

# **Operational Concept Description (OCD)**

## **BlackProfessionals.net**

Version 3.1

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### **Team 06**

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# Version History

Date	Author	Version	Changes made	Rationale
09/22/2014	JT	1.0	<ul style="list-style-type: none"> <li>Initial version</li> </ul>	<ul style="list-style-type: none"> <li>The first version of OCD, as part of the Valuation Commitment Package</li> </ul>
09/25/2014	JT	1.1	<ul style="list-style-type: none"> <li>Refinement: program model, benefits chain, system boundary and environment</li> </ul>	<ul style="list-style-type: none"> <li>Based on Win-Win session on 09/23</li> </ul>
10/13/2014	JT	2.0	<ul style="list-style-type: none"> <li>Updated: some structures prior to Chapter 3 are modified to satisfy the latest provided template. Some figures are made color.</li> <li>Added: content beginning from Section 3.2, as the essential information for Foundation Commitment Package</li> </ul>	<ul style="list-style-type: none"> <li>Based on Win-Win session on 09/30 and the client meeting on 10/03</li> </ul>
10/19/2014	JT	2.1	<ul style="list-style-type: none"> <li>Fixed: Benefits chain diagram, system boundary diagrams are corrected and current business workflow diagram</li> <li>Updated: The new business workflow diagrams are split into subdiagrams.</li> </ul>	<ul style="list-style-type: none"> <li>Based on Architecture Review Board conducted on 10/14</li> </ul>
12/01/2014	JT	3.0	<ul style="list-style-type: none"> <li>Fixed:               <ol style="list-style-type: none"> <li>Some minor changes in wording and expressions of the context.</li> <li>Correspondence between program model and benefits chain diagram.</li> </ol> </li> <li>Updated:               <ol style="list-style-type: none"> <li>Summarized to three major roles for users.</li> <li>In System Boundary Diagram, the latest services provided by the project are reflected.</li> <li>In Capability Goals, CG-8 and CG-9 are introduced.</li> <li>In Element Relationship Diagram, the <i>Group System</i> and <i>Recommendation Letter</i> are introduced.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Base on the Client Meeting on 11/13 and 11/18, and FCP feedback on 11/26</li> </ul>
12/08/2014	JT	3.1	<ul style="list-style-type: none"> <li>Prepared for DCP document.</li> </ul>	<ul style="list-style-type: none"> <li>Based on Architecture Review Board conducted on 12/01</li> </ul>

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# 1. Introduction

## 1.1 Purpose of the OCD

The operational concept document description (OCD) aims to depict the current progress of the system, BlackProfessionals.net (denoted "the project" below), in view of the shared visions, system transformation, and so on. This is to provide the stakeholders with more detailed information regarding to the system's overall operational concept, so that they can have a more complete picture about the project.

The success-critical stakeholders of the project are identified as follows:

- Prentice Parr Jr., Founder and Owner of the Project (with USC Marshall MBA)
- Prentice Parr Jr., Maintainer
- Team 06 of CS577 Fall 2014, Development Team (with USC Computer Science)

This document will be accompanied throughout the entire development process of the project, and will be maintained tightly. See Section 1.2 for the latest document status.

## 1.2 Status of the OCD

The OCD is currently at the version 3.1, released on December 1, under the maintenance of *Jeng-Tsung Tsai*, the operational concept engineer of the development team. The present development is in the *Foundation* stage, where the concepts of all the required/necessary operations are concretely formulated as statements or diagrams, and the project is ready to move forward to *Development* stage. This version is basically the same as 3.0, as there are no new issues (except the project's scope) proposed during ARB. See the version history for the complete logs. This version will be submitted as a part of Development Commitment Package (DCP).

