

Experimental Instrument

This document contains the experimental instrument for “Budgeting, Psychological Contracts, and Budgetary Misreporting”. The instrument has three parts and is organized as follows:

Part 1

Screens 1 – 20:	Instructions
Screen 21:	Pre-experiment quiz
Screen 22:	End Part 1

Part 2

Screen 23:	Task overview
Screens 24 – 30:	Task – Example 1 (budget surplus)
Screens 31 – 37:	Task – Example 2 (budget deficit)
Screen 38:	Superior change memorandum
Screen 39:	End Part 2

Part 3

Screens 39 – 57:	Post-experiment questionnaire
Screen 58:	End Part 3

Participants complete ten periods of the experimental task. In each period, participants have either a budget surplus or budget deficit. We provide one example of a period in which a budget surplus exists and one example of a period in which a budget deficit exists. Example 1 (screens 24 – 30) illustrates a period in which participants have a budget surplus and must decide whether and how much of their budget surplus to anonymously donate to charity, while example 2 (screens 31 – 37) illustrates a period in which participants have a budget deficit and production stops.

After the first five experimental periods in one budgeting condition (i.e., after period 5 and before period 6), participants are informed that their superior will change. This information is communicated to participants in a memorandum (screen 38). Following this change, participants are either stay in the current budgeting condition or are assigned to a different budgeting condition for the remainder of the experimental periods.

After completing the experimental task, participants complete a post-experiment questionnaire (screens 39 – 58) and are paid for their participation approximately one week later.

Participant ID

Please enter your Participant ID in the space provided:

NOTE: This should be the same ID that you selected on your Consent Form at the start of today's simulation.

[Begin Simulation](#)

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Screen 2 (Instructions):

Navigation

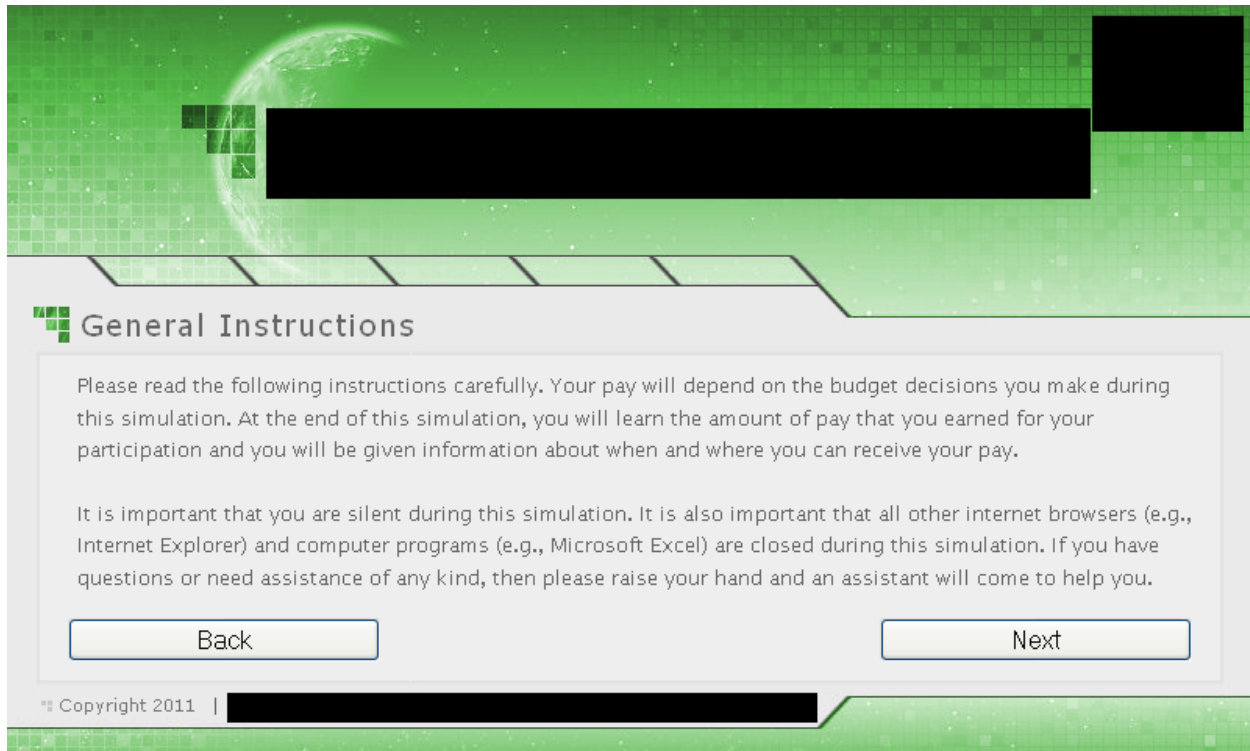
Welcome and thank you for participating in this decision-making simulation. During this simulation, there will be navigation buttons on each screen. It is important that you use only these navigation buttons to proceed to the next screen or to go back to the previous screen. **Please do not click the back button on your internet browser for any reason.** If you click the back button on your internet browser, then the record of your participation in this simulation will be lost and you will not be paid for your participation.

