

IB346 Individual Report

Thomas Barker	Uni. No. 0103782	2 nd Year	Computer Science
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Seminar Group Thursday 3-4 (Group 1)

2100 Words



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A man is flying in a hot air balloon and realizes he is lost. He reduces height and spots a man down below. He lowers the balloon further and shouts, "Excuse me, can you tell me where I am?"

The man below said, "Yes, you're in a hot air balloon, hovering 30 feet above this field."

"You must be an engineer," said the balloonist.

"I am," replied the man. "How did you know?"

"Well," said the balloonist, "everything you have told me is technically correct, but it's of absolutely no use to anyone."

The man below said, "You must be in management."

"I am," replied the balloonist, "but how did you know?"

"Well," said the man, "you don't know where you are, or where you're going, but you expect me to be able to help. You're in the same position you were before we met, but now it's my fault."

Qualities of Information Within AA1

	Job Vacancy	Employer Background
Time <ul style="list-style-type: none"> • <i>Timelines</i> • <i>Currency</i> • <i>Frequency</i> • <i>Time Period</i> 	They are processed on a 24 hour batch system from paper reports ¹ . Usually current for a few weeks*. Are not often revised, but changes would cause problems*.	Accumulated over months/years ² . Used as background for decisions. Becomes outdated only very slowly*.
Content <ul style="list-style-type: none"> • <i>Accuracy</i> • <i>Relevance</i> • <i>Completeness</i> • <i>Conciseness</i> • <i>Scope</i> 	The data is used to match candidates with jobs. Its scope is over a single free job at a single employer. Needs to be very precise and searchable. Often mistyped ¹ . Does not contain all needed information, which sometimes leads to redundant checking ² . Skills information does not have a proper schemata, it only implemented as text strings ² .	Relates to the culture of a particular employer and their relationship with AA1. Recorded by individual counsellors as and when they feel it is relevant ² . Accuracy dependent on the author, no second opinion*.
Form <ul style="list-style-type: none"> • <i>Clarity</i> • <i>Detail</i> • <i>Order</i> • <i>Presentation</i> • <i>Media</i> 	Is currently vague ^{1 2} . It is provided to the counsellors through a text based search interface. This can only filter data by a single attribute, which does not result in a useable list. Final presentation is a reel of teletype printed paper ¹ . This is not very clear and usually only serves as a starting point.	Entirely ad-hoc subjective personal observations stored in lose-leaf paper files ² . Low-levels of detail with no order or structure. It is not intended for presentation to anyone except its writer ² .
Additional <ul style="list-style-type: none"> • <i>Confidence of Source</i> • <i>Reliability</i> • <i>Appropriate</i> • <i>Received by correct person</i> • <i>Sent by Correct Channel</i> 	Are received directly from employers. They are then passed onto the counsellors through the MATCH system. In practice much of it is passed to counsellors directly through informal channels.	Only available to the author, could be useful to many others if was sharable ^{2 1} . Might well need to kept private from the employer concerned*. There are no channels for distribution.

1) Branch Manager

2) Counsellors

3) Regional Director

*) Common-sense inference

Moving AA1 Forward

Introduction

This is an organisation in transition, which means that an IS plan must follow rather than pre-empt AA1's choices about its future. As the regional director wishes AA1 to move to a service model, we will attempt to flesh this out into our chosen ideal.

AA1's key asset is a large professional staff with very extensive experience of the local job market and good customer contacts. Most of the human resources needed to transform the company are already available.

