Operational Concept Description (OCD)

Pediatric Trauma Society

Research Investigator Databank

Team 1

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Version History

Date	Author	Version	Changes Made	Rationale
10/10/12	NM	1.0		• Initial draft; 1.1, 1.2, 2.1, 2.2, 2.4, 3.1, 3.2, 3.3
10/15/12	NM	1.1	• Added 2.3, remainder of 3	• All sections now have a draft
10/22/12	NM	1.2	• Revised 2, 3.1, 3.3.2, added tables of contents	• General revisions
10/30/12	NM	1.3	• Revised 3.1.3, 3.2, 3.3.1, 3.3.2, 3.4.2, other minor rewording	• Preparation for ARB
11/5/12	NM	1.4	• Revised 2.1, 2.2, 3.1.3, 3.3	• ARB comments
11/25/12	NM	2.0	• Revised 2.4, Figs. 2-5, Tables 3.2.1, 3.2.4	• Corrections and new requirements
12/3/12	NM	2.1	• 2.4, 3.1.1, 3.2.1	• Corrections
2/11/13	NM	3.0	• 3.3.1, 3.3.2	• Corrections
4/1/13	NM	4.0	• 2.4, 3.3.1, 3.3.2	• Corrections

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1. Introduction

1.1 Purpose of the OCD

This document details the success-critical stakeholders' shared vision and goals for the Pediatric Trauma Society's (PTS) new Research Investigator Databank (RID). The stakeholders are the USC development team, the marketing and research teams at PTS, and PTS's webmaster.

1.2 Status of the OCD

All sections are complete, ready for the IOC package.

2. Shared Vision

2.1 Program Model

Assumptions:			
• People are willing to use an electronic system for collaboration • Increased collaboration improves research			
Stakeholders (Who)	Initiatives (What)	Value Propositions (Why)	Beneficiaries (For Whom)
• Developers • PTS marketing team • PTS research team • Webmaster • Database administrator	• Develop System • Market the project and get people to sign up. • Promoting success stories. • Collect statistics on injuries • Perform outreach of new research • Train the web master.	• Increase research collaborations between members of PTS. • Improve education and research. • Reduce number of injuries for children. • Reduce the burden on hospitals and clinics.	• Members of PTS • The medical field • Children • Parents • Hospitals, Clinics, Society