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Screen 3 (Instructions):



General Instructions

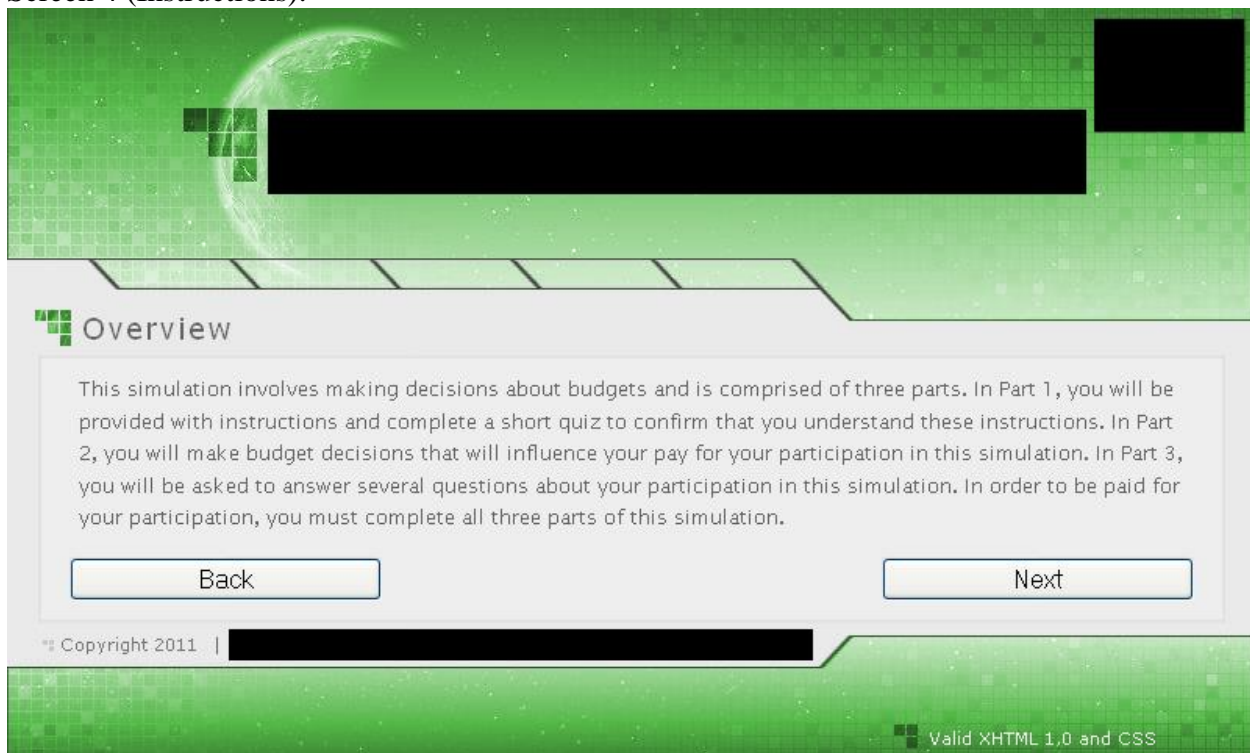
Please read the following instructions carefully. Your pay will depend on the budget decisions you make during this simulation. At the end of this simulation, you will learn the amount of pay that you earned for your participation and you will be given information about when and where you can receive your pay.

It is important that you are silent during this simulation. It is also important that all other internet browsers (e.g., Internet Explorer) and computer programs (e.g., Microsoft Excel) are closed during this simulation. If you have questions or need assistance of any kind, then please raise your hand and an assistant will come to help you.

[Back](#) [Next](#)

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Screen 4 (Instructions):



Overview

This simulation involves making decisions about budgets and is comprised of three parts. In Part 1, you will be provided with instructions and complete a short quiz to confirm that you understand these instructions. In Part 2, you will make budget decisions that will influence your pay for your participation in this simulation. In Part 3, you will be asked to answer several questions about your participation in this simulation. In order to be paid for your participation, you must complete all three parts of this simulation.