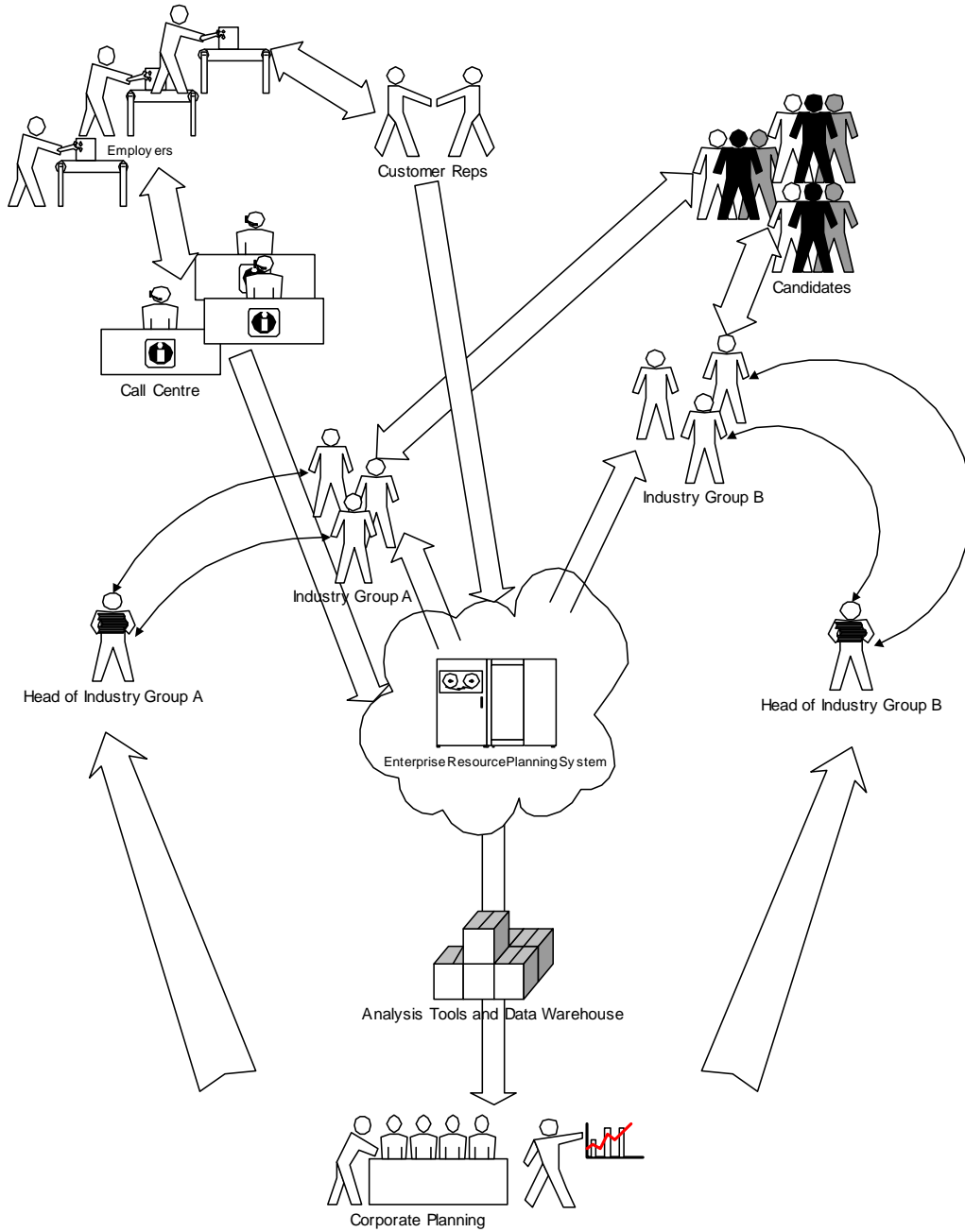
Regional Managers' Plan

AA1 would like to expand into being a large supplier of the skilled labour which businesses increasingly demand. AA1 would have many candidates cycling between assignments, rather than filling permanent places. AA1 would respond to employer's skills needs, rather than reacting to their specific demands. AA1 would then have the capability to plan against the future requirement of the employer. Management would like to use this capability to introduce 'just-in-time' training of candidates to meet specific employer needs. Accurate forecasting of the labour market will become important if AA1 aims to plan ahead.

This will lead to a more diversified organisation with more specialised staff. Account managers for large employers, call centres for small businesses, planning groups for different industries, etc.

AA1's business information system will become a data store used by professionals (counsellors, planning groups), supported by functionaries (clerks, tele-operators), and controlled by a management which actively sets targets so that AA1's behaviour changes appropriately with market conditions.

Looking at this in dataflow terms...



The choice of interaction points with employers and candidates were arbitrary. In practice these would be chosen by management.

Chosen Information Systems

Enterprise Resource Planning System

This will form the core of AA1's IS. AA1 needs to plan the use of many resources [candidates] in a coherent fashion. An ERPS will pull together all of AA1's data into a single extendable framework, within which a scheduling system may be implemented. ERPS have a wide range of off-the-shelf business modules, which will allow AA1 to be more flexible.

Data- Warehouse

Will store the large arrays of historical data from the ERPS, which management want for analysis. A warehouse archives "dead" data, and allows it to be rapidly analysed for trends.

Why Phases? Why These Three?

IS must be useable for the business as it is. AA1 cannot change overnight to suit the software. IS changes must not become discontinuous with the business process re-engineering (BPR).

AA1 does not know exactly what it is doing. It must use each improvement in IS as a stepping stone to the next stage of BPR.

The approach is...

1. Regularise the systems. Will allow AA1 to function properly. Necessary for any progress to be made.
2. Integrate them, and extend to the SME market. The big shift which will in practice consist of many small interdependent steps.
3. Extend into the customer own IS, and improve data-analysis. Not very important, but useful. The limit of the services model.

Phase One – Replacing MATCH and Good Practice

Problem Situation

AA1 has no real system for tracking vacancies, candidates and employers. Information goes missing, systems are left unused, management cannot measure things. Soft information is left in filing cabinets. IT is not properly regularised. As a result each counsellor must be self contained.

Solution

- Replace MATCH with a [relational] database system that works.
- **Train staff to use it!**
- Create some simple shared storage for soft info, encourage staff to use it.
- Get other systems (address books, accounting, etc.) in good order.

Prerequisites

- Public post-mortem of MATCH
- Management must decide if it is cost-effective to move MATCH data to the new system.
- Wide consultation with staff over new database design.
- A changeover plan

Feasibility

Excellent. Technology for a database-client system is well established. All stakeholders want a new system and its need is well-established. An existing system highlights basic needs and pitfalls. Rapid prototyping is normal for such systems, so mistakes can be easily corrected. Soft info sharing can be implemented as a shared network folder, it will require no development.

Targets

- Working database system that is well regarded by staff.
- Management access to working data for decision making.
- Habitual sharing of some useful soft information.
- Good housekeeping of support systems.

BPR Benefits

- Information can be passed between employer and candidate facing teams, allowing them to be independent. Existing customer contacts can be formalised and given greater support.
- All branches will share the same database. This makes branch rationalisation easier.

Phase Two – Implementing A Platform

Problem Situation

AA1 lacks scheduling systems that would allow it to plan ahead for its clients. Handling the SME market will mean creating new ways to interact with customers. Support systems are not integrated with the core business data. The simple soft info sharing scheme is becoming unmanageably full.

Solution

- Implement a full Enterprise Resource Planning System that utilises your existing relational database system.
- Transfer all existing support system data to it.
- Set-up a content-management system for soft info on the ERPS.
- Implement scheduling and reporting systems on the ERPS platform.