## 2. Shared Vision

We first describe the entire system using *Program Model*, as shown in Table 1, where there are basically five components: *Assumptions*, *Stakeholders*, *Initiatives*, *Value Propositions*, and *Beneficiaries*. To be specific, these terms are reviewed as follows:

- **Assumptions:** the basic conditions that drive the entire program model of the project
- **Stakeholders:** the parties that are responsible for the initiatives
- **Initiatives:** the tasks to do in order to create the benefits
- **Value Propositions:** the benefits obtained via the project
- **Beneficiaries:** the parties that derive the value

**Table 1: The Program Model of BlackProfessionals.net**

<b>Assumptions</b>			
<ul style="list-style-type: none"> <li>• People feel more comfortable connecting to other people from same community</li> <li>• People/Companies find it difficult to search for professionals based on ethnicity and culture</li> </ul>			
<b>Stakeholders</b>	<b>Initiatives</b>	<b>Value Propositions</b>	<b>Beneficiaries</b>
<ul style="list-style-type: none"> <li>• Developers: Team 06</li> <li>• Acquirer: Prentice Parr</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a new platform for connecting professionals based on ethnicity</li> <li>• Users create accounts to access the services, and strengthen their profiles</li> <li>• Marketing: Search Engine Optimization, Social Network Marketing, Academia Marketing, Marketing to Corporations</li> </ul>	<ul style="list-style-type: none"> <li>• Increase engagement experience of black professionals online</li> <li>• Easier ways to connect with other black professionals and thereby gain knowledge</li> <li>• Easier ways for recruiters to connect to black professionals</li> </ul>	<ul style="list-style-type: none"> <li>• Students</li> <li>• Professionals</li> <li>• Companies</li> </ul>

### 2.1 Benefits Chain

As the user-level, upon the completion and service of the system, users can expect to obtain the following benefits:

- More engaging environment
- More prominent presence in professional domain
- Increased employment numbers
- Decrease head hunting time
- Decrease the time for job search
- Improved professional growth of people belonging to African-American community

Together with the other participants of this project, the system can yield the following benefits chain, as shown in Figure 1.