[Back](#) [Next](#)

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Screen 5 (Instructions):

Time Limit

There is no time limit for any part of this simulation. When you are finished with a part of this simulation, you can go to the next part by using the "Next" navigation button at the bottom of your computer screen. You must complete each part of this simulation before you can go to the next part. Once you have completed a part, you will **not** be able to return to it.

[Back](#) [Next](#)

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Screen 6 (Instructions):

Your Job

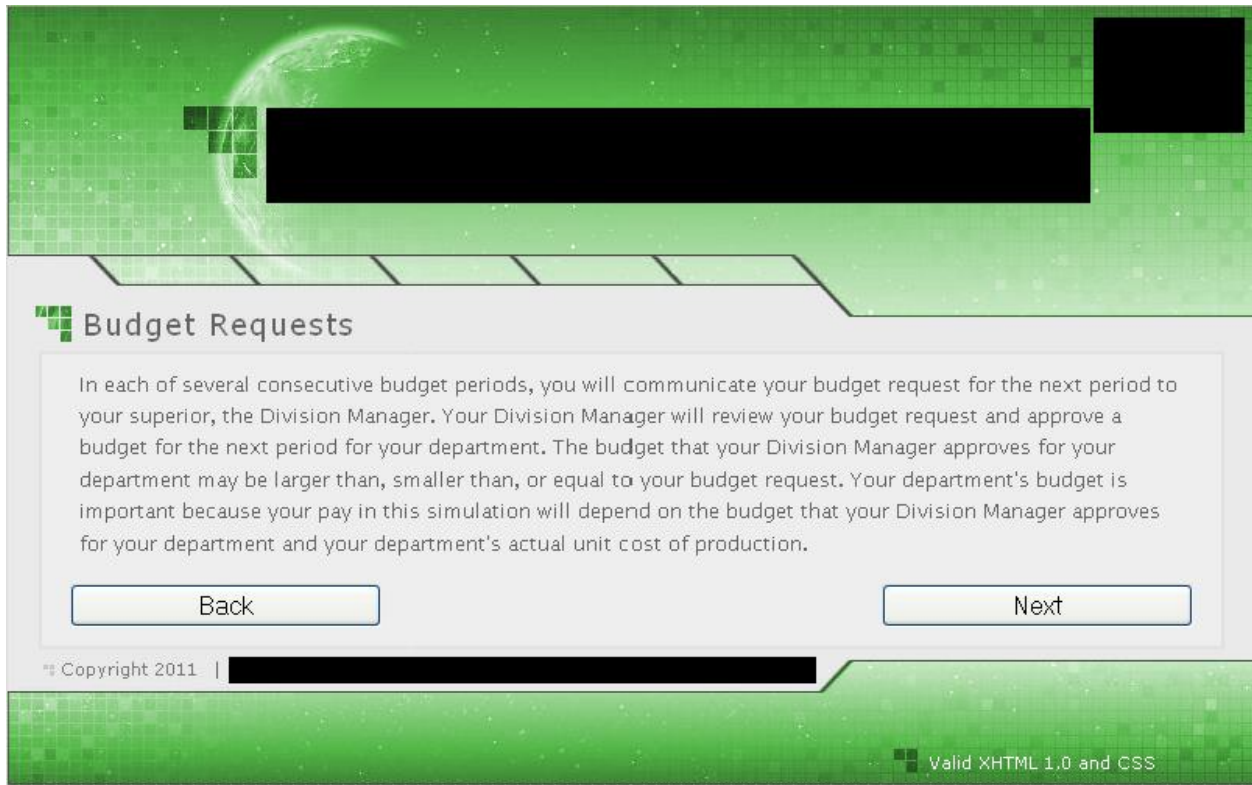
Assume that you are the Production Manager in a division of a firm. Resources are allocated to your department each period based on the expected cost of manufacturing one unit of your department's product. One of your most important job responsibilities therefore is to prepare a budget request for your department. A budget request includes the dollar amount of resources that you would like to receive in order to fund your department's production for the next period.

[Back](#) [Next](#)

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Screen 7 (Instructions):