Prerequisites

- A consultation leading to a broad consensus of what the ERPS must do.
- Organisation plan for supporting the scheduling system. Creation of working groups around specific industries, etc.
- **Staff support for the coming transition.**

Feasibility

The implementation of such a system is risky and expensive. This is inherent in trying to integrate IS across the board. The cost of the system will need to be carefully managed. AA1 will require additional outside expertise. The full ERPS would need to be rolled out slowly with extensive testing.

AA1 is in a good position to manage such risks, because it already has a working system. They will have solid data to plan against. In the worse case, AA1 could revert to its existing system.

Staff must be fully convinced that the change will benefit them. A great deal of know-how will be transferred into the ERPS. Staff will not help if they feel their positions are being threatened.

Targets

- All information within a single coherent system.
- Reliable forward planning.
- System can be usefully extended with off-the-self modules.

BPR Benefits

- Ability to deal with many SME.
- Can encourage candidates to enter training with the promise of work.
- New business units can be introduced and integrated quickly.

Phase Three – The Last Mile

Problem Situations

Big employers are sending large volumes of vacancies to AA1 which take too long to process. Employer would like to integrate AA1 more closely into their recruiting process. An increasingly skilled candidate pool wish to check for vacancies themselves. Planning wish to improve their accuracy by apply complex processing.

Solution

- Provide API hooks to interact with human resource IS.
- Open a secure web-portal for candidates.
- Create a data-warehouse for planning.

Prerequisites

- Co-operative HR departments
- Significant numbers of candidates on-line.
- Finding a data-warehouse that can take information from the ERPS.

Feasibility

By this point it really does depend too much on what has been done before. However both web-services and data-warehouses are common additions to ERPS.

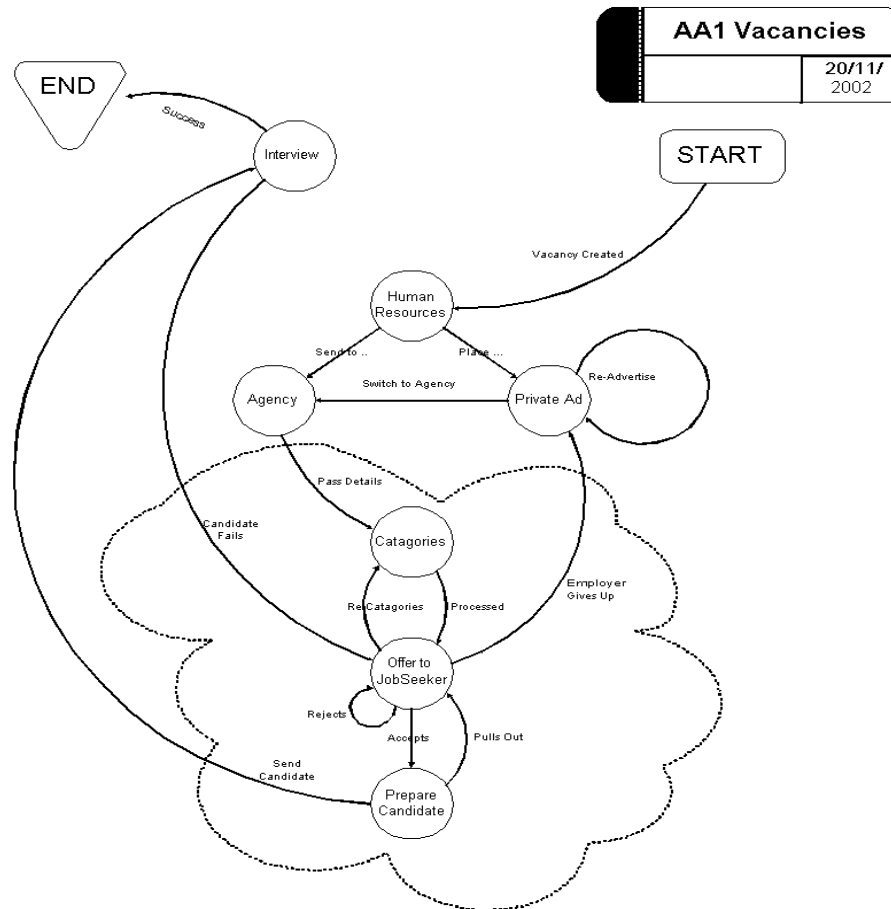
Targets

- Transparent inter-op with many HR systems.
- More independent candidates.
- High-end data analysis system.

Report on the Report

From Plato to Pragmatism

Originally we conceived of AA1 using the following model.



Our original conception was a finite state-machine! We had a platonic ideal of a job agency. Surely AA1 must behave like this? We would extract the formal process behind AA1. Entity-relation diagrams would be drawn, use-cases established, and platonically perfect processes exposed on paper.

When we met to plan the interviews, our group was showing two sides: a business orientation and a computer systems orientation. We should have seen this as attempting to research two different pieces of work. We didn't, we saw two sides of one story. At bandwidth of 2mins/question we believed we could extract both formal processes and human factors. We had not realised that the interviewees might have their **own agenda**.