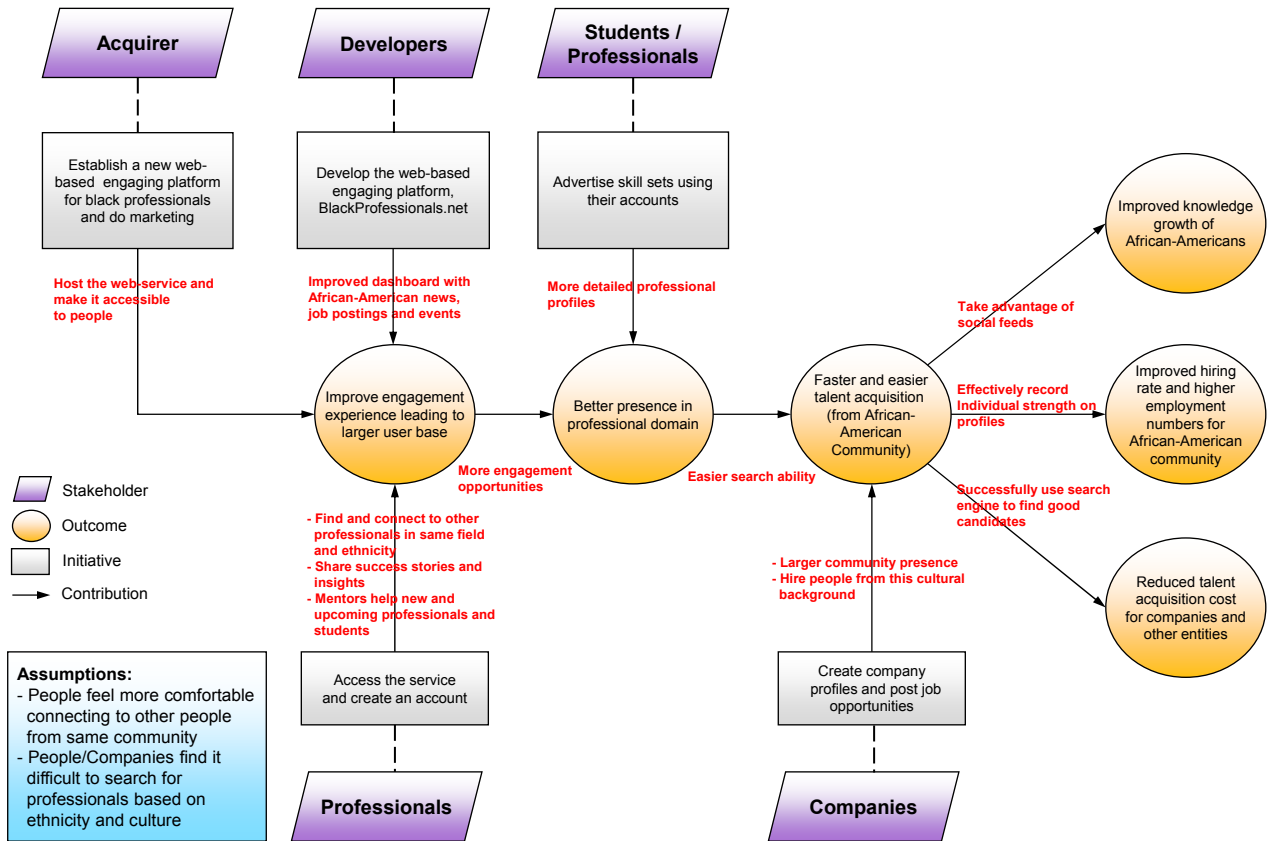


Figure 1: Benefits Chain of BlackProfessionals.net

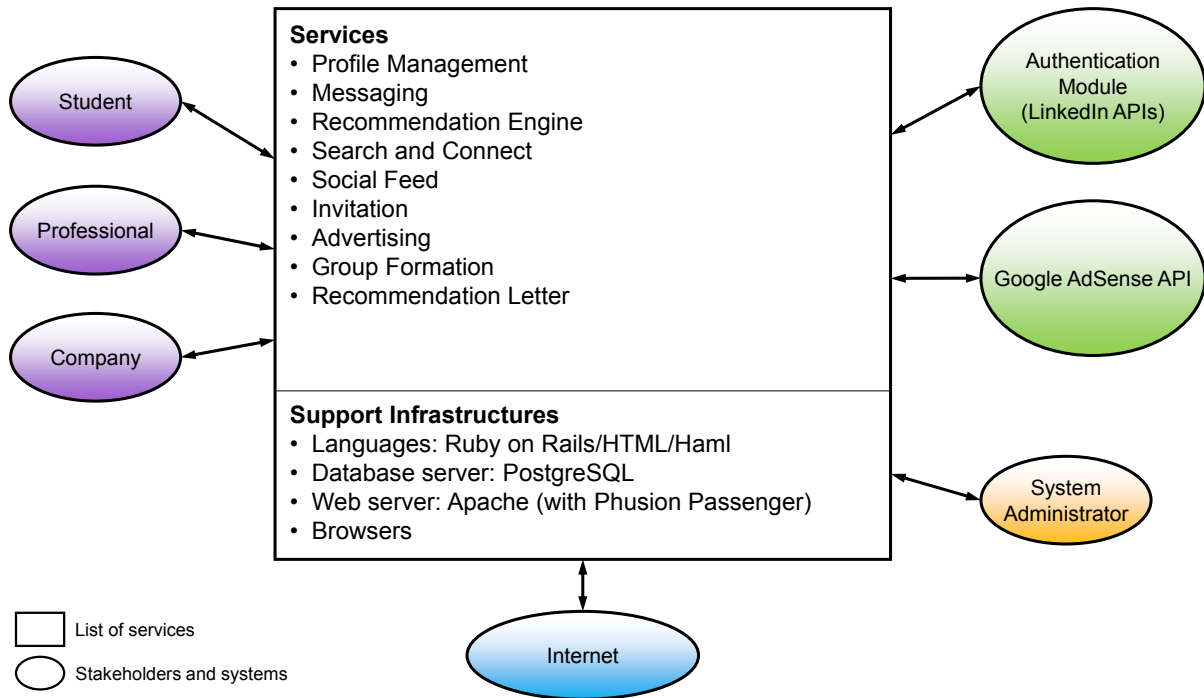
## 2.2 System Capability Description

BlackProfessionals.net is a web-based service which aims to build up an engaging environment for black professionals to connect with each other, so as to communicate knowledge, to share news, to form a group, to write recommendation letters for others, and so on. The system's major customers are people of African American origin, and the users can be categorized into Student, Professional, and Company. The system is conceptually similar to the integration of Facebook and LinkedIn, so it shall leverage the advantage of both. Moreover, it aims to improve the user experience in searching and contacting people who share the same background, which is commonly a time consuming task in the currently available social networks.