Budget Requests

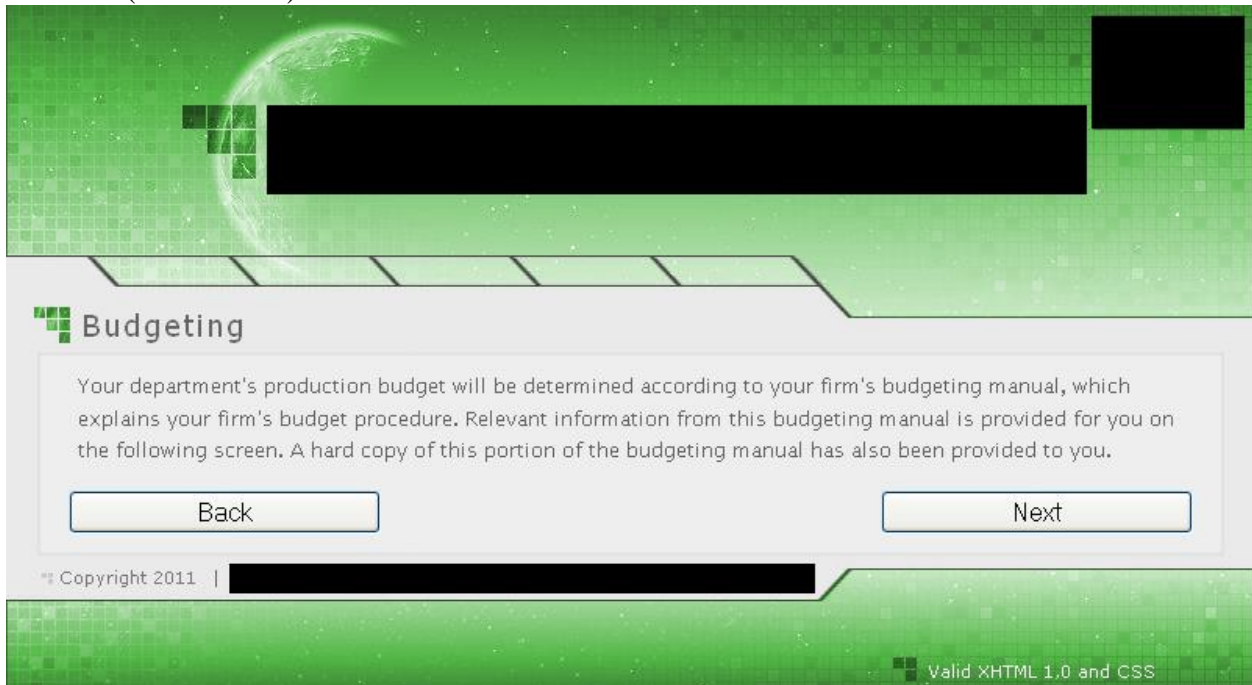
In each of several consecutive budget periods, you will communicate your budget request for the next period to your superior, the Division Manager. Your Division Manager will review your budget request and approve a budget for the next period for your department. The budget that your Division Manager approves for your department may be larger than, smaller than, or equal to your budget request. Your department's budget is important because your pay in this simulation will depend on the budget that your Division Manager approves for your department and your department's actual unit cost of production.

[Back](#) [Next](#)

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Screen 8 (Instructions):



Budgeting

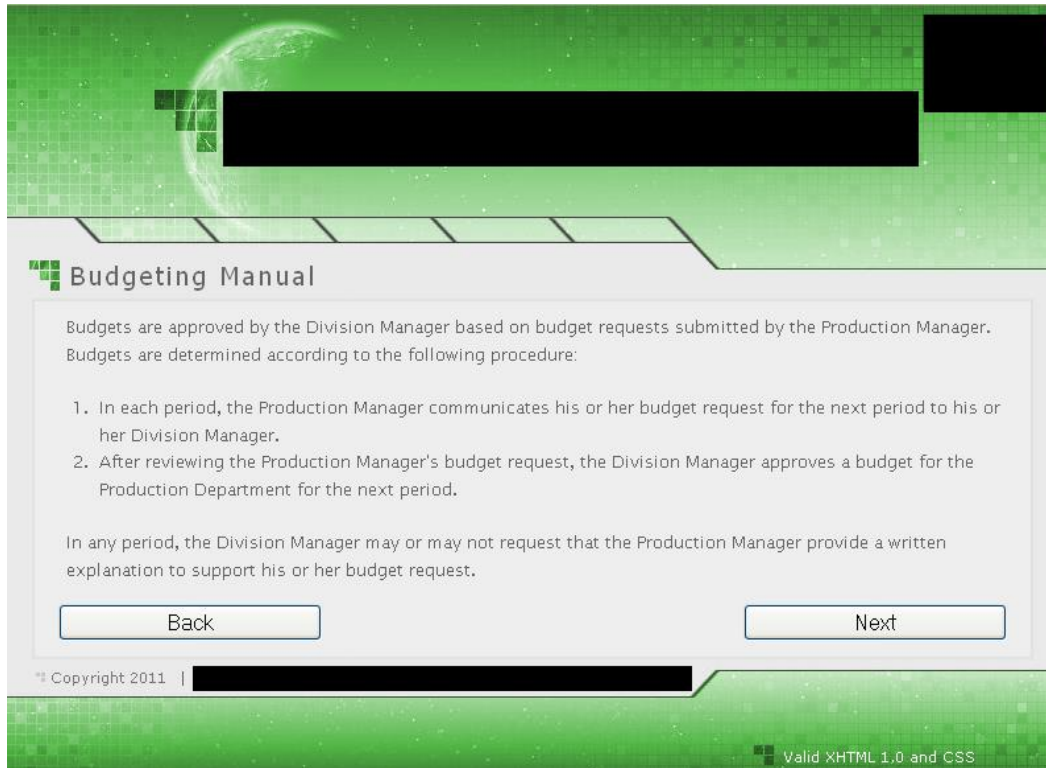
Your department's production budget will be determined according to your firm's budgeting manual, which explains your firm's budget procedure. Relevant information from this budgeting manual is provided for you on the following screen. A hard copy of this portion of the budgeting manual has also been provided to you.

