

White Paper



Meeting the Federal Net Price Calculator Mandate

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About Student Aid Services, Inc.

Student Aid Services is the leading provider of net price calculator technologies and services to college enrollment and financial aid offices. The company is the exclusive provider of the *ThinkAhead™ Net Price Calculator* to more than 400 campuses nationwide and is widely recognized as having the most accurate, flexible and sophisticated technology in the market. The company also operates the StudentAid.com Web service, which provides the innovative *College Cost & Planning Report™* to prospective students. This unique report educates individuals on the cost of college and their eligibility for student aid; it also provides information on how to make the best college choice. For large corporations, the company offers *TuitionHelp™*, a range of services that assists such entities in providing employees with cost-effective tuition reimbursement programs, student aid assistance services and individualized college planning consultations.

For more information on the *ThinkAhead Net Price Calculator*, see www.StudentAidServices.com or contact us to order a copy of *Choosing a Net Price Calculator: Information, Considerations and Comparisons*, a booklet that summarizes our technology, our corporate ownership and the services we provide related to higher education.



TABLE OF CONTENTS

Introduction	4
Executive Summary	6
HEOA 2008 NPC Requirements	9
The Federal Template Calculator	10
User Experience	10
How It Works	11
Is the Federal Template Calculator Reasonably Accurate?	13
Federal Template Calculator Disadvantages and Limitations	13
Comparing the Federal Template Calculator and FM/FAFSA EFCs	15
Independent Students: \$0 EFC Incorrectly Given to 6 Out of 10 Students	16
Assets Not Included	18
Merit Aid Omitted	18
Are Multiple Templates a Solution?	21
Institutions Have a Choice	22
Ownership of NPC User Data	25
Analysis of a Stand-Alone EFC Estimator to Supplement an NPC	27
Key Questions to Consider When Issuing an RFP for or Selecting an Alternative NPC	28
Resources Required to Implement an NPC	30
A State-Sponsored, Multi-Institution NPC?	31
Conclusion: Consider What Is Important to Your Institution	32
About the Authors	34

We have prepared an addendum to this paper that includes more technical information about how the federal template calculator functions, how it estimates EFC and some tips for its implementation. Also included is a section that discusses net price reporting on the College Navigator Web site and the multi-year tuition calculator. To receive the addendum, please contact our business development team at 866-943-5254.

This document is a comprehensive overview of the issues that almost 7,000 institutions of higher education face regarding the implementation of a net price calculator.

Introduction

By October 29, 2011, all postsecondary institutions that receive federal student aid funds and enroll first-time, full-time undergraduate students must post a net price calculator (NPC) on their Web sites. To meet this federal requirement of the Higher Education Opportunity Act (HEOA), institutions may choose to install a product developed by the U.S. Department of Education, to build a net price calculator internally or to partner with an NPC service provider.

Among college administrators, views about the net price calculator mandate vary. Some college administrators are enthusiastic about finding more effective ways to communicate their institution's value, while others reluctantly accept that "another unfunded mandate" must be accommodated. On many campuses, both views are being expressed. A common concern centers around the time, effort and funding needed to meet the fall 2011 deadline. Despite the concerns of some, many colleges and universities believe that net price estimates will demonstrate their institution's affordability to prospective students, and they are moving forward with implementing highly accurate and customized net price calculators.

This white paper provides postsecondary decision makers, including financial aid and admissions officers, with the following information:

- An overview of the federal requirement
- Options for meeting the mandate
- Issues and choices related to implementing a net price calculator

Student Aid Services, Inc. has thoroughly studied and researched the regulations and options related to the selection and implementation of net price calculators. We provide net price calculators to postsecondary institutions, and we believe that our technology most thoroughly meets the federal requirement and the specific needs of both prospective students and institutions. Nevertheless, we acknowledge that the "build your own" option or the federal template calculator may be a practical choice for some institutions, and other options may be considered as well.

This paper discusses:

- The net price calculator regulation and minimum data requirements
- How users experience the federal template calculator
- How the federal template calculator determines aid and net price estimates
- Limitations of the federal template calculator
- Analysis of how the federal template calculator determines expected family contribution
- Reasons for using an alternative net price calculator
- The question of who owns the data collected by a net price calculator and who has access other than the institution to use that data for marketing and/or lead generation
- Suggested Request for Proposal (RFP) questions to assist institutions in choosing a net price calculator
- Resources required to create an alternative net price calculator
- Issues surrounding state-sponsored, multi-institution net price calculators

We also provide a technical supplement (available on request) that details how the federal template calculator estimates expected family contribution (EFC) and explains how to implement the federal template calculator. To request this information, contact our business development team at 866-943-5254.

Executive Summary

In August of 2008, President Bush signed the federal reauthorization bill for postsecondary education. Titled the Higher Education Opportunity Act, the bill created a regulation that requires virtually all postsecondary institutions to disclose the difference between the “sticker price” and the actual net price a student might pay to attend. This provision was designed to increase awareness of the actual cost of college attendance, but as a new mandate on almost all institutions of higher education, it created a question for college administrators: How will the value and affordability that we demonstrate to prospective students and their families on a calculator compare to our peer institutions?

Years before the federal mandate became law, numerous institutions began offering financial aid estimators. For example, a few years ago, Bradley University—a private Illinois institution with 5,000 undergraduate students—moved from forecasting a small number of net price estimates on paper to offering thousands of such estimates online. David Pardieck, Bradley’s director of financial assistance and associate director of enrollment management, said: “In order to best serve our student population, we are dedicated to providing a fully transparent financial process. Our advanced NPC makes our university distinctive in the marketplace. We believe in the value of a Bradley University education and stand behind our actual cost of attendance.”ⁱ

A number of other institutions also posted financial aid estimators before the HEOA was signed, including Amherst College, Arcadia University, Lake Erie College, the Massachusetts Institute of Technology, Princeton University, St. Xavier University, Trinity College, the University of New Haven, Williams College, and Yale University. These institutions decided before the mandate that estimators could be a way to differentiate themselves and to communicate their message of affordability.

After Congress mandated that schools post an NPC, the U.S. Department of Education assembled a Technical Review Panel (TRP). The TRP was assigned the difficult task of developing recommendations to guide the design of a single calculator that could be used by a wide variety of institutions, from small career schools to major research universities.

The U.S. Department of Education’s NPC meets HEOA requirements, asks few questions for fast and easy use, and requires no licensing fee.

The federal template calculator’s brevity is an advantage, but the inaccuracy that comes with that brevity is its biggest drawback. To determine dependency status, approximate EFC and cost of

attendance (COA) in the federal template calculator, students answer 7 questions or fewer. Brevity to this extreme leads to a high percentage of inaccurate aid and net price estimates.

The federal template calculator provides a relatively inaccurate net price estimation for most prospective students, the majority of the time. A test of the federal template calculator’s EFC

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methodology on 145,000 actual dependent and independent students' financial profiles found that more than 50% of the students fell outside of the correct Federal Methodology (FM) EFC range, with an average discrepancy of \$5,335.ⁱⁱ Even when the federal template calculator assigns a student to the correct EFC range, it can produce an inaccurate grant aid estimate because it uses need-based criteria to determine merit aid.

Institutions that have fully considered their NPC options express concern that implementing a relatively inaccurate net price calculator, like the federal template calculator, can discourage students from applying, because an institution can appear less affordable than it may actually be. The federal template calculator also can create a disparity between estimates and actual aid awards, which may disappoint or anger students and their families. To prevent these problems, institutions have the option of building their own NPC or partnering with an NPC service provider.

Institutions can decide to build an NPC in-house. However, the complexity of developing an accurate net price calculator will require significant, precious information technology resources and the involvement of multiple departments. Most IT departments will face steep learning curves about need analysis, awarding criteria, packaging policies, and aid regulations. Furthermore, the NPC will have to be maintained and updated on an annual basis.