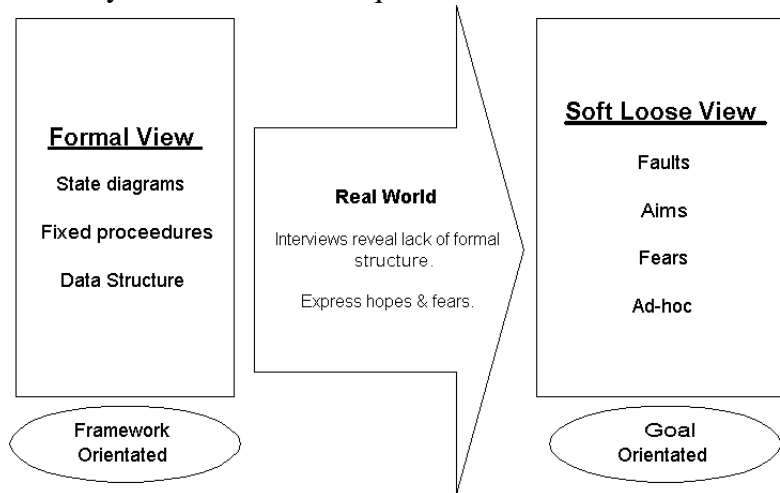
My first interview was the regional director. She was hoping to determine the company's future through our IS review, she just had a vague outline idea. Everyone seemed

uncertain. Most were worried, maybe slightly hopeful. We stopped using our interview plans.

We collected a mass of attitudes and goals. From these we picked out common threads, and used them to build up our group report.

Transformation

We moved from a very formal model to a quite loose one.



Recommendations

- Consultants are called if an organisation is confused about an issue. Confusion is therefore to be expected.
- It is premature to aim for a formal system unless one is requested.
- Information systems are a subset of wider organisational issues, and cannot be cleanly separated from them.

Usefulness of SSDM

At no point in this project did we create a full SSM process. I would hold that SSM requires a dialog with the owner, we only had a single meeting. Nevertheless the SSM vocabulary of models allowed us to express a rather vague situation in a concise way.

Despite modelling a firm rather than a specific problem, it was easy to apply and link descriptions. The current situation could be centred around the Rich Picture for example. Formal modelling was too strict to capture AA1's unstructured organisation.

The design philosophy of problem-solution-feasibility-action was relevant throughout my individual report. It is nearly common-sense and that is the best you can say about a methodology.

IB346 INFORMATION SYSTEMS GROUP ASSIGNMENT

Group Number: Seminar Group Thursday 3-4 (Group 1)

Group Members:

Name	ID Number	Year	Course
George Igboegwu	0013129	3 rd	Computer Science
Adam Hutchinson	0018712	3 rd	Computer Science
Rushi Luhar	0017566	3 rd	Computer Science
Thomas Barker	0103782	2 nd	Computer Science
Talia Kraines	0007519	2 nd	Computing with Business Studies
Andreas Carini	Unknown	Exchange Student	Sociology

Word Count: 2105

TABLE OF CONTENTS

INTRODUCTION	3
THE PROBLEM DOMAIN	3
• Current Situation	3
• Basic Processes	3
• Organisation and Communication	5
• The MATCH System	6
CRITICAL SUCCESS FACTOR FOR THE AA1 ORGANISATION	8
HARRY'S GENERAL CONTROL MODEL FOR THE AA1 ORGANISATION	9
INPUT OUTPUT TRANSFORMATION	11
• Possible conflicts between the objectives of an Individual to that of the Organisation.	11
DETAILED ROOT DEFINITION, CATWOE ANALYSIS AND CONCEPTUAL MODEL	12
• Detailed Root Definition	12
• CATWOE Analysis	12
• Conceptual Model for the Detailed Root Definition	13

INTRODUCTION

AA1 is a public service organisation providing job seeking candidates with permanent jobs or training for them. Government funding is conditional on a percentage of job seekers being placed within 6 months, but a new banded system is being planned. In 9 months AA1 will be privatised. After privatisation AA1 is aiming to grow rapidly by moving into new markets

THE PROBLEM DOMAIN

The problem domain has been broken down into the scenarios described below. Each scenario is accompanied by a rich picture diagram.