Table 1: Program Model

2.2 Benefits Chain

Assumptions

- People are willing to use an electronic system for collaboration
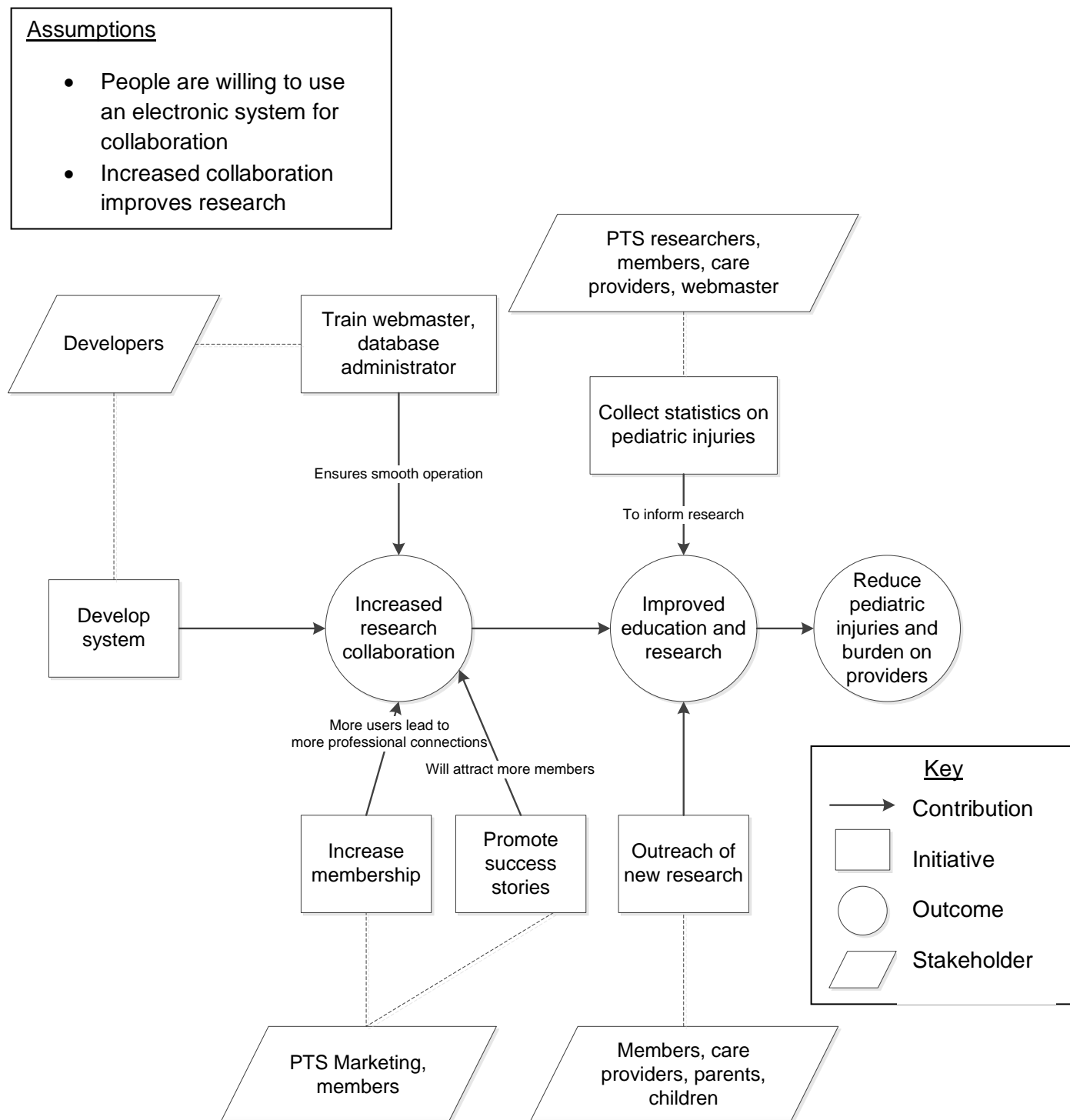- Increased collaboration improves research

Figure 1: Benefits Chain

2.3 System Capability Description

The new system to be built for PTS consists primarily of two new modules to be added to the society's website for the exclusive use of its membership. The first is a searchable database, culled from the vast information stored on PubMed. The second is a discussion board. Now, all the material is already available through PubMed, and there are numerous forums on pretty much every topic. However, the goal is to narrow down the subject to research directly related to pediatric health concerns, in order for members to easily find relevant research and practitioners for collaboration. Right now, PTS's members have a difficult time wading through all the research and finding other pediatric specialists. By having a database focused solely on the field of pediatric medicine, members will not have to waste time combing through PubMed to find research directly concerning children. The discussion board furthers the goal of increased collaboration by providing a space for PTS members to communicate with each other, as opposed to the current website, where there is no space for researchers to casually discuss topics.

2.4 System Boundary and Environment

• See published articles with abstract	
• Display a collaboration map	
• Member profile	
• Post new topics and respond to existing ones	
• User can see list of personal MESH terms	
• Keyword search	
• Advanced search	
• Member search	
• Send/receive messages	
• Post CV	
• View message history	
• Custom database	