A customized alternative NPC (“alternative” to the federal template calculator) is the best choice for institutions that discount tuition, have variable COA structures (by program, major, etc.) and/or offer merit aid to attract students. Institutions that want to demonstrate affordability by showing loan and work-study options or that, more broadly, want to integrate

financial aid and enrollment strategies will also require a customized alternative NPC. A customized calculator is, almost always, the best choice for those institutions that want to provide aid and net price estimates that are accurate when compared to their actual award letters.

An alternative NPC can do much more than simply meet the NPC requirement. Integrating an alternative calculator into a college’s admissions, enrollment and marketing strategies gives schools a powerful

tool to establish and reinforce dialogue with prospective students. Users who are given the opportunity to get additional college information are likely to provide their name and contact information. Since high school students are often seeking information on college costs during grades 10 and 11, an NPC lets colleges identify desirable prospects early in their college search.

The management reports that are available from alternative NPC providers can generate a variety of critical information about prospective students. Allowing users to register as they use the NPC means colleges can capture important information about specific students,

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including their academic and demographic profiles, to help in the institution's recruitment efforts. Data can be collected on each individual usage of the calculator. In addition, aggregate data allows colleges to identify who is using the NPC and to sort that data by EFC, income and other categories.

Institutions choosing to contract with an alternative NPC vendor will want to evaluate the level and type of service provided. Some vendors provide templates in which the institution is responsible for creating awarding rules that affect the outcome of the calculations, as well as for testing and validating that the rules they have created are yielding correct results. Another important difference among vendors is the ownership and use of data. Some vendors retain ownership of data collected by the NPC, using it for their own lead generation and marketing. Some even limit a college's access to data generated by users of its NPC. Other vendors guarantee that data generated by an institution's NPC belongs solely to the institution. This distinction is important and may warrant special attention from college administrators involved in enrollment strategy.

The net price displayed by the federal template calculator will often indicate to families that significant cost remains after likely grant aid is awarded. Alternative NPCs let colleges show what additional resources are available to meet the net price. Those resources might include loans and work-study programs. Alternative NPCs can also help to communicate the value and affordability of an institution's education by highlighting deferred payment plans, estimated monthly loan payments, employment statistics after graduation, or any other pertinent data.

A well-designed, custom NPC—one which accurately captures institutional and student-specific nuances of need, merit and military aid-award packaging—will be the best way for most institutions to demonstrate value and affordability. For many institutions, the “sticker price” is higher than the actual amount paid by most students to attend, and therefore, an accurate NPC can encourage more students to seek admission.

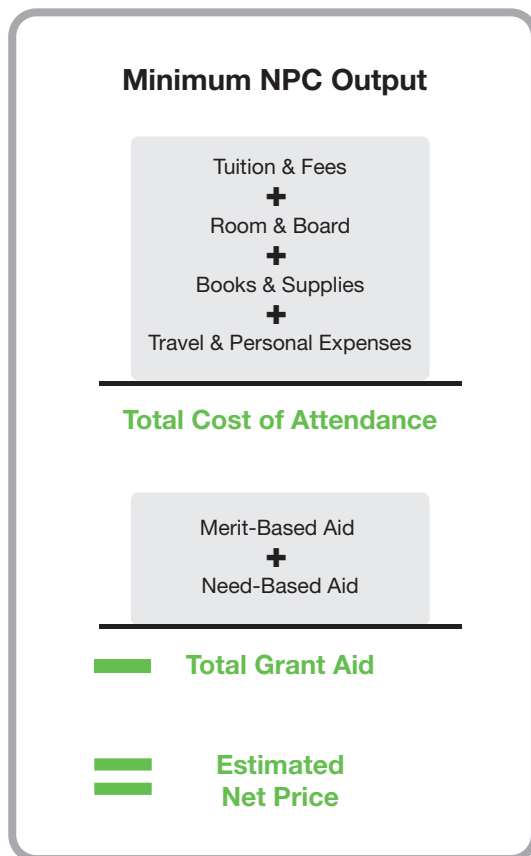
As postsecondary institutions determine how they will meet the federal requirement, they should consider the following:

- Can we tolerate projecting inaccurate estimates to prospective students?
- Will the NPC that we choose reflect well on our institution relative to peer institutions?
- Is it important that we own the data collected, or are we comfortable with an NPC that allows the provider to own and use the data?
- How will the NPC integrate and support our enrollment and financial aid strategies?

After reviewing net price calculator research, including this document, and answering these pivotal questions, postsecondary institutions will be in a better position to select the net price calculator that best fits their needs and priorities.

HEOA 2008 NPC Requirements

The Higher Education Opportunity Act of 2008 articulates the net price calculator’s purpose as “...to help current and prospective students, families, and other consumers estimate the individual net price of an institution of higher education for a student. The (net price) calculator shall be developed in a manner that enables current and prospective students, families, and consumers to determine an estimate of a current or prospective student’s individual net price at a particular institution.”ⁱⁱⁱ



The regulation defines estimated net price as the difference between an institution’s average COA (the sum of direct and indirect costs, including tuition and fees, room and board, books and supplies, and other expenses, such as personal expenses and transportation, for a first-time, full-time undergraduate student) and need- and merit-based grant aid awards.^{iv} The regulation does not allow inclusion of private grants and scholarships in the calculation. The federal template’s guide refers to “price of attendance.” However, because “cost of attendance” is most commonly used by postsecondary institutions, we use COA.

Elise Miller, program director for the U.S. Department of Education’s Integrated Postsecondary Education Data Systems (IPEDS), explained the idea behind the requirement: “We just want to break down the myth of ‘sticker price’ and get beyond it. This is to give students some indication that they will not be paying that full price.”^v

The Federal Template Calculator

Creating one net price calculator tool for nearly 7,000 unique postsecondary institutions, from career colleges to research universities, was an understandably challenging task for the Technical Review Panel (TRP), a group of 58 individuals representing federal and state governments, postsecondary institutions from all sectors, professional associations, and others, who met January 27-28, 2009. To meet the law's minimal data element requirements, the TRP recommended a simple utility for schools and students.

“We needed to minimize the burden on students and not ask a lot of questions or hard questions that required research on their part,” said Mary Sapp, Ph.D., TRP chair and assistant vice president for planning and institutional research at the University of Miami. “We also wanted to minimize the burden on institutions.”^{vi}

“We just want to break down the myth of ‘sticker price’ and get beyond it. This is to give students some indication that they will not be paying that full price.”

Elise Miller, U.S. Department of Education

Because of numerous inherent limitations in the federal template calculator's “one size fits all” design, the Association for Institutional Research (AIR) encourages postsecondary institutions, particularly those that award merit aid or want to use a calculator to support enrollment management, to

consider alternative NPCs.^{vii} The addendum to this paper (available on request) details both how the federal template calculator estimates EFC and how the template functions. It also provides other resources to help institutions meet the NPC requirement.

User Experience

A student's federal template calculator experience begins by viewing a message explaining that the calculator provides estimates and is not intended to represent a final determination of student aid awards or net price. The student answers 7 questions or fewer based on his or her dependency status. Name and contact information are not requested.

The student is asked the following questions to determine dependency and an EFC estimate:

- How old are you?
- Are you (the student) married?
- Do you (the student) have any dependent children?
- How many people are in your family's household?
- Of the number in your family above, how many will be in college next year?

- What is your household income?

The student also answers questions to determine COA:

- Where do you plan to live while attending this institution?
- Is the student eligible for in-state/in-district or out-of-state tuition?