## 2.3 System Boundary and Environment

The system boundary and environment describes the services, infrastructures and any possible external systems that the project spans. An overview is described as shown in Figure 1. The following provides a quick review for each part.



**Figure 2: System Boundary and Environment Diagram of BlackProfessionals.net**

In addition to *System Administrator*, there are currently three user-level roles identified that can participate in the system: *Student*, *Professional* and *Company*. Their possible operations are listed in *Services* part, which the development team will mainly be responsible for. The project will be built upon the *Support Infrastructures*. Since the system is web-based, browsers and Internet are necessary for users to access any services. As a development-level, the system will be written by *Ruby on Rails* while adopting *PostgreSQL* as the database server. Some other frameworks and techniques will be applied, such as *Haml*. *Apache* (with Phusion Passenger) is chosen to be the web server under which the application runs. Stakeholders will have to assure the availability of the support infrastructures, depending on the agreement among them, to make the project in service successfully. In order to facilitate the usability of the entire system, some external systems or modules would be utilized. They are depicted on the top-right corner of Figure 2, including LinkedIn API that supports accessing users' LinkedIn accounts, and Google AdSense API that retrieves advertisements.

## 3. System Transformation

### 3.1 Information on Current System

#### 3.1.1 Infrastructure

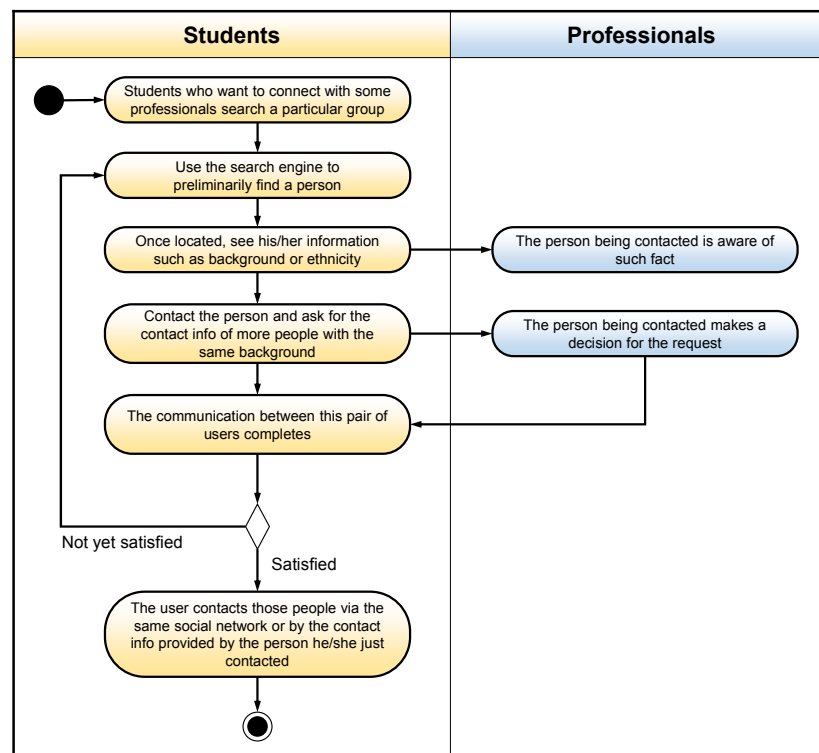
The client has purchased a domain, *blackprofessionals.net*. Currently there are no any platforms or software that has been developed.

#### 3.1.2 Artifacts

There are no artifacts utilized at the client's organization.

#### 3.1.3 Current Business Workflow

The client provided the current approach to obtaining the desired outcomes using the following business workflow (derived from LinkedIn), where the aim to connect with people in a specific background is the focal point.



**Figure 3: Current Business Workflow**

## 3.2 System Objectives, Constraints and Priorities

### 3.2.1 Capability Goals

In this chapter, the capability goals of the proposed systems are first identified. A capability is defined as a function that the system performs or enables users to perform. We here focus on the set of major functionalities that BlackProfessionals.net provides.

