

6. RESULTS OF SENSITIVITY ANALYSIS

This section will present the results of the sensitivity analyses performed on the results of the evaluation of Project EASI/ED functions. The factors that appear to have the most impact on the evaluation results are the weightings assigned to the evaluation criteria. The sensitivity analyses explore the results revising the ratings assigned to each of the five criteria. The cost factors that could impact the evaluation result do not influence the outcome significantly since NPV cost savings carries a weighting among the five criteria of only 7 percent.

The weightings assigned to the five evaluation criteria are:

- Providing a comprehensive information resource (Information Resource) - 30 percent
- Providing an enhanced customer service mechanism (Customer Service) - 12 percent
- Streamlining and simplifying student financial aid delivery processes (Student Financial Aid Delivery) - 34 percent
- Improving program management and integrity (Program Management and Integrity) - 17 percent
- Reducing costs to manage and deliver financial aid (NPV Cost Savings) - 7 percent

The results of evaluating the Project EASI/ED functions using the above weightings were presented in Section 5 and are repeated in Figure 6-1.

Function Number	Target Areas and Functions	30%	12%	34%	17%	7%	Weighted Score
		Information Resource	Customer Service	Student Financial Aid Delivery	Program Management and Integrity	NPV Cost Savings	
1	Interactive Student and Aid Organization Accounts	1.50	0.60	1.02	0.51	0.21	3.84
14	Enrollment Tracking and Reporting	1.50	0.60	1.02	0.51	0.21	3.84
21	Program Data and Performance Information Management	1.50	0.36	1.02	0.51	0.21	3.60
22	Integrated Accounting Management	1.50	0.36	1.02	0.51	0.21	3.60
19	School Eligibility and Data Maintenance	0.90	0.36	1.02	0.85	0.35	3.48
2	Interactive Application Processing and Renewal	0.90	0.60	1.02	0.51	0.35	3.38
17	Repayment Maintenance	0.90	0.60	1.02	0.51	0.35	3.38
20	Guarantor and Lender Information Maintenance	0.90	0.36	1.02	0.85	0.07	3.20
5	Common Aid Origination	0.90	0.36	1.02	0.51	0.35	3.14
9	Disseminate School Disbursement Information	0.90	0.36	1.02	0.51	0.21	3.00
13	Consolidation Processing	0.90	0.36	1.02	0.51	0.21	3.00
18	Defaulted Debt Collection	0.90	0.36	1.02	0.51	0.21	3.00
16	Customer Service Management	0.90	0.60	1.02	0.17	0.21	2.90
8	Invoice and Schedule Disbursement Authorization	0.90	0.36	1.02	0.51	0.07	2.86
12	State Authorization Management	0.90	0.36	1.02	0.51	0.07	2.86
6	Interactive Participant Disbursement Authorization	0.30	0.36	1.02	0.51	0.07	2.26
11	Fund Source Disbursement	0.30	0.36	1.02	0.51	0.07	2.26
3	Pre-Enrollment Financial Aid Simulation Modeling	0.90	0.60	0.34	0.17	0.07	2.08
15	Repayment Option Modeling and Selection/Repayment Counseling	0.90	0.60	0.34	0.17	0.07	2.08
7	Draw Down School Disbursement Authorization	0.30	0.12	1.02	0.17	0.35	1.96
10	Perform Draw Down Reconciliation	0.90	0.12	0.34	0.17	0.21	1.74
4	Multi-Year Promissory Note Processing	0.30	0.12	1.02	0.17	0.07	1.68

Figure 6 - 1, Result of Project EASI/ED Function Evaluation

For the sensitivity analyses presented in this section, these criteria weightings are varied. Subsection 6.1 presents the results of weighting all evaluation criteria equally. Subsection 6.2 presents the results of reversing the weighting the evaluation criteria. Subsection 6.3 presents the results of making NPV cost savings the highest weighted criterion. Subsection 6.4 presents the results of making customer service the highest weighted criterion.

6.1 Sensitivity Analysis 1

In this sensitivity analysis it is assumed that all five evaluation criteria have an equal ranking, each criterion contributing 20 percent to the total. The results of the analysis are shown in Figure 6-2.