No merit aid questions are asked. The student is instructed to review his or her information. A results page shows aid and net price estimates based on prior-year data. The user does not see eligible loans, work-study or military aid as resources to pay for a student's cost. The federal template calculator never displays a student's EFC. The output includes 15 lines of required disclosures. Institutions may add other disclosure messages.

For a demonstration of the federal template calculator from the student's perspective, please visit www.studentaidservices.com/TemplateDemo/npcalc.htm and read our technical supplement's implementation information (available on request).

How It Works

To determine "personalized" aid and net price estimates, the federal template calculator relies on a simplified look-up table method rather than the comprehensive programming required by more robust technology applications that account for the details of an institution's packaging and awarding process. The result is a basic utility that does not require advanced

computer programming, which might be a burden for some schools. "The template's programming is for the lowest common denominator," said Dr. Sapp.^{viii}

"The template's programming is for the lowest common denominator."

Mary Sapp, Ph.D., University of Miami

After a prospective student answers questions about income, dependency and number of children in order for an EFC to be estimated, the template matches

this information with the data inputted by an institution and produces an estimated award. The programming behind the two look-up tables prepared by the institution associates the prospective student with an existing one who had similar characteristics in a prior year. The quality of the data recorded on the two look-up tables will affect the relative accuracy of estimates. The use of prior-year data can create a net price estimate that compares less accurately to a prospective student's award letter.

Institutions using the federal template calculator must prepare a new COA look-up table and a new grant aid look-up table each year. These two tables do not automatically capture data collected by IPEDS or the National Center for Education Statistics (NCES). The most challenging task that institutions using the template face is annually gathering, analyzing, normalizing, and testing historical need and merit aid-awarding data based on a student's EFC. The federal template calculator requires institutions to use historical data from the most recent

academic year for which both cost and student aid data are available.^{ix} The instructions for creating the template advise institutions not to mix cost data from one year with aid data from another.^x

The most challenging task that institutions using the template face is annually gathering, analyzing, normalizing, and testing historical need and merit aid-awarding data based on a student's EFC.

Beyond adding a few lines of text, the way the federal template calculator operates cannot be customized without altering the programming or HTML code. The number of questions asked, the number of look-up tables created and the method of determining EFCs are fixed.

Some institutions may find that the federal template calculator's aid estimates can be improved with a focused effort of gathering data, populating look-up tables and verifying outputs for accuracy. (Improving the aid estimates in the look-up tables does not, however, improve the template's EFC accuracy.) There may be significant sources of error in the data that populates the look-up tables, such as athletic scholarships or other large awards given to a few students. Other factors, such as awards made to students who withdraw early, can distort the amount of aid that a first-time, full-time undergraduate would likely receive. Well-designed statistical analysis and informed judgment can partially correct for the special student circumstances mentioned above, which often leads to a lower aid estimate. Since a lower aid estimate means a higher net price, failure to analyze and adjust data can result in an institution appearing less affordable to a prospective student than may actually be the case.

The federal template calculator is also inaccurate when schools award aid based on criteria other than financial need, such as tuition discounts or merit aid. Since the template offers no opportunity to distinguish students on a merit basis, these errors are more difficult to correct. Some institutions that offer significant institutional aid, different academic programs with different COAs or different aid awards for different academic achievements will likely find that one set of look-up tables will not produce accurate results. Institutions may consider creating multiple calculators from the federal template to achieve reasonable accuracy for different types of students, but the data populating each cell of the look-up tables will likely reflect significantly fewer students, so this approach may be useful only for institutions with large first-year classes.

Failure to analyze and adjust data can result in an institution appearing less affordable to a prospective student than may actually be the case.

Is the Federal Template Calculator Reasonably Accurate?

If a student has the characteristics that result in an accurate EFC from the federal template calculator, two additional conditions must be met simultaneously in order for that student to receive a reasonably accurate net price estimate:

- The institution must award need-based aid strictly according to FM need analysis
- The institution must not discount tuition and must offer little or no merit aid

However, varying one of these conditions will increase relative inaccuracy for grant and net price results. Low-income students will receive more accurate estimates because their FM EFC and federal template calculator EFC will be close. These students typically don't own significant assets and don't have untaxed income or exclusions that affect FM EFC calculations. Exclusions that affect FM EFC are not considered by the federal template calculator.




Federal Template Calculator Disadvantages and Limitations

The TRP faced the tough task of trying to create a simple utility that can produce accurate results for all schools. The federal template calculator is most susceptible to inaccuracies in three ways:

- Estimating an EFC from very limited data
- Estimating total median need and merit grant aid using EFC ranges where these ranges may relate to a wide dispersion of actual award amounts, such that the median awards are unrepresentative of the vast majority of individual students who fall within the EFC range
- The lack of consideration given to any merit criteria

The federal template calculator's EFC estimates are often inaccurate because they are based upon no more than 6 questions. This brevity affects the accuracy of the estimated aid and the net price. The federal template calculator does not adhere to FM when determining a student's EFC. FM estimates an EFC using as many as 74 data points from a series of complex questions about income, income exclusions, assets, and tax exemptions on the Free Application for Federal Student Aid (FAFSA). From the total income and assets provided on a FAFSA, a series of allowances are subtracted and the remainders are assessed based on a table of progressive marginal rates.

In contrast, the federal template calculator uses a much more simplistic approach. First, the EFC is estimated according to income, household size, and number of family members in college. Then, the template looks up a stored award amount for the corresponding EFC range in a table embedded within the template. The median awards are entered by the institution based on students who had similar characteristics in a prior year.

Federal Template vs. Federal Methodology EFC Questions			
	Category	Federal Template Questions	Federal Methodology EFC Questions
	Student Dependency	Up to 3	Up to 13
	Student Financials	0	Up to 27
	Parent Household Information and Financials	Up to 3	Up to 34
	TOTAL	Up to 6	Up to 74

We modeled the calculations used by the federal template calculator to determine the EFC and investigated which assumptions are most prone to error by using actual student profiles. Our test of more than 102,000 dependent and 43,000 independent student profiles showed that 59% and 46%, respectively, fell outside of the correct FM EFC ranges. This analysis showed that when the federal template calculator erred, students were most often inaccurately assigned to an EFC range greater than the one to which FM would have assigned them. Simply put, in these cases, the cost of attending the institution looks more expensive than it actually is.

For institutions using Institutional Methodology (IM) or a modified version of FM for need analysis, the difference between the federal template calculator’s EFC estimate and the EFC they use to award institutional aid will be much greater.

In these cases, the amount of income and assets, as well as the allowances and assessment rates used in an IM EFC calculation, are significantly different than those included in FM. “Modified FM” refers to the practice at some institutions of asking additional questions about classes of assets, income and losses in order to produce an EFC unique to that institution. The modified EFC is used to award institutional aid not governed by rules applying to federal and most state aid, which is awarded by a strict application of Federal Methodology. The

technical supplement (available on request) provides a comprehensive review of how the federal template calculator determines EFC.

