repository. • Research Frames are actively provided, and provided upon request, for: Deconstructing Observed Events; Initiating New Research; Simplifying Research Results; Archiving Research Frames	>Research Frame
Archiving Research Methods	• Research Methods are stored and retrieved from the Research Methods Repository. Methods are provided to whomever/whatever is generating the Scoping Document.	
Archiving Research Protocols	• Research Methods are stored and retrieved from the Research Methods Repository. • Research Protocols are actively provided to the Protocol generator	Research Protocol; Research Protocol Archive
Archiving the Scoping Document	• Scoping Documents are stored and retrieved from the Scoping Document Repository.	Scoping Document Repository;

Checking for Standards Violations	• Patterns or anomalies need to be compared to the appropriate Standard. • A Pattern or Anomaly that violates a known Standard constitutes a Finding if the rule specifies Action upon violation of that Standard (refer to the definition of a Finding). • A Pattern or Anomaly that doesn't violate a Standard can be referred back to Analyzing Feedback Channels. • A Pattern or Anomaly that violates a non-actionable Standard is also referred back for further analysis.	>Violation; Standard; Design Standard Repository; Standards Evaluator; Feedback Pattern; Feedback Anomaly
Classifying Feedback	• Divide Feedback into reasonable and/or predetermined categories for subsequent analysis • Prepare Feedback for Archiving and Analysis	>Classification; HelpDesk; Marketing; Tech Support; PHF; Feedback Repository
Conducting Observation	[observation writ large] • Observe Events according to Research Protocol • Analyze Events during observation using Frames specified in Protocol	>Observation; >Event; Researcher; Research Participant; Event Recorder; Research Protocol; Research Frame; Research Environment
Constructing the Research Conclusions Document	Summarize research (create an Abstract); describe Conclusions; describe Findings; describe Implementation Strategy (if available);	>Research Conclusions Document; Research Conclusions; Abstract; Findings; Findings Characteristics; Implementation Strategy
Constructing the Scoping Document	• Match Research Strategy (with embedded Findings Characteristics) to appropriate method(s) • List Goals, Outcomes of research	>Scoping Document; Study-Specific Goals; Study-Specific Outcomes; Research Strategy; Research Methods
Coordinating and Scheduling Research		
Deconstructing Events	• Analyze [recorded, formatted/transcribed] events using appropriate Frames. Examples (not mutually exclusive): - Employ a Structured Planning approach. Deconstruct into Observations, Speculations etc - Employ a cataloguing approach (AEIOU framework) - Employ a content-analysis approach - Employ a structured group brainstorming approach • Present results in a format that can be used for generating Preliminary Findings	>Formatted Event Deconstruction [terrible title]; Frame; Recorded Event; Transcribed Event; Researcher
Defining External Goals and Priorities	• If research is subcontracted or otherwise performed for outside parties, Goals and Priorities of research must be established and agreed upon.	>Goal; >Priority; Researcher; Internal decision-makers; External decision-makers
Defining Internal Goals and Priorities	• Goals and Priorities of research agreed upon by responsible parties. • Goals and Priorities of Findings also agreed upon by relevant parties (but decisions may be modified during Reconciliation).	>Goal; >Priority; External Goal; External Priority; Researcher, Internal decision-makers; Findings; Findings Distributor