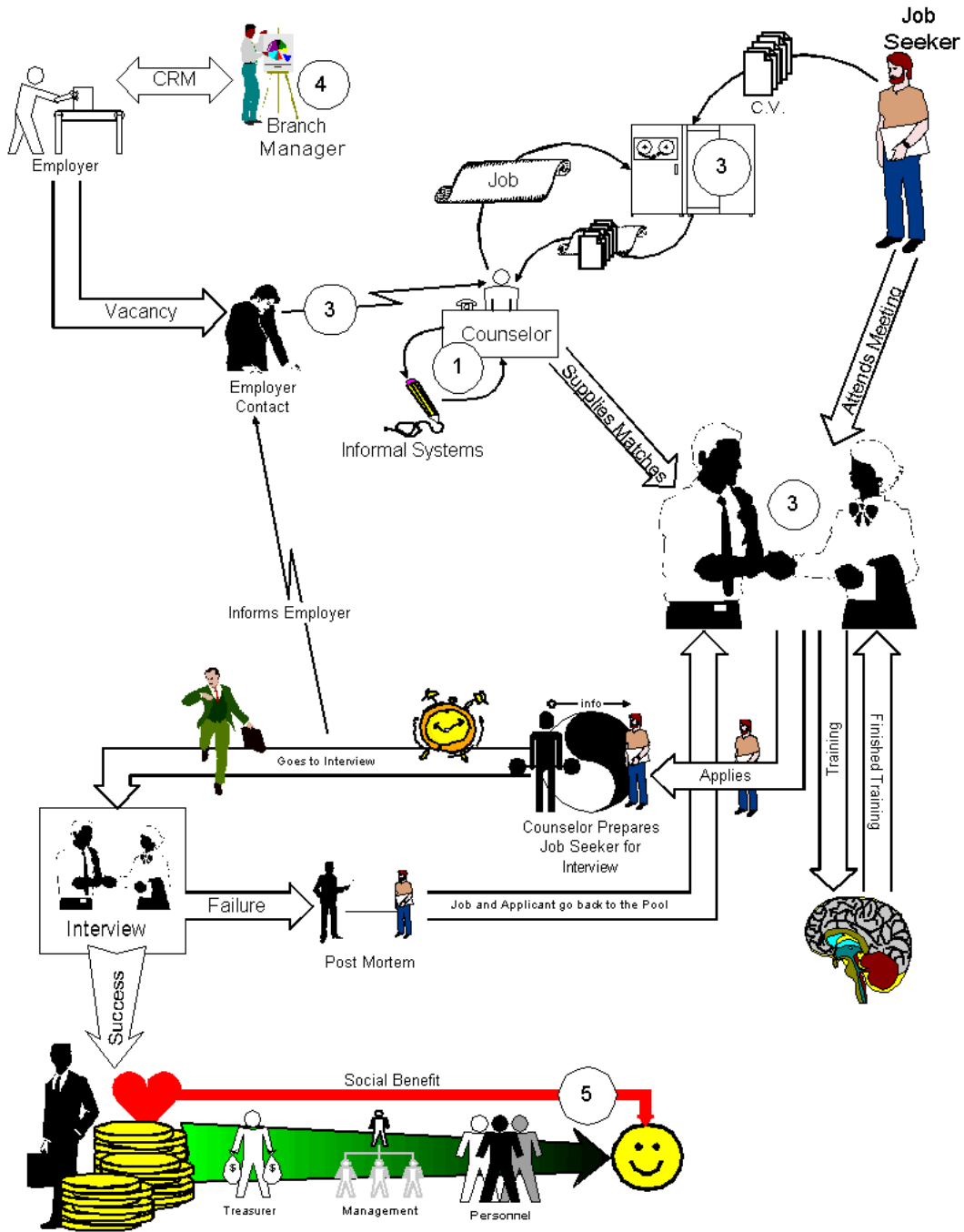
Current Situation

Assuming the reader is familiar with AA1's situation, we will only outline AA1's functioning and information systems, with specific references to current problem areas.

Basic Process

AA1 acts as an employment 'mill'. Vacancies and candidates come in to be ground into placements by counsellors. Everything is thrown together into a huge pile at each branch, to which a large undifferentiated group of counsellors apply themselves. Please refer to the rich picture diagram on the following page.

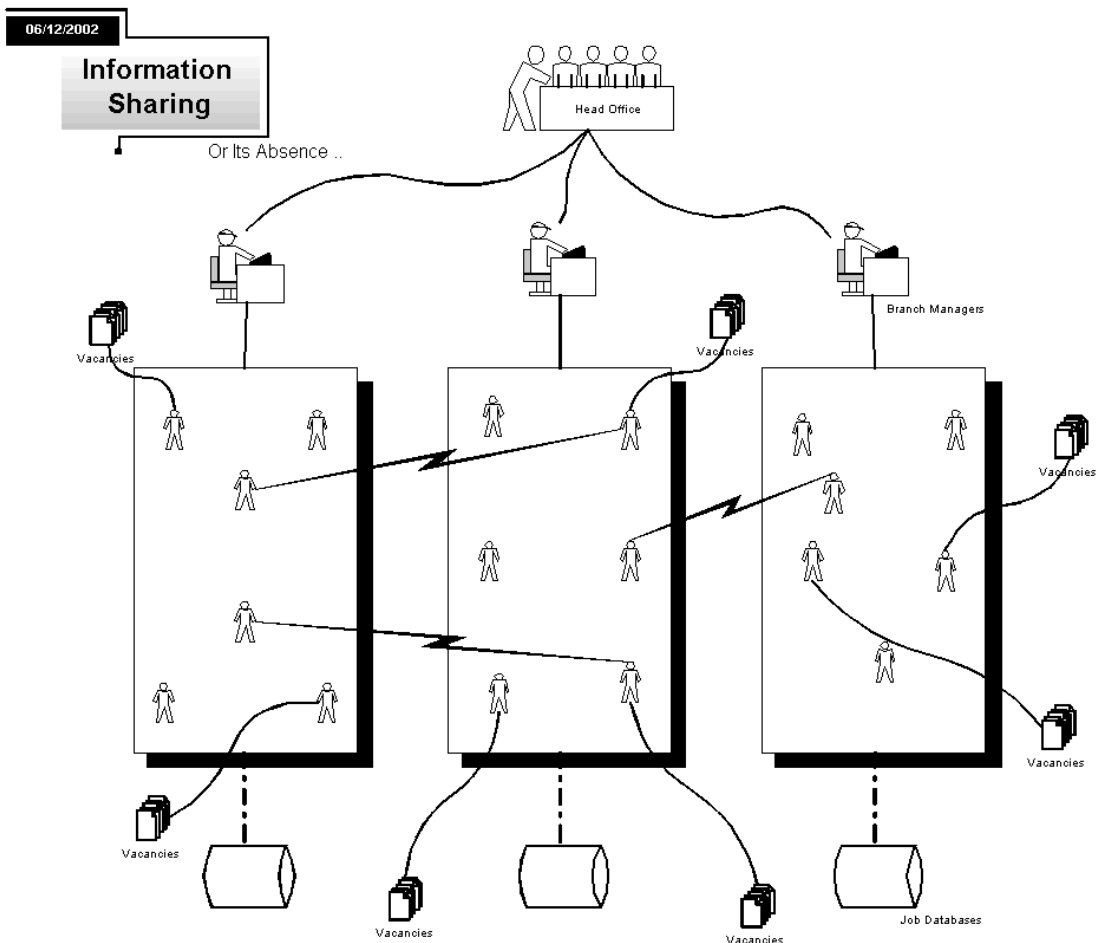
1. The entire job filling process is contained within the counsellors own workspace. Decision support is provided by the MATCH "database, often supplemented by personal paper-files.
2. The MATCH system is abysmal. Since this is the depository of AA1's business critical data, this could cripple future attempts to re-organise..
3. Candidates can only receive information by meeting counsellors. There is no provision for them to do their own research. Likewise, employers have to submit vacancy forms manually.
4. The branch managers currently fill the role of customer relations themselves. This keeps them away from the day-to-day running of the branch.
5. Social benefits of AA1's work do not contribute to the organisation's up-keep, but are still considered important to staff.