Comparing the Federal Template Calculator and FM/FAFSA EFCs

The federal template calculator methodology considers far fewer variables than Federal Methodology when determining an EFC. The federal template calculator's EFC methodology ignores age of the older parent, assets, factors determining total income, income earned from work, income when both parents work, and state of residence. In addition, the federal template vastly underestimates the EFC for a large percentage of independent students. Here is how each of these variables affects the EFC calculation:

- **Age of the Older Parent.** There is an allowance for parents' savings in the FAFSA EFC, and the older the parent, the higher the allowance is. Ignoring this variable results in a higher EFC since no allowance is given.
- **Assets.** While household assets are assessed for a FAFSA EFC, the federal template calculator gathers no asset information, which can result in large EFC errors. Ignoring this variable results in a lower EFC.
- **Factors Determining Total Income.** In theory, those who use the federal template calculator can enter accurate income information. However, users are given minimal guidance. Unfamiliar concepts about how "income" is defined to determine EFC are not clearly explained. For example, some untaxed income is not included in total income considered, but it helps determine aid eligibility, while other types of income in AGI are excluded when calculating an EFC. Therefore, the income that users provide may not be correct. Ignoring these variables could result in a higher or lower EFC, depending on the family's financial situation.
- **Underestimation of EFC for Independent Students.** The federal template assigns a \$0 EFC to virtually all independent students with a broad income range (\$0–\$29,999). This assumption results in a vastly underestimated EFC for students with actual EFCs of between \$2,500–\$10,000.
- **Income Earned from Work.** There is an allowance for FICA taxes paid by the parent(s) and student in the FAFSA EFC. A higher ratio of unearned income will result in a larger EFC. Ignoring this variable results in a higher EFC since no allowance is given.
- **Income When Both Parents Work.** The FAFSA EFC is less for two-parent households in which both have earned income that, for example, totals \$100,000, as opposed to a two-parent household in which one parent earns \$100,000. Ignoring this variable results in a higher EFC since no allowance is given.

- **State of Residence.** An allowance for state and local taxes is part of the FAFSA EFC calculation, resulting in smaller EFCs for residents of relatively highly taxed jurisdictions. Ignoring this variable results in a higher EFC since no allowance is given.

There are three limitations of the federal template that most adversely affect the accuracy of aid and net price estimates: independent student EFC calculation, assets and academic merit. The template's assumptions for independent students result in a vastly underestimated EFC for many students. The template's failure to account for variations in assets contributes to inaccuracies in the EFC estimate. The exclusion of any criteria to account for variations in merit aid awards often results in highly inaccurate grant aid estimates.

Independent Students: \$0 EFC Incorrectly Given to 6 Out of 10 Students

The federal template calculator determines the EFC for independent students based on student income, household size, and the number of family members in college.

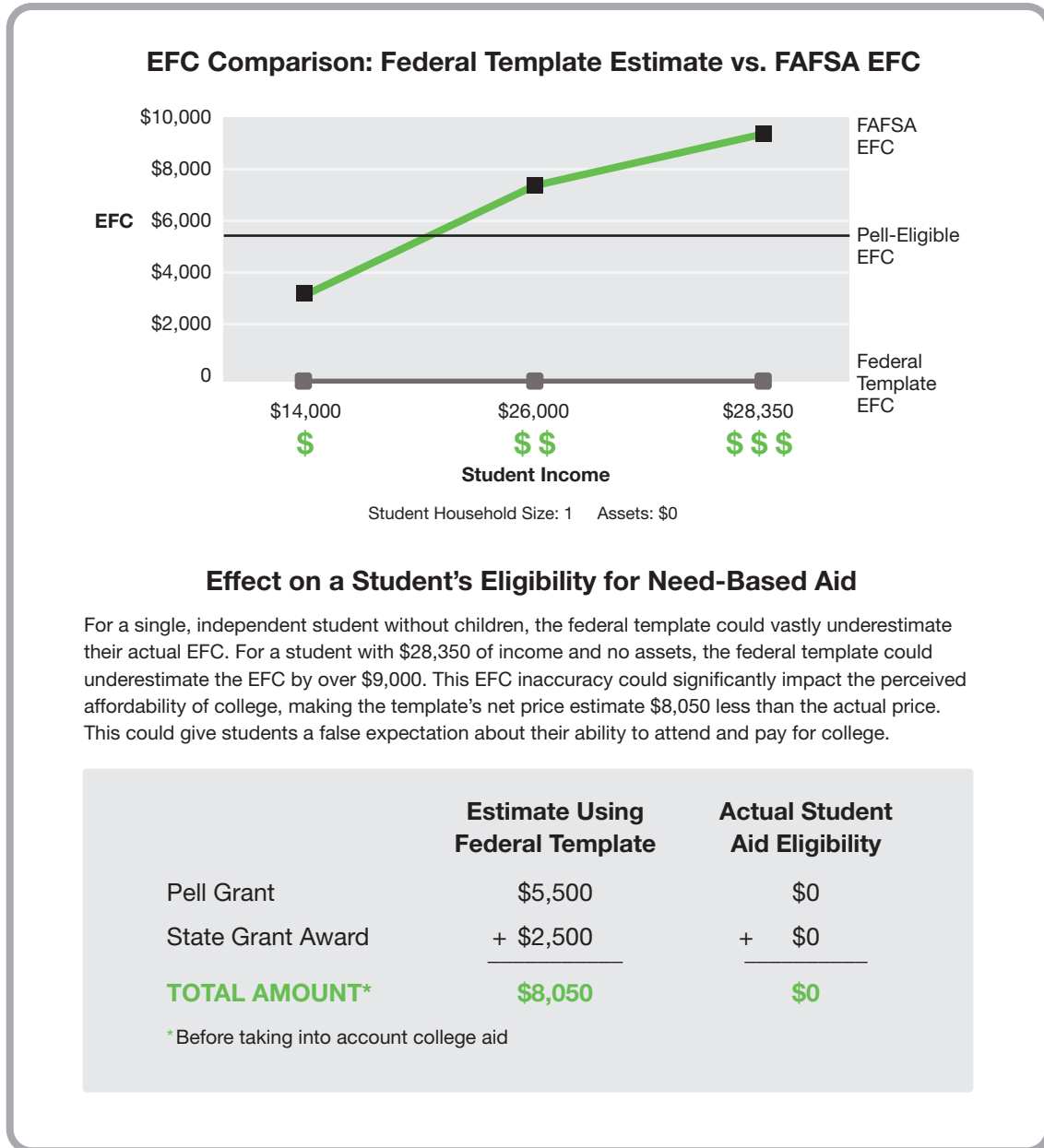
In a review of over 43,000 actual independent students, 62% of students with FAFSA EFCs ranging from \$2,500 - \$10,000 were given a \$0 EFC by the federal template.

FAFSA EFC Range	Total Independent Students in Sample	Total Students With \$0 Federal Template EFC	% of Students
\$2,501 - \$5,000	5,287	3,530	67%
\$5,001 - \$7,500	3,966	2,863	72%
\$7,501 - \$10,000	2,888	1,103	38%
TOTAL	12,141	7,496	62%

The reason for this EFC inaccuracy is that students falling within the broad income range of \$0–\$29,999 are automatically assigned a \$0 EFC by the federal template (see Whitepaper Addendum for more information about how the federal template EFC calculation works). This assumption does not account for the fact that many of these same students filing the FAFSA will commonly receive an EFC of up to \$10,000.

Underestimating the EFC in this way will cause a majority of independent students to have a false expectation about their ability to pay for college, because these students would be presented with need-based awards they would otherwise not qualify for. A student with a \$0 EFC would be eligible for the maximum Pell Grant of \$5,550, for example, and in many cases be eligible for need-based aid from state and institutional sources.

The example below demonstrates the impact further.



Assets Not Included

The federal template calculator does not ask asset questions to estimate EFC. Investments, rental property and checking and savings accounts are the most common examples of assets that can affect a family's EFC. Federal Methodology provides parents and independent students with an education savings and asset protection allowance that is based on marital status and the older parent's age. For example, a family headed by an unmarried 43-year-old parent would have \$17,500 of the parent assets protected. Every \$20,000 in parent assets above the \$17,500 protected amount increases the FAFSA EFC by up to \$1,120. Except in cases where a simplified or automatic-zero EFC applies, every \$20,000 increase in a *dependent student's* assets increases the FAFSA EFC by \$4,000.

The discrepancy between a FAFSA EFC and a federal template calculator EFC will likely be more pronounced for colleges using Institutional Methodology because IM's need-based aid award analysis includes a greater variety of assets, including home equity.