Sensitivity Analysis 1: 20% 20% 20% 20% 20%							
Function Number	Project EASI/ED Functions	Information Resource	Customer Service	Student Financial Aid Delivery	Program Management and Integrity	NPV Cost Savings	Weighted Score
2	Interactive Application Processing and Renewal	0.60	1.00	0.60	0.60	1.00	3.80
17	Repayment Maintenance	0.60	1.00	0.60	0.60	1.00	3.80
19	School Eligibility and Data Maintenance	0.60	0.60	0.60	1.00	1.00	3.80
1	Interactive Student and Aid Organization Accounts	1.00	1.00	0.60	0.60	0.60	3.80
14	Enrollment Tracking and Reporting	1.00	1.00	0.60	0.60	0.60	3.80
5	Common Aid Origination	0.60	0.60	0.60	0.60	1.00	3.40
21	Program Data and Performance Information Management	1.00	0.60	0.60	0.60	0.60	3.40
22	Integrated Accounting Management	1.00	0.60	0.60	0.60	0.60	3.40
9	Disseminate School Disbursement Information	0.60	0.60	0.60	0.60	0.60	3.00
13	Consolidation Processing	0.60	0.60	0.60	0.60	0.60	3.00
16	Customer Service Management	0.60	1.00	0.60	0.20	0.60	3.00
18	Defaulted Debt Collection	0.60	0.60	0.60	0.60	0.60	3.00
20	Guarantor and Lender Information Maintenance	0.60	0.60	0.60	1.00	0.20	3.00
8	Invoice and Schedule Disbursement Authorization	0.60	0.60	0.60	0.60	0.20	2.60
12	State Authorization Management	0.60	0.60	0.60	0.60	0.20	2.60
7	Draw Down School Disbursement Authorization	0.20	0.20	0.60	0.20	1.00	2.20
3	Pre-Enrollment Financial Aid Simulation Modeling	0.60	1.00	0.20	0.20	0.20	2.20
6	Interactive Participant Disbursement Authorization	0.20	0.60	0.60	0.60	0.20	2.20
11	Fund Source Disbursement	0.20	0.60	0.60	0.60	0.20	2.20
15	Repayment Option Modeling and Selection/Repayment Counseling	0.60	1.00	0.20	0.20	0.20	2.20
10	Perform Draw Down Reconciliation	0.60	0.20	0.20	0.20	0.60	1.80
4	Multi-Year Promissory Note Processing	0.20	0.20	0.60	0.20	0.20	1.40

Figure 6 - 2, Results of Sensitivity Analysis 1

Note that the function's weighted scores change from the original scores shown in Figure 6-1 and that the result is a five way tie between Interactive Application Processing, Repayment Maintenance, School Eligibility and Data Maintenance, Interactive Student and Aid Organization Accounts, and Enrollment Tracking and Reporting.

This reflects the fact that these functions evaluate well in all criteria, and do not rely on a high score in any one evaluation criterion in order to achieve a good weighted score.

6.2 Sensitivity Analysis 2

This sensitivity analysis completely reverses the ranking of the evaluation criteria. That is, where student financial aid delivery was considered the most important criterion, it now becomes the least important. Where NPV cost savings was the least important criterion, it now becomes the most important. Customer service becomes the second most important criterion. The results of the analysis are shown in Figure 6-3.