Support Infrastructure
- Php, Perl, Javascript, jQuery
- MySQL

PTS Members

PTS Website

PTS Authentication Module

Internet

GoDaddy service

DBMS Admin

Moderators

PubMed

Webmaster

PTS Servers

Key

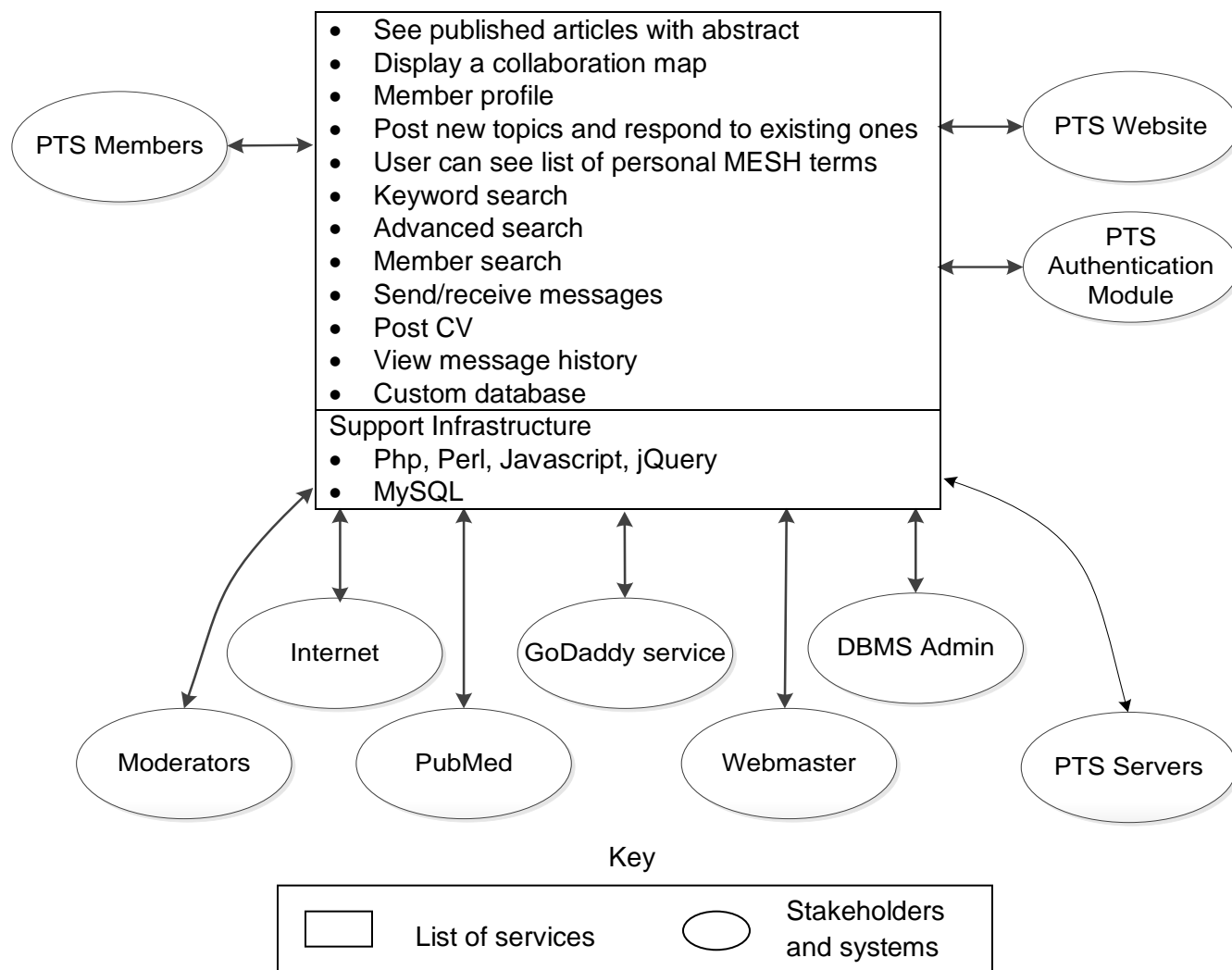| | List of services | | Stakeholders and systems |

Figure 2: System Boundary and Environment

3. System Transformation

3.1 Information on Current System

3.1.1 Infrastructure

The website is written in Perl. Its HTML files are currently hosted on GoDaddy, which offers hosting plans that can support an unlimited number of 1GB MySQL databases and unlimited space. The members-only portion of the site, containing all the dynamic functions, is self-hosted on PTS's servers, and uses SQL Server. PTS uses WebBoard, hosted by dundee WebBoard Solutions, but nobody has ever used it.