Merit Aid Omitted

The federal template calculator matches the student's estimated EFC to a corresponding grant aid figure. The federal template calculator asks no merit questions, such as those concerning GPA or standardized test scores. Therefore, merit and need grant estimates are based only on need criteria.

After HEOA passed, the members of the Technical Review Panel determined that the original requirement of providing "average" aid estimates was too inaccurate. Institutions are now instructed to use median figures because values at the extreme distort an average (mean) more than a median.^{xi} Institutions must collect the median total grant aid awarded to students by EFC, housing status and residency (if applicable) to populate the template's award table.

Relying on the federal template calculator's median grant aid estimates severely limits a college's ability to provide personalized net price estimates based on a student's circumstances.

Table 2: Grants and Scholarships for Full-time, First-time Undergraduate Students: 2008-09

Enter the amounts requested below. Data should represent the **median** amount of both need and non-need grant and scholarship aid from **Federal, State, or Local Governments, or the Institution (exclude private source grant or scholarship aid)** awarded to, and accepted by, all **first-time, full-time students** with the indicated living and residency category for each Expected Family Contribution (EFC) range. If you have fewer than three (3) observations for a cell, leave the cell blank. The system will calculate and insert the average of the surrounding cells. In the bottom row of the table, report the median amount of grant or scholarships aid for students for whom you do not know an EFC (i.e., they did not file a FAFSA or apply for need-based financial aid).

Report in whole dollars only

EFC Range	In-district			In-state			Out-of-state		
	On-campus	Off-campus not with family	Off-campus with family	On-campus	Off-campus not with family	Off-campus with family	On-campus	Off-campus not with family	Off-campus with family
\$0									
\$1-1,000									
\$1,001-2,500									
\$2,501-5,000									
\$5,001-\$7,500									
\$7,501-\$10,000									
\$10,001-\$12,500									
\$12,501-\$15,000									
\$15,001-\$20,000									
\$20,001-\$30,000									
\$30,001-\$40,000									
>\$40,000									
Non-FAFSA filers/unknown EFC									

Sample Grant Aid Look-Up Table	
EFC Range	Out-of-State On-Campus Housing
\$0	\$9,500
\$1 - 1,000	\$9,500
\$1,001 - 2,500	\$8,500
\$2,501 - 5,000	\$8,000
\$5,501 - 7,500	\$7,500
\$7,501 - 10,000	\$7,000

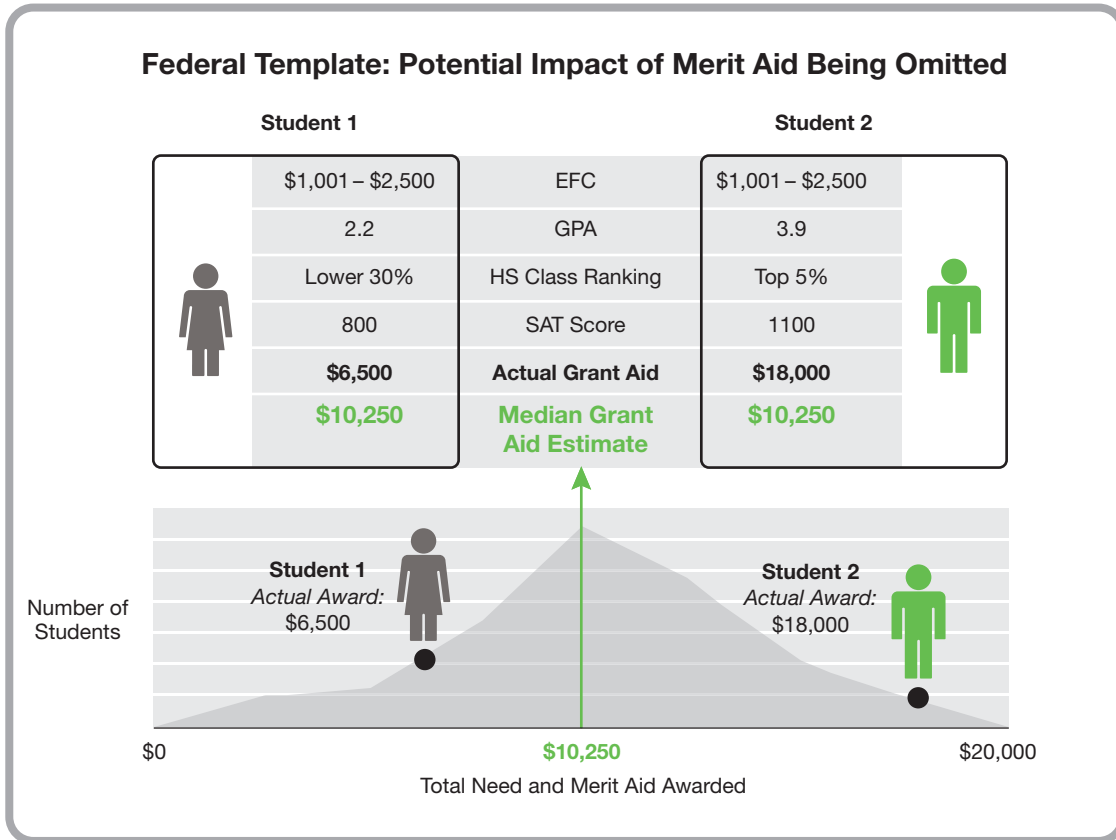
Analysis presented by Lefter Daku, Ph.D., associate director of research and planning at Virginia Tech, found significant variations in grant aid estimates when testing the federal template with the university’s data. For example, out-of-state students whose federal

template EFC fit the \$1,001–\$2,500 range would receive an average grant aid estimate of \$12,790. However, Daku found large variation in that same federal template EFC range, with a standard deviation of \$8,393. Assuming a fairly symmetric distribution of grant aid data, roughly one out of three students in that same federal template EFC range received actual grant awards that deviated from the federal template’s estimate by a minimum of \$8,393.

Because the federal template provides a point estimate of the college net price, it tends to ignore

the effect of grant aid variability. This weakness in the federal template calculator could cause prospective students and their families to form unrealistic expectations based on the net price estimates they receive.^{xii}

Analysis presented by Lefter Daku, Ph.D., associate director of research and planning at Virginia Tech, found significant variations in grant aid estimates when testing the federal template with the university’s data.



The Association for Institutional Research’s Alert #38, issued in April 2010 to Title IV institutions, states: “Because the ED template is ‘one-size-fits-all,’ its estimated net price may not be as accurate for many institutions as the net price estimated by an alternative calculator, especially for those institutions that award a significant number of large scholarships or other non-need grants.”^{xiii} This statement underscores a key point: Institutions that award aid based on any non-need criteria, such as standardized test scores, GPA, class rank, admissions rating, geographic location, or other variables, are susceptible to higher levels of inaccuracy using the federal template calculator. Grant aid miscalculations by the federal template calculator could significantly undermine an institution’s efforts to attract top-performing students.

“Because the ED template is ‘one size fits all,’ its estimated net price may not be as accurate for many institutions as the net price estimated by an alternative calculator, especially for those institutions that award a significant number of large scholarships or other non-need grants.”

The Association for Institutional Research’s Alert #38

Are Multiple Templates a Solution?

The federal template calculator cannot be customized to improve the inherent limits of its accuracy. To partially compensate, some institutions are contemplating multiple versions of the template and directing students to the appropriate version. For example, if an institution awards scholarships based on a single set of merit criteria, it could create two versions of the federal template calculator. One version could have grant estimates that include only need-based grants, and the other version could include estimates of need- and merit-based grants. Institutions will need to use carefully constructed messaging so that students are directed to the appropriate version. This option might be considered by institutions with COA figures or percentage-of-need-met policies that vary based on a student's selected program, academic major or any other characteristic.