**Table 2: Capability Goals**

Capability Goals	Priority Level
<b>CG-1 Profile Management:</b> The system is capable of creating profiles for users, allowing them to maintain the profiles by adding/updating/deleting information. Users can also import their information from their LinkedIn accounts.	Must have
<b>CG-2 Messaging:</b> The system is capable of allowing users to send/receive messages to/from other users in BlackProfessionals.net.	Must have
<b>CG-3 Recommendation Engine:</b> The system is capable of providing some recommendations for connection, showing on the side of a page so that users can easily connect to those who share the same background with them.	Must have
<b>CG-4 Search and Connect:</b> The system is capable of allowing users to search people in BlackProfessionals.net, to connect with other users, and to connect with (join) a group.	Must have
<b>CG-5 Social Feed:</b> The system is capable of allowing users to see an update, involving status changes, new connections, and new posts (of an article, pictures or a video). Users can also see others' updates, and can comment on an update.	Must have
<b>CG-6 Invitation:</b> The system is capable of allowing users to invite their contact in LinkedIn or in email account, and to invite friends in the network to join a group.	Must have
<b>CG-7 Advertising:</b> The system is capable of showing advertisement from schools as well as companies, using Google AdSense API.	Must have
<b>CG-8 Group Formation:</b> The system is capable of allowing users to create groups; group creator serves as the manager, who can accept joining request.	Must have
<b>CG-9 Recommendation Letter:</b> The system is capable of allowing users to write, to review, to accept and to reject recommendation letters.	Must have

### 3.2.2 Level of Service Goals

In this section, the level of service goals is covered, in which the non-functional goals would be focused.

**Table 3: Level of Service Goals**

Level of Service Goals	Priority Level	Referred WinWin Agreements
<b>LOG-1 Search Speed:</b> The system shall return search results in at most 5 seconds.	Must have	WC_3177

### 3.2.3 Organizational Goals

Apart from the system-oriented goals, here we identify the organizational goals as follows:

- **OG-1:** Increase the engagement and improve the searching functionality, so as to attract more users to join this network.
- **OG-2:** Increase the exposure of advertisements by having more users, so as to increase the profits.
- **OG-3:** Gain reputation via the successful job referring resulting from a sequence of interactions in the network.

### 3.2.4 Constraints

According to the client's requirement and the proposal by the development team, together we'll have the following constraints to be obeyed:

- **CO-1 Budget:** The maximum budget of the entire system is \$300 (WC\_3718).
- **CO-2 Storage:** The system should not allow file uploading that occupies too much space where the system deploys. If necessary, external sources represented as URLs should be used. (WC\_3172, WC\_3179).
- **CO-3 Programming Language:** Ruby on Rails will be used as the development language.

### 3.2.5 Relation to Current System

In this section, the relation of the proposed system to the current system is covered. Since the client has no current physical system, we conceptually evaluate the relevant capabilities of current system using LinkedIn, which is the one that the client aims to compare against. We have seen its critical business workflow (as from the client's prospective) in Section 3.1.3.

**Table 4: Relation to Current System**

Capabilities	Current System	New System
Roles and Responsibilities	Not Applicable	The BlackProfessionals.net staffs will maintain the system as well as the database.
User Interactions		Users in BlackProfessionals.net will have more ways to interacting with each other via the services provided in the network.
Infrastructure		The new system will be able to allow users to import their LinkedIn profile via the relevant APIs.
Stakeholder Essentials and Amenities		Not changed.
Future Capabilities		Undefined.