Sensitivity Analysis 2: 12% 30% 7% 17% 34%							
Function Number	Project EASI/ED Functions	Information Resource	Customer Service	Student Financial Aid Delivery	Program Management and Integrity	NPV Cost Savings	Weighted Score
2	Interactive Application Processing and Renewal	0.36	1.50	0.21	0.51	1.70	4.28
17	Repayment Maintenance	0.36	1.50	0.21	0.51	1.70	4.28
19	School Eligibility and Data Maintenance	0.36	0.90	0.21	0.85	1.70	4.02
1	Interactive Student and Aid Organization Accounts	0.60	1.50	0.21	0.51	1.02	3.84
14	Enrollment Tracking and Reporting	0.60	1.50	0.21	0.51	1.02	3.84
5	Common Aid Origination	0.36	0.90	0.21	0.51	1.70	3.68
16	Customer Service Management	0.36	1.50	0.21	0.17	1.02	3.26
21	Program Data and Performance Information Management	0.60	0.90	0.21	0.51	1.02	3.24
22	Integrated Accounting Management	0.60	0.90	0.21	0.51	1.02	3.24
9	Disseminate School Disbursement Information	0.36	0.90	0.21	0.51	1.02	3.00
13	Consolidation Processing	0.36	0.90	0.21	0.51	1.02	3.00
18	Defaulted Debt Collection	0.36	0.90	0.21	0.51	1.02	3.00
20	Guarantor and Lender Information Maintenance	0.36	0.90	0.21	0.85	0.34	2.66
7	Draw Down School Disbursement Authorization	0.12	0.30	0.21	0.17	1.70	2.50
3	Pre-Enrollment Financial Aid Simulation Modeling	0.36	1.50	0.07	0.17	0.34	2.44
15	Repayment Option Modeling and Selection/Repayment Counseling	0.36	1.50	0.07	0.17	0.34	2.44
8	Invoice and Schedule Disbursement Authorization	0.36	0.90	0.21	0.51	0.34	2.32
12	State Authorization Management	0.36	0.90	0.21	0.51	0.34	2.32
6	Interactive Participant Disbursement Authorization	0.12	0.90	0.21	0.51	0.34	2.08
11	Fund Source Disbursement	0.12	0.90	0.21	0.51	0.34	2.08
10	Perform Draw Down Reconciliation	0.36	0.30	0.07	0.17	1.02	1.92
4	Multi-Year Promissory Note Processing	0.12	0.30	0.21	0.17	0.34	1.14

Figure 6 - 3, Results of Sensitivity Analysis 2

Interactive Application Processing retains the leading position because it contributes substantial NPV cost saving. Repayment Maintenance also fares well due to its high evaluation in customer service and in NPV cost savings.

The next three functions in weighted score order are School Eligibility and Data Maintenance, Interactive Student and Aid Organization Accounts, and Enrollment Tracking and Reporting, all of which evaluate well in the NPV cost saving and customer services criteria.

6.3 Sensitivity Analysis 3

This sensitivity analysis gives the cost savings evaluation criterion the highest weight - 50 percent of the overall score. The weights of the other criteria are reduced proportionately. The results of the analysis are shown in Figure 6-4.

Sensitivity Analysis 3: 16% 7% 18% 9% 50%							
Function Number	Project EASI/ED Functions	Information Resource	Customer Service	Student Financial Aid Delivery	Program Management and Integrity	NPV Cost Savings	Weighted Score
19	School Eligibility and Data Maintenance	0.48	0.21	0.54	0.45	2.50	4.18
2	Interactive Application Processing and Renewal	0.48	0.35	0.54	0.27	2.50	4.14
17	Repayment Maintenance	0.48	0.35	0.54	0.27	2.50	4.14
5	Common Aid Origination	0.48	0.21	0.54	0.27	2.50	4.00
1	Interactive Student and Aid Organization Accounts	0.80	0.35	0.54	0.27	1.50	3.46
14	Enrollment Tracking and Reporting	0.80	0.35	0.54	0.27	1.50	3.46
7	Draw Down School Disbursement Authorization	0.16	0.07	0.54	0.09	2.50	3.36
21	Program Data and Performance Information Management	0.80	0.21	0.54	0.27	1.50	3.32
22	Integrated Accounting Management	0.80	0.21	0.54	0.27	1.50	3.32
9	Disseminate School Disbursement Information	0.48	0.21	0.54	0.27	1.50	3.00
13	Consolidation Processing	0.48	0.21	0.54	0.27	1.50	3.00
18	Defaulted Debt Collection	0.48	0.21	0.54	0.27	1.50	3.00
16	Customer Service Management	0.48	0.35	0.54	0.09	1.50	2.96
10	Perform Draw Down Reconciliation	0.48	0.07	0.18	0.09	1.50	2.32
20	Guarantor and Lender Information Maintenance	0.48	0.21	0.54	0.45	0.50	2.18
8	Invoice and Schedule Disbursement Authorization	0.48	0.21	0.54	0.27	0.50	2.00
12	State Authorization Management	0.48	0.21	0.54	0.27	0.50	2.00
6	Interactive Participant Disbursement Authorization	0.16	0.21	0.54	0.27	0.50	1.68
11	Fund Source Disbursement	0.16	0.21	0.54	0.27	0.50	1.68
3	Pre-Enrollment Financial Aid Simulation Modeling	0.48	0.35	0.18	0.09	0.50	1.60
15	Repayment Option Modeling and Selection/Repayment Counseling	0.48	0.35	0.18	0.09	0.50	1.60
4	Multi-Year Promissory Note Processing	0.16	0.07	0.54	0.09	0.50	1.36

Figure 6 - 4, Results of Sensitivity Analysis 3

Here, School Eligibility and Data Maintenance, with a score of 5 in NPV cost savings, ranks highest due to its estimated cost savings and its quantitative benefits (as presented in Section 5). The next highest

scoring functions are Interactive Application and Processing and Renewal, and Repayment Maintenance, due to their score of 5 in NPV cost savings.