Defining Study-Specific Goals, Outcomes	Researchers and other decision-makers define specific goals and outcomes to be accomplished within a particular Research Project. Findings Characteristics are incorporated based on projected end-use of Findings (i.e., by Engineering, Design, Marketing, etc) and based on analysis of internal/external Goals and Priorities	>Study-specific Goal; >Study-specific Outcome; Researcher; Findings Characteristic
Determining Action on Research Conclusions	This is a more formal activity that occurs after research results have been simplified Determine which research insights are actionable and which aren't Determine what Actions to take (develop Findings)	>Findings; Research Conclusions; Action Initiator; Researcher; Research Consultant;
Developing Implementation Strategy	[this activity may be outside the boundaries of Research, however broadly defined] Prioritize Findings to be implemented Determine Implementors Determine schedules, timetables, sequences Determine resources Determine constraints	>Implementation Strategy; Key Decision-makers, researcher; Findings; Implement; Timetable, Resource etc
Developing Synthesis	This activity is designed to uncover insights that, however preliminary, require some sort of Action without completing the formal Findings/ Implementation process. • Determine which research insights require some form of action [a value-judgement by the Researcher(s)] [Synthesis + Action = Finding] • Determine which research insights are important but primarily speculative at this point[Synthesis without Action]	>Preliminary Finding; >Research Synthesis; Formatted Event Deconstruction; Researcher
Developing the Research Strategy	• Develop overall research approach: - Choose Methods to match Goals/Outcomes + Findings Characteristics - Develop general timeline - Develop general sequence - Determine general resource needs	>Research Strategy; Findings Characteristics; Research Methods; Goals/Outcomes; Researcher
Generating Preliminary/Informal Research	• Schedule and conduct informal interviews, conversations, non-exhaustive secondary research • Develop general directions for further secondary/ primary research	>Informal Research; Interview; Conversation; Research Protocol; Researcher
Generating Research Frames	Develop new analytical or methodological approaches when requested and on an ongoing basis. Submit Frames for Archiving Frames; Simplifying Research Results; Deconstructing Events	>Frame; Researcher; New Research Initiator
Generating Research Protocols	Develop specific, detailed instructions for accomplishing Objectives delineated in Scoping Document	>[New] Protocol; [Archived] Protocol(s); Research Frame; Scoping Document

Generating Secondary Research	[This is a huge set of activities that begs further exploration] • Lit searches and analysis; research and analysis of health trends, tech trends, web trends, new research techniques and approaches; etc etc etc • Discovery and analysis of any secondary source material that validates (supports) or invalidates assumptions derived from internal primary research • So much more…	>Secondary Research Conclusions; Researcher; Library; Book; Web Site; Back of Cereal Box; Graffiti Above Urinal; Billboard(s); Most Milk Cartons
Initiating Action on Findings	People may agree that action needs to be taken based on research conclusions. But the desire, motivation or ability to actually take action isn't a natural consequence of this agreement. For this reason, Initiating Action is a function external to the design and implementation processes. The Action Initiator (a horrible title) is basically an institutionalized pest who hounds relevant parties into finishing the process of Reconciling Findings on the one hand, and determining Action on research results on the other. The Action Initiator may initiate action even when Findings haven't been reconciled, unless specifically prohibited from doing so by some Key Decision-maker.	Findings, Reconciled Findings; Researcher; Action Initiator; Project Lead; Product Manager; Key Decision-maker
Initiating New Research	• Determine whether Patterns or Anomalies warrant further exploration • Actively seek new primary, secondary research opportunities	>New Research Request; Pattern; Anomaly; Secondary Research; Researcher; Research Initiator
Preparing Research Environment		
Presenting Research Conclusions	***This is a group activity*** • Summarize research; describe Conclusions; describe Findings; describe Implementation Strategy (if available) • Initiate discussion on Implementation, significance of research; modification of Conclusions and Findings [this is all preparation for Reconciliation]	
Reconciling Findings	Findings represent Researcher value-judgements concerning how to react (what action to take) to research conclusions. These value-judgements need to be reconciled with opinions, priorities and other information not necessarily at the disposal of Researcher. What the research "really means" may be modified; what action to take may also change.	>Reconciled Findings; Findings; Researcher; decision-makers; Action Initiator
Recording Observed Events	Record Events based on what is to be analyzed and how (i.e., acoustic recording; full-motion recording; random sampling)	>Event Recorder; Recording Media; >Recording; Research Protocol
Recruiting Participants		

Simplifying Research Results	• Assure Findings and Research Conclusions are presented according to the conditions stated in Scoping Document (and any new conditions) • Create a Preliminary Research Document for distribution to targeted parties Ex: PHC Designers format a Preliminary Findings Document for internal use, but it becomes necessary to create a document for a new PHC business partner that doesn't disclose proprietary information.	>Preliminary Research Document; Preliminary Findings;
Transcribing/Formatting Events	Deconstruct events into a form that can be more efficiently analyzed by relevant Researchers and other parties (i.e., a written transcript)	>Event Transcriber/Formatter; Recording