### 3.3 Proposed New Operational Concept

#### 3.3.1 Element Relationship Diagram

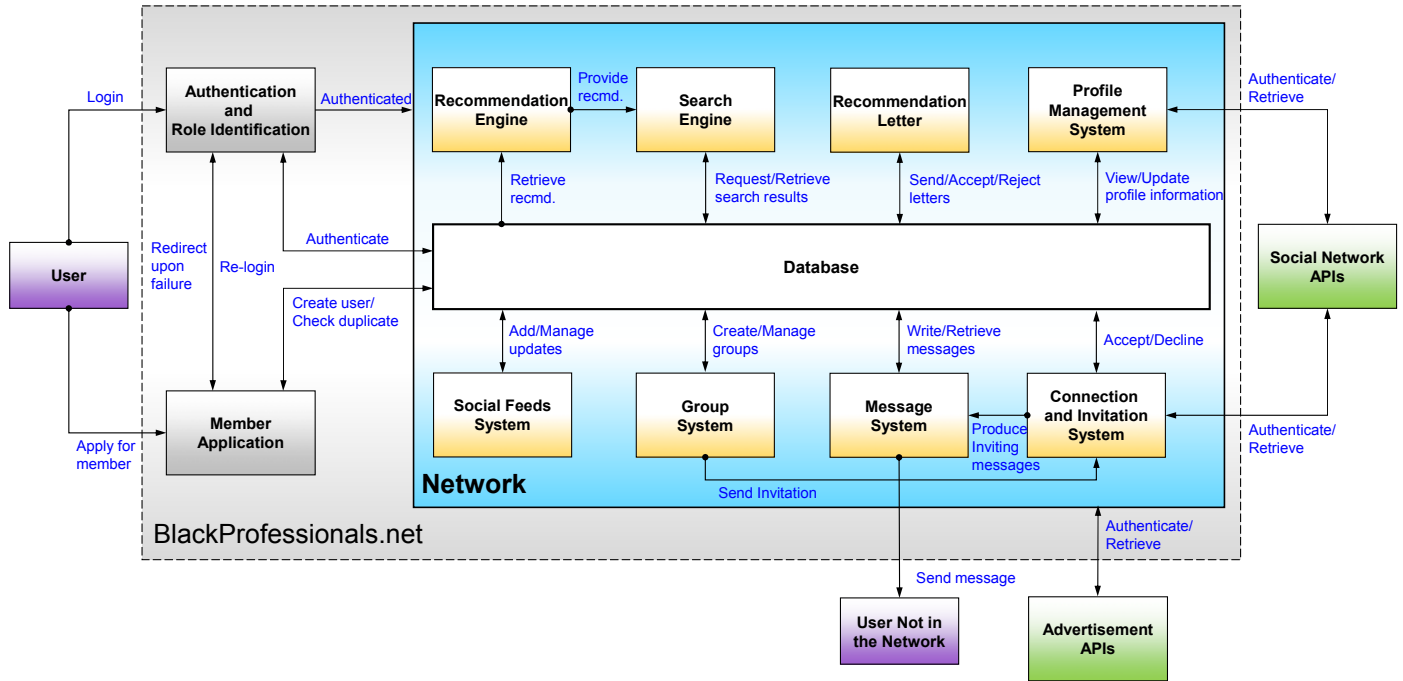


Figure 4: Element Relationship Diagram

#### 3.3.2 Business Workflows

While conceptually most of the system functionalities are similar to their counterparts of other social networks, in this section, the major difference is first identified. Compared with the current business workflows highlighted in Section 3.1.3, it can be clearly observed from Figure 5(a) that the steps in the proposed new business workflows are reduced.

In addition, as this project has put emphasis on the intent to improve the engagement which LinkedIn is lack of, Figure 5(b)(c)(d) identify how an improved engaging "eco-system" would be working, where all the three major roles involved in the proposed system and the basic business workflows for their interactions are highlighted.