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Creating multiple net price calculators using the federal template, as noted earlier, involves creating multiple data sets and analyzing the data collected separately for each version. For example, if an institution awards merit-based scholarships based on a single criterion, such as GPA greater than 3.5, it could create two versions of the template. Users with GPAs greater than 3.5 would follow a link to one version of the template; users with GPAs less than or equal to 3.5 would be directed to a different version. Institutions with multiple COAs or different aid-awarding patterns associated with different academic programs could also use multiple versions of the template to yield more accurate results.

Institutions implementing a multiple template solution must use special caution to ensure that the number of data points populating each cell is large enough to remain statistically meaningful. Because the sample size used to populate multiple versions of the federal template calculator will be smaller than an institution's population, it will be even more important to do a thorough data analysis each year to verify accuracy. The drawback of this approach is that it will reduce the student sample size, which would make the grant estimates more susceptible to outliers or extreme values. Unless there is a strong correlation between EFC and merit aid awards, one year's analysis will not be predictive of the next.

Institutions Have a Choice

For a large number of institutions, especially those with generous merit awards, the federal template calculator will produce inaccurate net price estimates. For those institutions, as well as those that do not award merit aid, the federal template calculator gives no indication of the resources beyond grants that are available to help families meet the cost of college. As institutions increasingly become aware of the limitations and demonstrated inaccuracies of the federal template calculator, more and more are deciding to install an alternative calculator.

A highly inaccurate calculator can either discourage students from applying, because an institution appears less affordable than it is, or create a disparity between estimates and actual aid awards that disappoints—or worse, angers—students and their families.

To prevent these misperceptions, the HEOA allows, and NCES encourages, institutions to use an alternative calculator as long as it meets the federal template calculator’s minimum requirements. Institutions may either build an NPC in-house or partner with an experienced third-party provider.^{xiv}

Institutions frequently choose alternative NPCs because they:

- Want prospective students to receive accurate aid and net price estimates
- Want to have control over the accuracy of their calculator
- Want to show all financial aid resources available to families, including loans and work-study, in addition to grant aid
- Want to integrate the NPC into their enrollment process by inviting users to submit their contact information, allowing the institution to understand its applicant pool and follow up with prospective students
- Want to ensure that their NPC best reflects the value, affordability, quality, and character of their institution
- Want to use their NPC to cater to critical student populations like transfer students, graduate students, non-native English speaking families, and military service members

Alternative NPCs are more accurate because they can:

- Calculate a more accurate EFC, including any institutional variation in need analysis, to project need-based awards
- Use specific merit-aid (or other) criteria to project merit-based (or other) awards
- Integrate the institution's actual awarding processes into the net price calculation
- Offer advanced guidance (help text, skip logic) to the user, making accurate input data more likely
- Determine accurate net price and aid estimates—including Post-9/11 GI Bill benefits—to active-duty and veteran military personnel

Having a customized third-party provider or building an in-house solution can also provide flexibility in how an institution uses the NPC to communicate with prospective students. Specifically, an alternative NPC can:

- Provide an institution with flexibility in how it presents cost, aid eligibility and net price while still being in full compliance with the federal mandate
- Better communicate affordability by showing eligibility for loans, military aid and work-study programs
- Help institutions that offer tuition discounting policies communicate the potentially large differences between the “sticker price” and the net price
- Incorporate a look, feel and messaging that are consistent with the rest of the institution's Web site
- Assist an admissions department in targeting and recruiting prospective students
- Invite users to submit contact information, providing a valuable source of prospective student leads to the admissions office
- Generate reports that detail each instance of calculator usage, as well as data on the financial, academic and demographic profiles of calculator users

Some colleges and universities use net price calculators to support their marketing and recruiting programs. Demonstrating affordability early in the student's search can help institutions target recruitment programs to those students the institutions want to attract and who are most likely to attend.

“Our *Early Estimator* is the centerpiece of our strategy. The better information families have, the better decision they’ll make, and we do believe our *Early Estimator* is a way families can make that better decision.”

David Pardieck, Bradley University

“Our *Early Estimator* is the centerpiece of our strategy,” said Bradley University’s David Pardieck. “The better information families have, the better decision they’ll make, and we do believe our *Early Estimator* is a way families can make that better decision.”

Alternative NPCs can enable follow-up with NPC users if customized with the option to provide contact information and questions that identify populations an institution is interested in attracting. (The federal template calculator provides no means of engaging prospective students in such dialogue.) These questions include information about

standardized test scores, GPA, class rank, and other criteria, all of which enable the institution to reach enrollment or admissions goals. For example, institutions trying to increase the economic diversity of their student body can use an alternative NPC to demonstrate generous need-based awards to eligible students.

Knowing it wanted a highly accurate calculator that enhanced its marketing strategy, Albright College of Reading, Pennsylvania, which enrolls about 1,625 undergraduates annually, partnered with Student Aid Services as its third-party provider to build a fully customized NPC.

“We’ve always been aggressive in our marketing, and this is just another tool to do that,” said Gregory E. Eichhorn, vice president of enrollment management and dean of admission for Albright. “Families can now understand the actual cost, not only after grants and scholarships, but also counting loans and work-study options. For an independent college like Albright, it will help us show families that private higher education is affordable and well within reach. The calculator also will be an asset in our recruitment because we can easily follow up with the students and families who have used it.”^{xv}

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Gregory E. Eichhorn, Albright College

Net price calculators “are necessary to make private education understandable and affordable,” according to Eichhorn. “Calculators also should help with retention. The earlier you know the cost, the more likely you will stick with your college-choice decision.”

Ownership of NPC User Data

Institutions that choose an alternative NPC instead of the federal template calculator will want to consider whether data entered into the NPC will be available to them for analysis or for communication to prospective students. One of the most defining issues that a postsecondary institution will face regarding an NPC choice is: *“Who owns the rights to the information supplied by prospective students and their families who use the calculator?”*

Among the NPC options being offered to institutions currently, there are two distinct answers:

- **The institution owns the information** derived from a prospective student’s use of the institution’s net price calculator and, in turn, has the right to communicate with the prospective student. In this circumstance, the institution may decide not to use the information by not asking the prospective student to register (doing so is optional in any case) or, similarly, may decide not to gather data from the use of the NPC at all. Regardless, those decisions about data use would be made solely by the institution.
- **The net price calculator provider owns the information** entered by the prospective student, and that provider may structure its “terms of use” to offer a wide range of other products and services to the prospective student or even sell the prospective student’s information in the lead generation market.

On this topic, our view is not neutral. We are of the strong opinion that a prospective student’s information should not be bought or sold in a lead generation market simply because that student visited a particular institution’s Web site to get a net price for that institution. Also, we do not believe it is in the best interest of any institution to agree to give up the rights to NPC information. Doing so would deprive the school of a valuable means of establishing dialogue with its prospective students, would open the door to data being used by competing institutions and would allow third parties to send messages unauthorized by a school to users of its NPC.

We do not believe it is in the best interest of any institution to agree to give up the rights to NPC information.

Although some institutions may favor allowing a third party to own the information provided by a prospective student, we are certain that the vast majority of schools do not. In fact, the question of “who owns the information?” is typically one of the first questions we get in our NPC discussions with both financial aid and admissions leaders at a school considering its NPC options.

Our recommendation for any institution considering an alternative NPC is to ask the provider specific questions regarding the ownership and subsequent use of data provided by the user. We recommend that an institution get those answers in writing.