Organisation and Communication

AA1 is organised on an ad-hoc basis with little co-ordination.

- Counsellors are not specialised, they are expected to handle all types of jobs. Although many find themselves becoming customer contacts, this is not recognised in the system.
- Vacancy information enters the system at many different points, and is not shared between branches.
- Information is only passed between branches by personal conversations between counsellors. Other than monthly branch manager meetings, there is no formalised method of information sharing.
- MATCH system functions poorly and keeps separate data for each branch. The rich picture diagram below further illustrates this problem domain.



The MATCH System

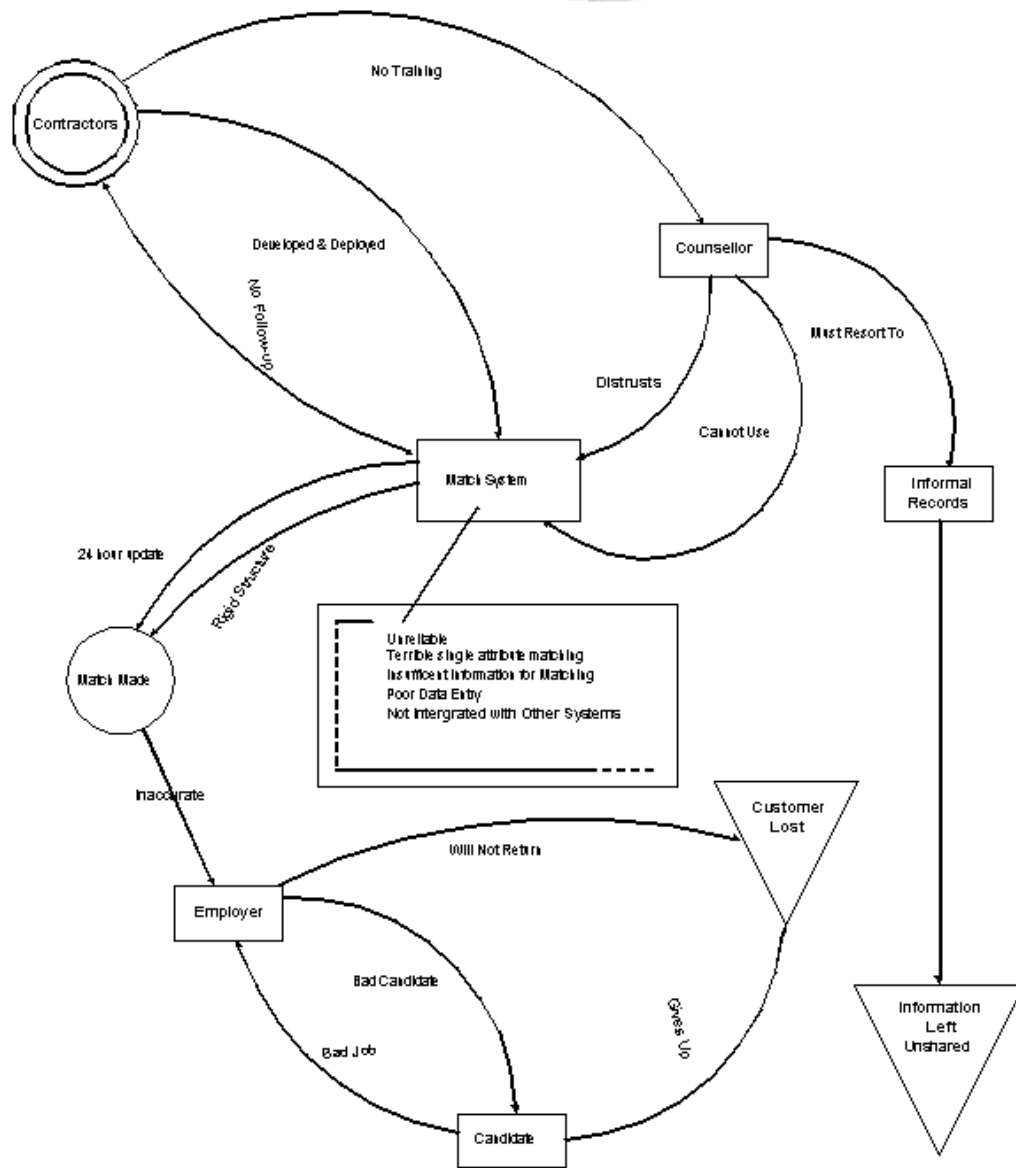
The MATCH system was installed several years ago. It is showing its age, and its very poor design. MATCH is not a database, it is a file-based batch system.

- It is updated only every 24 hours (as a batch process) and often not even that.
- Allows only for single attribute searches, so counsellors often prepare lists manually.
- Information is not detailed enough for counsellors to match skilled workers.
- “Soft” information is ignored by the system. If captured it is stored in personal paper files.
- Data is typed into the system at each branch, and is not shared between them.