6.4 Sensitivity Analysis 4

This sensitivity analysis gives the customer service evaluation criterion a higher weight - 50 percent of the overall score. The weights of the other criteria are reduced proportionately. The results of the analysis are shown in Figure 6-5.

Sensitivity Analysis 4: 17% 50% 19% 10% 4%							
Function Number	Project EASI/ED Subject Areas and Functions	Information Resource	Customer Service	Student Financial Aid Delivery	Program Management and Integrity	NPV Cost Savings	Weighted Score
1	Interactive Student and Aid Organization Accounts	0.85	2.50	0.57	0.30	0.12	4.34
14	Enrollment Tracking and Reporting	0.85	2.50	0.57	0.30	0.12	4.34
2	Interactive Application Processing and Renewal	0.51	2.50	0.57	0.30	0.20	4.08
17	Repayment Maintenance	0.51	2.50	0.57	0.30	0.20	4.08
16	Customer Service Management	0.51	2.50	0.57	0.10	0.12	3.80
21	Program Data and Performance Information Management	0.85	1.50	0.57	0.30	0.12	3.34
22	Integrated Accounting Management	0.85	1.50	0.57	0.30	0.12	3.34
3	Pre-Enrollment Financial Aid Simulation Modeling	0.51	2.50	0.19	0.10	0.04	3.34
15	Repayment Option Modeling and Selection/Repayment Counseling	0.51	2.50	0.19	0.10	0.04	3.34
19	School Eligibility and Data Maintenance	0.51	1.50	0.57	0.50	0.20	3.28
20	Guarantor and Lender Information Maintenance	0.51	1.50	0.57	0.50	0.04	3.12
5	Common Aid Origination	0.51	1.50	0.57	0.30	0.20	3.08
9	Disseminate School Disbursement Information	0.51	1.50	0.57	0.30	0.12	3.00
13	Consolidation Processing	0.51	1.50	0.57	0.30	0.12	3.00
18	Defaulted Debt Collection	0.51	1.50	0.57	0.30	0.12	3.00
8	Invoice and Schedule Disbursement Authorization	0.51	1.50	0.57	0.30	0.04	2.92
12	State Authorization Management	0.51	1.50	0.57	0.30	0.04	2.92
6	Interactive Participant Disbursement Authorization	0.17	1.50	0.57	0.30	0.04	2.58
11	Fund Source Disbursement	0.17	1.50	0.57	0.30	0.04	2.58
7	Draw Down School Disbursement Authorization	0.17	0.50	0.57	0.10	0.20	1.54
10	Perform Draw Down Reconciliation	0.51	0.50	0.19	0.10	0.12	1.42
4	Multi-Year Promissory Note Processing	0.17	0.50	0.57	0.10	0.04	1.38

Figure 6 - 5, Results of Sensitivity Analysis 4

Note that functions important to the student are ranked highest: Interactive Student and Aid Organization Accounts (Information Sharing), Enrollment Tracking and Reporting, Interactive Application Processing and Renewal, Customer Service Management, and Repayment Maintenance.

These are all activities that the student participates in directly and Project EASI/ED better accommodates students' needs in all of these areas.