The questions we recommend that institutions ask are as follows:

- Who owns any data collected by our NPC?
- What are the Terms of Service and Privacy Policies that govern the use of our NPC?
- Can that data be used for lead generation or the sale of products and services without our consent?
- Will users of our calculator be encouraged to sign up, or presented with messages that solicit them to sign up, for any other services or memberships that may be governed by alternative Terms of Service and Privacy Policies?
- How much of the data collected by our NPC is available to our college, and when can it be accessed?
- Who controls the messaging that encourages users to enter their data?
- How is data made available (i.e., in what format, how often and how is it accessed)?
- If the user does not enter personally identifiable information, are statistical and demographic data available for analysis?
- Are managerial reports based on data generated by our NPC available to the college?

Analysis of a Stand-Alone EFC Estimator to Supplement an NPC

The complexity of accurate EFC calculations poses a major challenge when creating a net price calculator. Some institutions are considering directing students to an external Web site's EFC estimator to answer questions and then manually enter the number into the calculator. Here are the top issues and risks of implementing an external EFC:

Advantages:

- Simplifies NPC development by eliminating the complexity of learning and programming EFC calculations
- If a student has completed the FAFSA and has already been notified of his or her EFC, entering the known EFC reduces the number of questions required to complete an NPC
- Eliminates the need to update the EFC estimation portion of an NPC

Disadvantages:

- Offers no control over the accuracy and quality of the EFC, which could adversely affect an institution's estimates. Many EFC estimators are based on estimates instead of a complete EFC calculation and use data that is not current
- Interrupts the user experience, which may cause a student to abandon the NPC
- Takes more of the user's time. Some EFC estimators' questions must be repeated on NPCs to determine aid awards, ultimately making the user experience longer, which also may cause abandonment
- Offers no control over the timing of updates, so EFC estimates may be based on one year, while an institution's cost is based on another
- Can confuse students about EFC estimates. Some EFC estimators generate FM EFC as well as IM and other alternative EFC estimates, and students may choose the wrong one to input into an NPC
- Can confuse students about aid awards. Many external EFC estimators also generate aid award estimates that most likely will be different from a college's because external EFC estimates are not based on institutional aid award packaging. Students presented with an aid estimate from an EFC estimator and an NPC may question which is correct
- Can require users to register and log in separately from the institution's NPC

Key Questions to Consider When Issuing an RFP for or Selecting an Alternative NPC

Many institutions may decide to issue a Request for Proposal (RFP) for the provision of net price calculator technologies and/or services. Based on our interaction with institutions that have chosen, or are choosing, an NPC provider, we have created the following list of commonly asked RFP questions:

1. Provide a detailed product description that highlights all of the features and functionality of your NPC alternative.
2. What institutions are currently using your product?
3. What are the fees associated with implementing your NPC alternative (including setup and ongoing licensing or maintenance fees)?
4. What are the terms and conditions of the service agreement that our institution would be required to sign?
5. Will all the data generated by my NPC be owned exclusively by the college?
6. How precisely can you replicate my institution's need analysis, aid awarding and packaging policies?
7. How long does it take to implement your NPC?
8. How would the NPC estimates provided to prospective students compare to the actual award letters they receive from our institution?
9. How do my prospective students access the NPC? Does your service require that our NPC be listed on third-party sites?
10. Describe the features of your NPC that are focused on ensuring a positive user experience and accurate data entry.
11. What is the level of effort required from institutional resources to implement your NPC solution? Provide insights into the admissions/enrollment management, financial aid and information technology resources required.
12. Does your NPC have a Spanish alternative available for families who are non-native English speakers?
13. Can your NPC provide estimates for Military Education benefits?

14. Can your NPC provide insights into the total cost of a degree and how much monthly loan payments will be upon graduation?
15. What is the level of customization available for your NPC? What are some specific examples of the customizable features of your NPC?
16. How will your NPC help my institution attract and recruit prospective students?
17. How will your NPC help communicate the affordability and value of an education at my institution?
18. What are the periodic and annual maintenance requirements for your NPC?
19. Provide a detailed outline of the technology hardware required for your NPC, including the minimum system requirements necessary to run the application (for both the institution and prospective students).
20. What type of data reporting functionality do you have available for institutions?
21. Is your NPC compatible with multiple Internet browsers and handheld devices?
22. How would your product assist our institution's admissions and enrollment management outreach/prospecting efforts?
23. Do you employ any third parties or subcontractors that would be incorporated into this relationship?
24. How does your organization ensure the privacy and confidentiality of all student and parent documents and the content contained therein, regarding both hard copies and electronic files?
25. Can you guarantee that my students and NPC registrants will not be marketed to by third parties?
26. Provide insights into the product enhancements or new features/functionality that you intend to incorporate into your NPC platform.
27. Do you facilitate in any way a comparison between our institution's financial aid packages to prospective students and those offered by peer schools?
28. Provide any other information that you believe would be helpful in our evaluation of your proposal.

Resources Required to Implement an NPC

Whether an institution chooses to use the federal template calculator, develop a calculator in-house or partner with a third-party provider, thoughtful input from admissions, financial aid, enrollment management, marketing, and Web site management will produce the best results.

Creating a custom NPC in-house or using the federal template to create multiple NPCs for different types of students or academic programs “will not be a simple project,” said Dr. Sapp.^{xvi}

One of the biggest obstacles for institutions implementing an NPC in-house is the availability of information technology (IT) resources. A successful NPC built by an institution will require the blending of IT expertise with specific knowledge of financial aid packaging at the particular institution. If the institution wants features such as skip logic or dynamic help text, some advanced technical expertise will be crucial. Even in the case of building the federal template calculator, some IT teams will face several steep learning curves. The process may include understanding federal (and possibly institutional) need analysis methodology and the awarding criteria and packaging policies at their institution, as well as learning federal (and often state) financial aid regulations.

Comparison of Department Involvement in NPC Implementation

Department	Federal Template Calculator	In-House NPC	Third-Party NPC
Enrollment management, admissions, marketing	Limited involvement to help with the development of messaging	Extensive involvement to guide messaging and content	Low to moderate involvement to guide the process and ensure that the desired message to end users is communicated
Financial aid	Heavy involvement to gather data and analyze it for acceptable outcomes (though this may be done by institutional research staff if available)	Heavy involvement to document need analysis and packaging, as well as to train IT personnel	Moderate involvement to provide input on need analysis and packaging, but financial aid concepts will not be required
Information technology	Minimal involvement to create links	Extremely heavy involvement to learn and master the financial aid concepts of need analysis and packaging, as well as to update the NPC regularly as aid programs and regulations change	Involvement varies by provider, from the minimal role of creating links to deeper integration with the institution's Web site and IT infrastructure

A State-Sponsored, Multi-Institution NPC?

The option of creating a centralized, state-sponsored, multi-institution net price calculator as a means of federal compliance can appeal to both institutions and state-level policy makers. The initial appeal of this concept for institutions is the likelihood that the cost of a centralized NPC would be borne by the state, and the staff at any particular institution would have relatively less responsibility for programming the calculator technology. For policy makers, the idea of a centralized calculator is appealing because it would allow the cost of various institutions to be readily compared. State leaders, including notably the legislature in Texas, should be recognized for their focus on college cost transparency. They understandably like giving the public a means of comparing the cost of a college education at institutions in the same state and, especially, in the same state system.

Despite the appeal of the concept, the practical disadvantages associated with the centralized, state-sponsored net price calculator are serious enough from the individual institution's perspective that the approach may not be an ideal solution in most cases. The crux of the problem with this concept is similar to that of the federal calculator: "One size fits all" fails to meet the particular circumstances of individual institutions.

A "one size fits all" calculator would require the state coordinating authority to get a consensus among member institutions regarding the methodology needed for accurate estimations, or it would have to settle for a calculator with "lowest common denominator" inputs, customization and messaging.