3.1.2 Artifacts

- Website home page
- Members area
    - Member search - Searching for a member brings up the person's directory entry
    - Update membership – Form to update contact information and user/password
    - Executive Board minutes
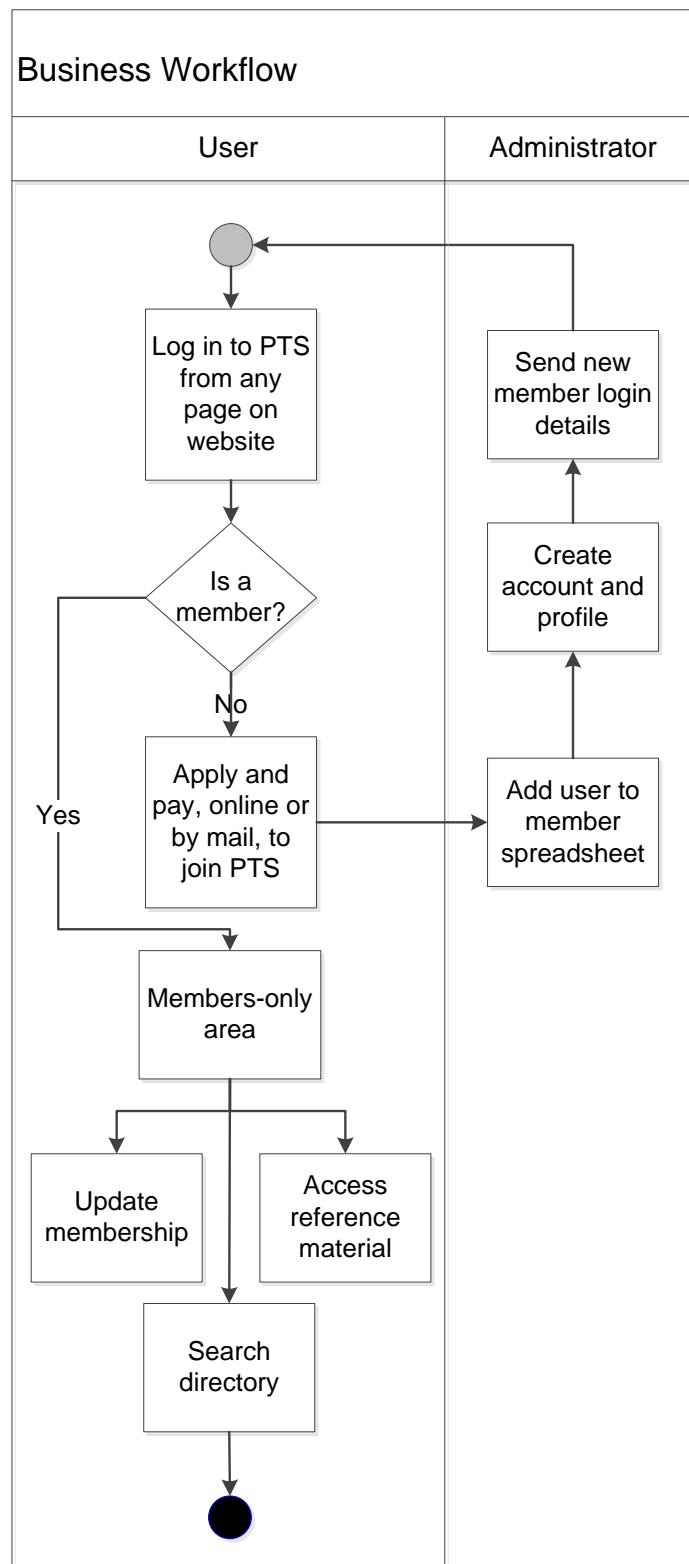   - Newsletters

3.1.3 Current Business Workflow

Figure 3: Current Business Workflow

3.2 System Objectives, Constraints, and Priorities

3.2.1 Capability Goals

ID	Capability Goal	Priority
OC-1	**Custom Database:** There shall be a database populated with information from PubMed	Must Have
OC-2	**Article Search:** Members can search by keyword, author	Must Have
OC-3	**Member Search:** Members can search member directory	Must Have
OC-4	**Profile Contents:** User shall have a profile page with a list of personal MESH interests, articles, downloadable CV	Must Have
OC-5	**Discussion Board:** Members can post and respond to topics	Should Have
OC-6	**Private Messaging System:** Members can send/receive messages and see message history	Should Have
OC-7	**Frequent-Collaborators List:** Members will have a list that displays his or her most-frequent coauthors	Would Like
OC-8	**Advanced Search:** Separate detailed search: MESH, state, etc.	Should Have
OC-9	**Collaboration Map:** Frequent-collaborators list overlaid on a map	Would Like

Table 2: Capability Goals

3.2.2. Level-of-Service Goals

ID	Level-of-Service Goal	Priority
LOS-1	**Number of Users:** Support 200 users, 100 concurrently	Must Have
LOS-2	**Scalability:** System shall be able to expand as membership and database grows	Must Have
LOS-3	**Response Time:** Search time will be under one minute	Must Have
LOS-4	**Downtime:** Consistent and no more than four hours per month	Should Have