There is no remote access for employers and candidates. The rich picture diagram on the following page explains this problem domain.

The MATCH System

What Went Sooo Horribly Wrong ?



AA1 must move forward and create a knowledge-based system which accurately models the key factors in job placement. Current informal data must be incorporated into this system.

CRITICAL SUCCESS FACTOR FOR THE AA1 ORGANISATION

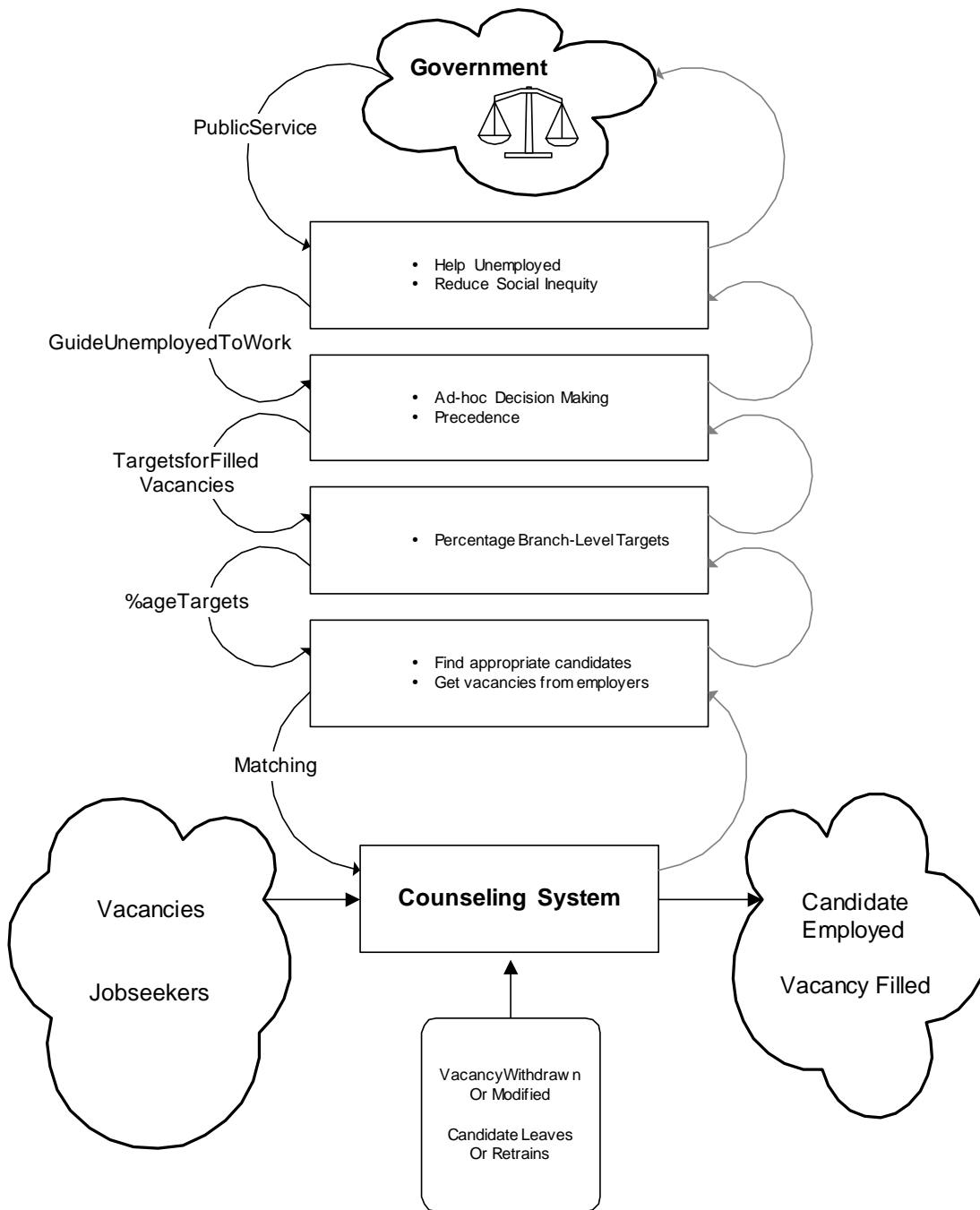
- Employers and job seekers matched together must be satisfied with the match. This is not just in terms of training, but if the two parties involved, for instance have personality differences, or if the job seeker is not accustomed to the particular work scenario, the match could be a failure. This is probably more significant in the case of temporary jobs where employee turnover is relatively high.
 - If the job seeker is unhappy with the match, chances are they wouldn't be coming back for seconds.
 - This could seriously damage the company (AA1)/client relationship.
- The necessary job training must be undertaken by job seekers, to give them the necessary skills needed to perform the jobs assigned to them. If the company doesn't have the necessary training services, information about high-quality training services could be recommended to job seekers.
 - If employers are unhappy with their employees' levels of skills, future AA1 recommendations would probably not be requested for by the employers.
 - AA1's could get a reputation for supplying under qualified staff.
- Information on employee's jobs need to be collected and kept up to date, especially in the case of temporary employees. This could include information such as job start and end dates, type of working environment, job satisfaction, employers satisfaction with the employees level of skills, etc.
 - By keeping up to date with the employees, AA1 could attract past employees back to the company when they're finished with their previous jobs.
 - Information about the suitability of the previous matches could help the counsellors make more informed judgements about future matches.
- There should be a better system for information sharing amongst branches. Counsellors should be able to gain information about job seekers assigned to other counsellors across branches
 - There is a chance that a possible, suitable employment opportunity might be available for a job seeker from another branch, but as long as the job seekers information is tied up somewhere else, this becomes a suitable match is not made.
 - This could also help increase matching targets.
- IT system needs to be updated. Currently the IT systems contain minimal information about job seekers, and counsellors talk about preferring to the older, manual, paper system to using the 'newer' IT systems to help their job matching.
 - This would make the counsellors more efficient, in the sense that searches could be sped up, and information could be retrieved a lot faster. For instance, a search such as, 'employees working in construction, with a job satisfaction rating of 8 or above out of 10' could be made quicker and more efficient with a good IT system.
 - The more information is readily available to the counsellors, to aid their job matching, the better the matches.