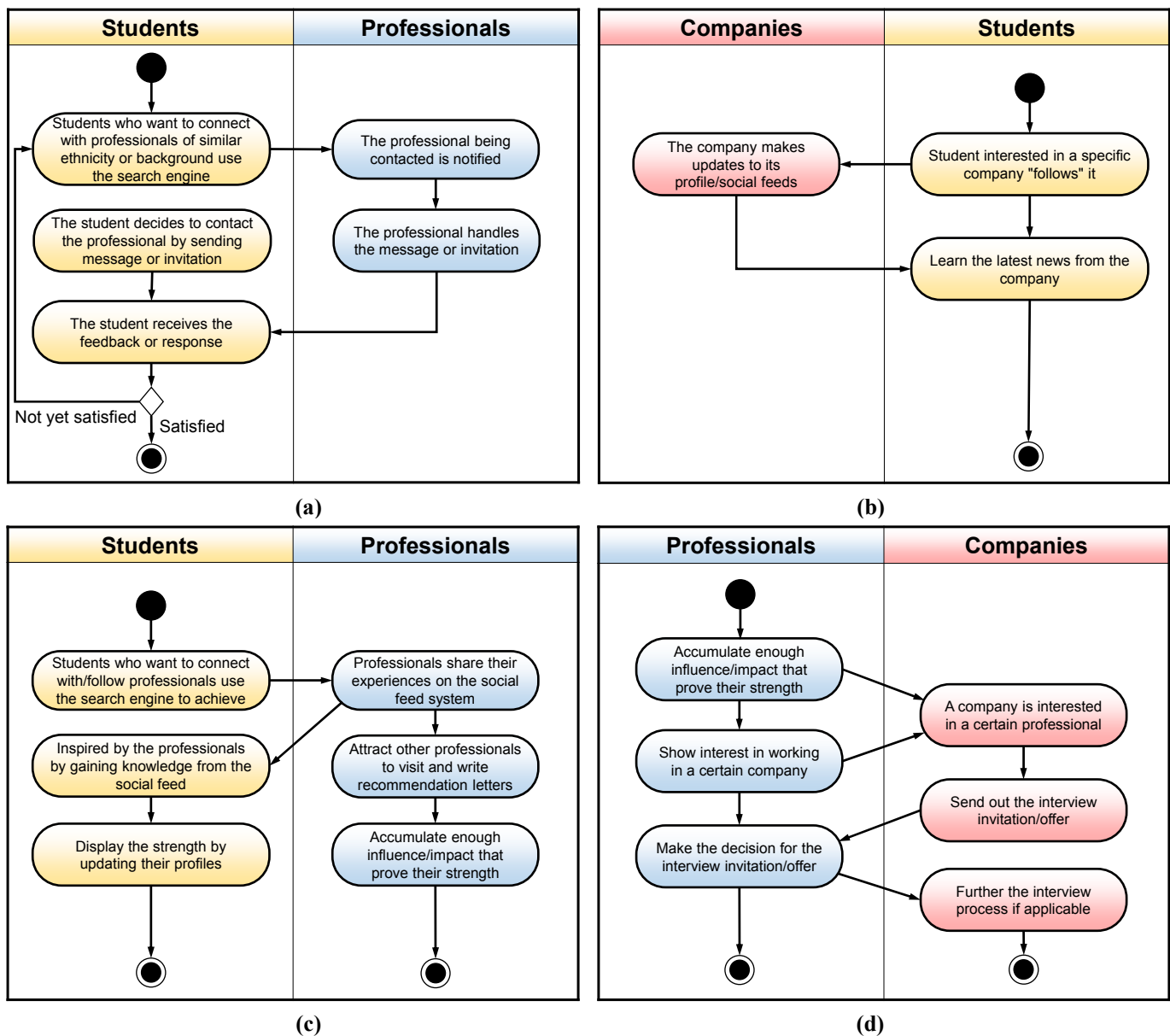


Figure 5: New Business Workflow Diagram

(a) Reducing the number of steps to finding people with similar background (b) Improved interaction between companies and students (c) Improved interaction between students and professionals (d) Improved interaction between professionals and companies

## **3.4 Organizational and Operational Implications**

### **3.4.1 Organizational Transformations**

In this section, the critical transformations in organizational structure are listed. These include the changes of authority, roles and responsibilities resulting from transitioning to the new system.

- The client may need to hire more maintainer(s). If this doesn't apply, the client shall learn how to maintain the website.
- The need to train the maintainer(s) about how to make changes to the system.
- The need to train the maintainer(s) about how to back up the system and database.

### **3.4.2 Operational Transformations**

In this section, the critical transformations in operational procedures and workflows resulting from transitioning to the new system are listed. Here the new workflow is compared against those depicted in Section 3.1.3.

- Users can have one more choice of social network to connect with people.
- Users can efficiently search the people with the similar background in the network.