6.5 Summary Charts

Figure 6-6 below shows the comparison of weighted scores between the original recommendation and the four sensitivity scenarios. Note that there are several functions that evaluate well on all combinations of criteria weightings:

1. Enrollment Tracking and Reporting
2. Interactive Student and Aid Organization Accounts
3. Repayment Maintenance
4. Program Data and Performance Information Management
5. Interactive Application Processing and Renewal
6. School Eligibility and Data Maintenance

Function Number	Project EASI/ED Subject Areas and Functions	Weighted Score	Sensitivity Analysis 1 Weighted Score	Sensitivity Analysis 2 Weighted Score	Sensitivity Analysis 3 Weighted Score	Sensitivity Analysis 4 Weighted Score
1	Interactive Student and Aid Organization Accounts	3.84	3.80	3.84	3.46	4.34
2	Interactive Application Processing and Renewal	3.38	3.80	4.28	4.14	4.08
3	Pre-Enrollment Financial Aid Simulation Modeling	2.08	2.20	2.44	1.60	3.34
4	Multi-Year Promissory Note Processing	1.68	1.40	1.14	1.36	1.38
5	Common Aid Origination	3.14	3.40	3.68	4.00	3.08
6	Interactive Participant Disbursement Authorization	2.26	2.20	2.08	1.68	2.58
7	Draw Down School Disbursement Authorization	1.96	2.20	2.50	3.36	1.54
8	Invoice and Schedule Disbursement Authorization	2.86	2.60	2.32	2.00	2.92
9	Disseminate School Disbursement Information	3.00	3.00	3.00	3.00	3.00
10	Perform Draw Down Reconciliation	1.74	1.80	1.92	2.32	1.42
11	Fund Source Disbursement	2.26	2.20	2.08	1.68	2.58
12	State Authorization Management	2.86	2.60	2.32	2.00	2.92
13	Consolidation Processing	3.00	3.00	3.00	3.00	3.00
14	Enrollment Tracking and Reporting	3.84	3.80	3.84	3.46	4.34
15	Repayment Option Modeling and Selection/Repayment Counseling	2.08	2.20	2.44	1.60	3.34
16	Customer Service Management	2.90	3.00	3.26	2.96	3.80
17	Repayment Maintenance	3.38	3.80	4.28	4.14	4.08
18	Defaulted Debt Collection	3.00	3.00	3.00	3.00	3.00
19	School Eligibility and Data Maintenance	3.48	3.80	4.02	4.18	3.28
20	Guarantor and Lender Information Maintenance	3.20	3.00	2.66	2.18	3.12
21	Program Data and Performance Information Management	3.60	3.40	3.24	3.32	3.34
22	Integrated Accounting Management	3.60	3.40	3.24	3.32	3.34

Figure 6 - 6, Comparison of Weighted Scores

Figure 6-7 shows the same information with the weighted scores translated into relative rankings for each of the twenty-two functions.

Function Number	Project EASI/ED Subject Areas and Functions	Ranking	Sensitivity Analysis 1 Ranking	Sensitivity Analysis 2 Ranking	Sensitivity Analysis 3 Ranking	Sensitivity Analysis 4 Ranking
1	Interactive Student and Aid Organization Accounts	1	4	4	5	1
2	Interactive Application Processing and Renewal	6	1	1	2	3
3	Pre-Enrollment Financial Aid Simulation Modeling	18	17	15	20	8
4	Multi-Year Promissory Note Processing	22	22	22	22	22
5	Common Aid Origination	9	6	6	4	12
6	Interactive Participant Disbursement Authorization	16	18	19	18	18
7	Draw Down School Disbursement Authorization	20	16	14	7	20
8	Invoice and Schedule Disbursement Authorization	14	14	17	16	16
9	Disseminate School Disbursement Information	10	9	10	10	13
10	Perform Draw Down Reconciliation	21	21	21	14	21
11	Fund Source Disbursement	17	19	20	19	19
12	State Authorization Management	15	15	18	17	17
13	Consolidation Processing	11	10	11	11	14
14	Enrollment Tracking and Reporting	2	5	5	6	2
15	Repayment Option Modeling and Selection/Repayment Counseling	19	20	16	21	9
16	Customer Service Management	13	11	7	13	5
17	Repayment Maintenance	7	2	2	3	4
18	Defaulted Debt Collection	12	12	12	12	15
19	School Eligibility and Data Maintenance	5	3	3	1	10
20	Guarantor and Lender Information Maintenance	8	13	13	15	11
21	Program Data and Performance Information Management	3	7	8	8	6
22	Integrated Accounting Management	4	8	9	9	7

Figure 6 - 7, Relative Rankings of Project EASI/ED Functions

These sensitivity analyses show that while changing the relative weights of each evaluation criterion has a substantial effect on the weighted scores for the Project EASI/ED functions, the same set of functions evaluate well for all the scenarios chosen.