HARRY'S GENERAL CONTROL MODEL FOR THE AA1 ORGANISATION

This diagram shows the cascade from the original public service goal of the Government – “to employ the unemployed”, with regard to AA1, down to the basic goals supported within the company. The company operates mainly as individual branch entities within the larger organisation, and the majority of goals are set within branches. Strategic planning is however, at a central level, yet the regional director stated that she would prefer that, this too, be brought to a more local level.

The system that AA1 has put in place at this current time is intended to derive the greatest social benefit for jobseekers, from an income determined by Government grants. As AA1 moves towards self-sufficiency, this model will become less relevant as not only will the system owner change, but the funding mechanism too.

Branch level placement targets are the primary goals that branches attempt to meet. Such isolated targets do not convey the long-term needs of AA1 to the individual branches, such as signing up new employers or finding candidates with certain skills. It also makes it hard to look at the company as a whole, and to support roles such as customer relations. There is no clear path for branch level targets to be passed down to individual counsellors, although a commission-based system has been suggested.



INPUT OUTPUT TRANSFORMATION

Transformation 1.

The following input-output transformation models one aspect of the general organisational objective, deploying an improved IT system.

INPUT

Untrained counsellors

OUTPUT

Trained counsellors

Success - users are sufficiently familiar and at ease with the new system in a way that interaction with the system fulfils the users' requirements.

This transformation is significant because one of the failings of the existing system is that the counsellors are untrained in its use.

Transformation 2.

The following input-output transformation models an individual objective, that of Counsellor Harry Leavitt to successfully match the skills, attitude and personality of a candidate to that specified in a vacancy submitted by a company which, if successful would result in the candidate being hired. The Counsellor specified the use of informal methods and means to complete this transformation.

INPUT

Job Candidate

OUTPUT

Successful Employee

Other possible ways of modelling this scenario by means of transformations.

INPUT

Vacancy submitted
by a company.

OUTPUT

Successful Employee

Success- Candidate's skills, attitude and personality are matched to that required by the organisation leading to the hiring of the candidate by the organisation.

This transformation is significant because if successful, it results in having two satisfied customers. The candidate and the organisation. It would raise the profile of the organisation in the eyes of these customers and would increase the possibility of them returning to the AA1 for further business. This would be especially important in terms of having a large organisation as a customer.

Possible conflicts between the objectives of an Individual to that of the Organisation.

In terms of job matching the two counsellors Harry Leavitt and Alex have different objectives which appear to conflict.

Harry's objective is to find the best match between job seeker and employer. His approach is personal and geared towards helping both parties. He feels that knowing each job seeker and employer at a deeper level than that provided by the current IT system is vital to finding the ideal match. His mission statement is probably similar to the present organisation's which is to assist and

support those seeking employment. He sees the organisation as the means by which he can help the job seeker.

Alex's objective seems to be personal career advancement. He wants to perform well within his role - he sees this as achieving the highest number of matches possible. He sees helping the job seeker as the means by which he can progress in the organisation as head administrator.

Currently these two paradigms coexist. After privatisation, however, the situation may become untenable due to economic pressures. If the objectives do conflict, changes will be inevitable. After privatisation, possibly the objectives of counsellor Leavitt might be in conflict with the objectives of the organisation. In order to increase market share and maximise the revenue from commission through job placements. In that scenario, counsellor Alex's method of working which involves placing a maximum number of job-seekers and hence increasing personal wealth and the wealth of the company. Due to such a method, it may be the case that not every candidate would be matched with a company that is suitable with his/her attributes. However, as mentioned earlier, because of the change in the environment of the company, objectives will conflict, and change is inevitable.

DETAILED ROOT DEFINITION, CATWOE ANALYSIS AND CONCEPTUAL MODEL

In this section, a Detailed Root Definition, CATWOE analysis and Conceptual Model are shown here for Transformation 2 above.


Detailed Root Definition:

A successful matching system where a job-seeker, given his skills, personality and attitude, can be matched to the requirements of firm(s) resulting in the generation of a list of possible vacancies that the job-seeker might apply for. This would involve the sending of the resume of the job-seeker to the relevant firm. If this procedure is successful and the qualities of the job-seeker match those required by the firm, the job-seeker would become an employee of the firm.

CATWOE analysis

C Job-seekers, firms/companies with employee vacancies.

A Counsellor Harry Leavitt employed by the AA1 organisation.

T Candidate  Employee

W It is necessary to match a job-seeker's skills and attitude to the requirements of the company/firm. If this is not done, it may result in the employment of an unsuitable candidate by the firm or may result in the job-seeker remaining unemployed despite having the relevant skills. Since both the job-seeker and the firm are customers of the AA1 organisation, this job matching procedure must be done to maximise success.

- O** The AA1 organisation. The organisation has the power to stop any job matching procedure or modify it.
- E** Skills of the counselling staff, time restraints, amount of information available on the job-seekers and information on the firm that has advertised the vacancy

Please Refer to the following page for the conceptual model.

Conceptual Model for the Detailed Root Definition.