Table 3: Level-of-Service Goals

3.2.3 Organizational Goals

ID	Organizational Goal
OG-1	**Share Research:** Increase dissemination of research by providing a custom database
OG-2	**Prospective Partners:** Create a space to learn about members' work with detailed user profiles
OG-3	**Facilitate Communication:** Encourage members to connect with each other through the discussion board and messaging system

Table 4: Organizational Goals

3.2.4 Constraints

ID	Constraint
CO-1	**Exclusivity:** Members are the only users that can access the system
CO-2	**Compatibility:** The new components must be compatible with the current website, which is coded in Perl
CO-3	**Budget:** Still under discussion

Table 5: Constraints

3.2.5 Relation to Current System

Capabilities	Current System	New System
Roles and Responsibilities	• Website wholly maintained by webmaster	• Moderators will guide discussion board • New designated database manager
User Interactions	• Some reference material • Search directory • Unused forum	• Find pediatric research • Find detailed member profiles • Communicate with members
Infrastructure	• Simple website	• Regularly updated database
Stakeholder Essentials and Amenities		• Current repository for pediatric research • Easy-to-use communication tools
Future Capabilities		TBD

Table 6: Relation to Current System

3.3 Proposed New Operational Concept

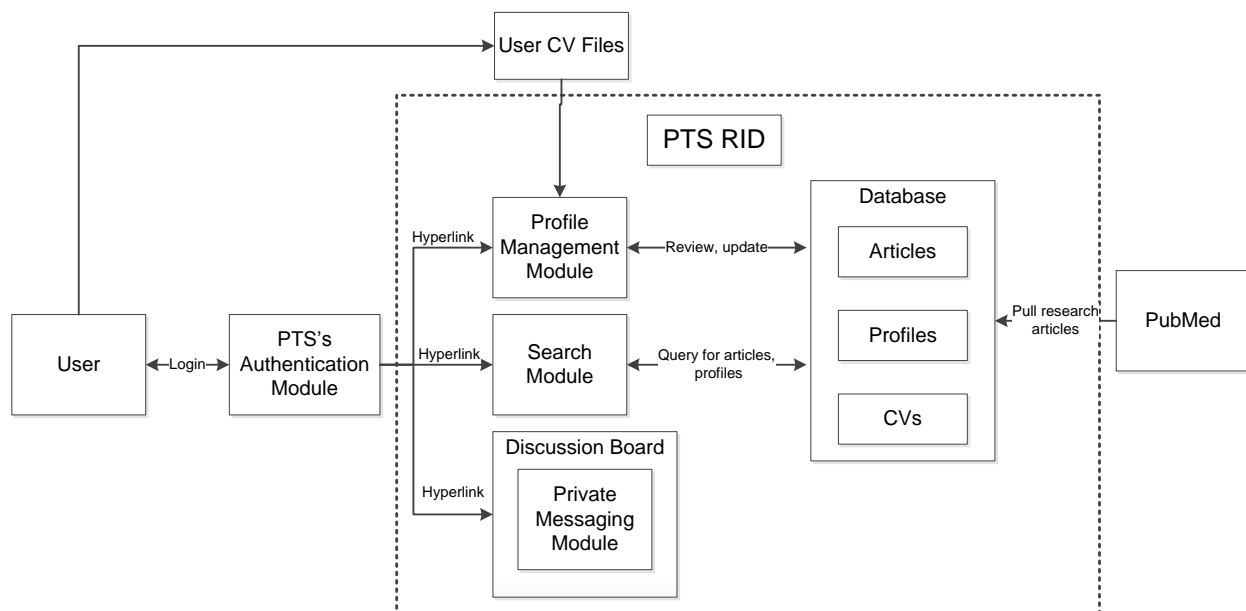## 3.3.1 Element Relationship Diagram

Figure 4: Element Relationship
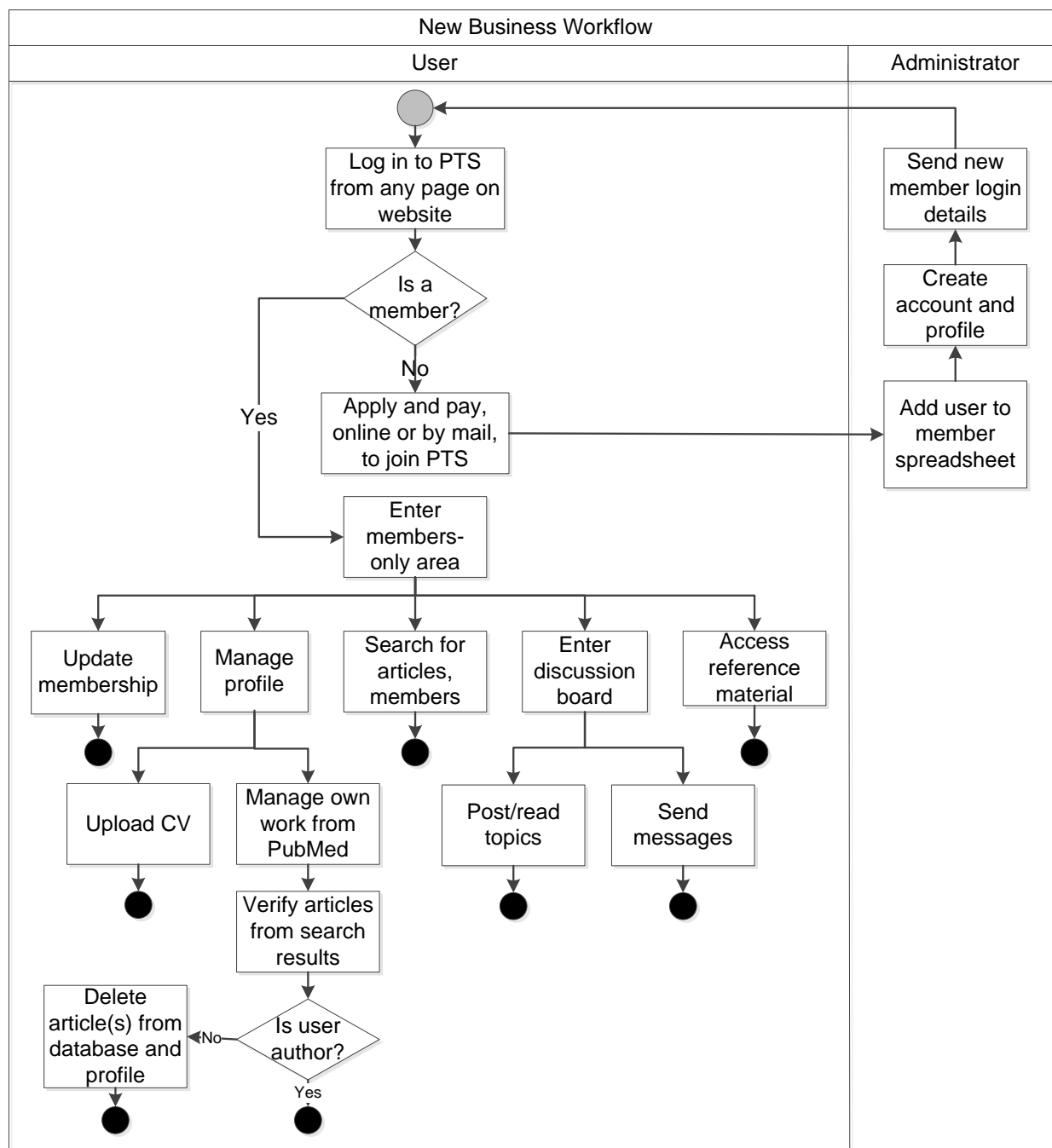
3.3.2 Business Workflow Diagram

Figure 5: New Business Workflow

3.4 Organizational and Operational Implications

3.4.1 Organizational Transformations

- A database manager will need to be hired, or an existing staff member can be trained, to maintain the new database and troubleshoot it when any problems arise. He or she will need to work with the webmaster to ensure that the database cleanly interfaces with the site.
- The discussion board will need several moderators to keep it organized, update it, and mediate any interpersonal conflicts that arise. Moderators need not be new hires, but can be PTS officials, or any active and personally invested member who wants some responsibility. These people will be intimate with the daily running and, possibly, troubleshooting of the software.

3.4.2 Operational Transformations

- PTS will become a new destination to find up-to-date pediatric research.
- Members will gain a revamped site that is a useful place to meet other researchers and communicate, hopefully leading to increased research collaboration and greater shared knowledge.