Specific reasons that a multi-institution NPC may not be the best solution for participating institutions include the following:

- Institutions that discount or award aid based on merit or other non-need-based criteria would likely need an expanded customized question set. It's unlikely that a state-sponsored calculator would allow each participating school to customize the questions it asks prospective students.
- Institutions that compete for students from outside their own state (well-known state flagships, for example) would find that a "one size fits all" calculator can put them at a distinct disadvantage when compared to peer institutions with customized calculators.
- Need-analysis methodologies and aid-awarding criteria are unlikely to be captured in a centralized calculator. Similarly, the timing of updates would be out of the school's control. (We've found that schools operate on very different cycles regarding updating their costs, need-analysis year, award policies, etc.)
- A state template would likely accommodate only the most basic aid packaging, so the outcomes shown prospective students wouldn't be representative of actual aid awards.

- States may or may not have the resources to create accurate EFC calculators.
- Even if the core EFC calculator is of high quality, only schools that use the FM EFC methodology would be able to generate accurate EFC estimates.
- Messaging, input screens and output pages would not be tailored to match individual institutions' requirements, design or messaging.
- Data retention, security, availability, and use would be limited by the template-like nature of a multi-institution NPC and the resources available to the state-sponsoring organization.
- The state-sponsored solutions would likely not offer additional opportunities to communicate value and affordability or allow institutions to streamline their admissions and financial aid processes.

Our observation is that while a centralized, state-sponsored college cost estimation tool could meet important objectives of state policy makers, it is less likely to meet the particular objectives of individual institutions and will not provide the most accurate net price calculations for prospective students.

Conclusion: Consider What Is Important to Your Institution

Well ahead of the federal mandate, private and public colleges and universities across the country are beginning to adopt net price calculators as a way of communicating affordability to prospective students and families. Over 6,000 more institutions will make a decision regarding NPC implementation between now and October 2011.

Our advice is for institutions to select an NPC that will provide students with reliable, personalized estimates based on that institution's particular aid-awarding approach. The other option, resulting in inaccurate aid and net price estimates, may fail to serve the best interest of the institution or prospective students. As noted earlier in this paper, an inaccurate calculator will overestimate the cost of attendance for many prospective students and underestimate the cost for others, creating predictable problems for an institution.

When choosing an NPC, we recommend that all postsecondary institutions consider the following:

- Will the NPC reflect well on our institution relative to peer institutions?
- What is our tolerance among all of our stakeholders, including institution leadership, for projecting inaccurate estimates to prospective students?
- How will the NPC integrate with and/or support our enrollment and financial aid strategies?

- Does our institution want an NPC on our Web site that gives away rights to the data collected and/or allows for the prospective student to be offered to the third-party lead generation market?
- Does our institution control access to the NPC, or is access to the NPC and comparative information available from third-party sites?

The most commonly considered NPC option, the federal template calculator, uses basic look-up tables that do not produce the degree of net price accuracy offered by advanced algorithmic calculators. In that context, an alternative NPC, built either in-house or with a third-party provider, is more likely to achieve the objectives of postsecondary institutions that:

- Discount tuition
- Base need aid estimates on an accurate EFC
- Offer merit aid to attract students
- Integrate financial aid questions into marketing programs
- Demonstrate affordability with loans and work-study programs
- Want to provide accurate aid and net price estimates

The best way for these institutions to demonstrate value is to use an NPC that captures institutional and student-specific nuances of need, merit and military aid-award packaging.

It is our summarizing observation that an accurate NPC can not only help support an institution's enrollment and financial aid goals, but also make a distinctly positive statement to prospective students. More specifically, we believe that for most institutions, an accurate NPC can encourage more students to seek admission.

About the Authors

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Bill joined Student Aid Services in 2010 after serving for three years as president of Think Ahead, LLC of Portland, Maine, which has been developing financial aid calculators for postsecondary institutions since 2000. Prior to that, he served as general manager of Coastal Metal Fab and as business manager for Chapman Corporation. Bill earned a bachelor's degree in economics from Williams College and a Master of Business Administration degree from Northwestern University.

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Carri has been advising colleges and universities nationwide about online financial aid calculators for the past nine years. Before joining Student Aid Services, Inc., she was the special projects manager for Think Ahead, LLC. Previously, she served for three years as a financial aid specialist for the University of New England, with an expertise in alternative loan financing. Carri graduated from Boston University with a bachelor's degree in psychology and a minor in business administration.

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Marc Alexander, Director of College Relations & Implementation, Student Aid Services, Inc.

Marc has been advising families about financial aid and how to pay for college for nearly 10 years. He works closely with the team, customizing Student Aid Services, Inc.'s net price calculator technology for institutions. Prior to his current role, Marc spent seven years managing a team of student aid advisors for Student Financial Aid Services, Inc., the nation's largest student aid advisory firm. He also has worked as an analyst for International Data Corporation, researching Latin America's technology and telecommunications markets. Marc earned a Bachelor of Arts degree in Spanish from the University of Colorado and an international Master of Business Administration degree from the University of South Carolina. He also spent a year in Mexico, studying at a leading university and working for a Fortune 500 company in Mexico City.

End Notes

- i Telephone interview David Pardieck March 24, 2010.
- ii The sample used for this analysis consisted of 145,490 students. For the 102,353 dependent students, 35% had a Pell-Eligible EFC. 33% of the dependent student households had an income of \$50,000 or less; 33% were between \$50,000 - \$100,000; and 34% had an income greater than \$100,000. For the 43,137 independent students, 67% had a Pell-Eligible EFC. 64% of the independent student households had an income of \$30,000 or less; 16% were between \$30,000 - \$50,000; and 20% had an income greater than \$50,000. To determine the degree of inaccuracy for a particular institution, we advise that institutions may want to conduct their own testing based on income or EFC distribution ranges that are consistent with their applicant or enrolled student population. Student Aid Services will be testing the federal template calculator with different income and EFC distributions for future versions of this analysis.
- iii The Higher Education Act of 2008, which amends Part C of title I (20 U.S.C. 1015) by adding §132. This citation is from §132 (h)(1).
- iv The Higher Education Act of 2008, which amends Part C of title I (20 U.S.C. 1015) by adding §132. This citation is from §132 (h)(1).
- v University Business: *Preparing for the Net Price Calculator: Avoid Potential Pitfalls by Taking These Steps Today* by Haley Chitty, October 2009.
- vi Telephone interview Mary Sapp March 19, 2010.
- vii Association for Institutional Research Net Price Calculator Resource Center <http://airweb.org/page.asp?page=2106>
- viii Telephone interview Mary Sapp March 19, 2010.
- ix Association for Institutional Research Net Price Calculator Resource Center <http://airweb.org/page.asp?page=2106>
- x Net Price Calculator Quick Start Guide http://nces.ed.gov/ipeds/netpricecalculator/Download/QuickStart_IE.pdf
- xi Association for Institutional Research Net Price Calculator Resource Center <http://airweb.org/page.asp?page=2106>
- xii Constructing the “Total Grant Aid” Look-Up Table: Preliminary Calculations and Complexity of Grant Aid Data by Lefter Daku, Ph.D., associate director of research and planning, Virginia Polytechnic Institute & State University, NASFAA national conference, San Antonio, Texas; July 12-15, 2009.
- xiii Association for Institutional Research Alert #38, April 2010
- xiv Association for Institutional Research Net Price Calculator Resource Center <http://airweb.org/page.asp?page=2106>
- xv Telephone interview Gregory Eichhorn March 23, 2010
- xvi The Net Price Calculator: Requirements and Customization Options, a March 2010 Webinar offered by Academic Illustrations featuring Mary Sapp, Ph.D., chair of the template’s Technical Review Panel and assistant vice president of planning and institutional research for the University of Miami, and Bill Smith, former president of Think Ahead, LLC.

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