[Back](#) [Next](#)

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Screen 9 (Instructions):



Budgeting Manual

Budgets are approved by the Division Manager based on budget requests submitted by the Production Manager. Budgets are determined according to the following procedure:

1. In each period, the Production Manager communicates his or her budget request for the next period to his or her Division Manager.
2. After reviewing the Production Manager's budget request, the Division Manager approves a budget for the Production Department for the next period.

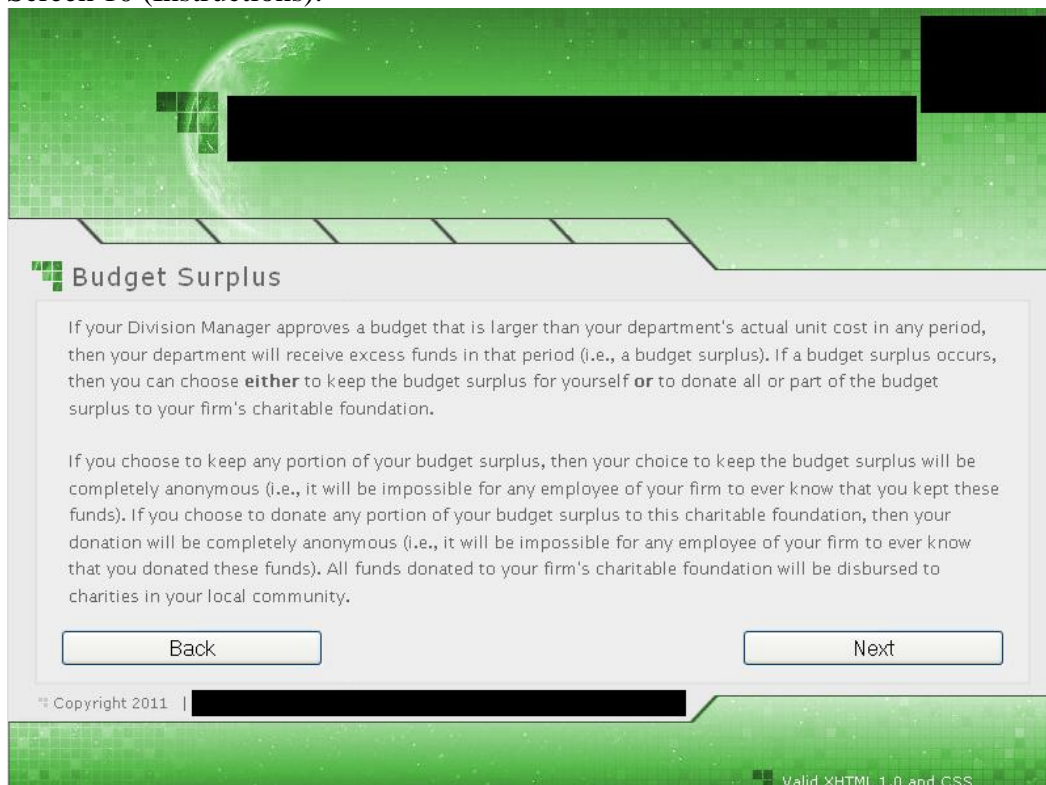
In any period, the Division Manager may or may not request that the Production Manager provide a written explanation to support his or her budget request.

[Back](#) [Next](#)

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Screen 10 (Instructions):



Budget Surplus

If your Division Manager approves a budget that is larger than your department's actual unit cost in any period, then your department will receive excess funds in that period (i.e., a budget surplus). If a budget surplus occurs, then you can choose **either** to keep the budget surplus for yourself **or** to donate all or part of the budget surplus to your firm's charitable foundation.

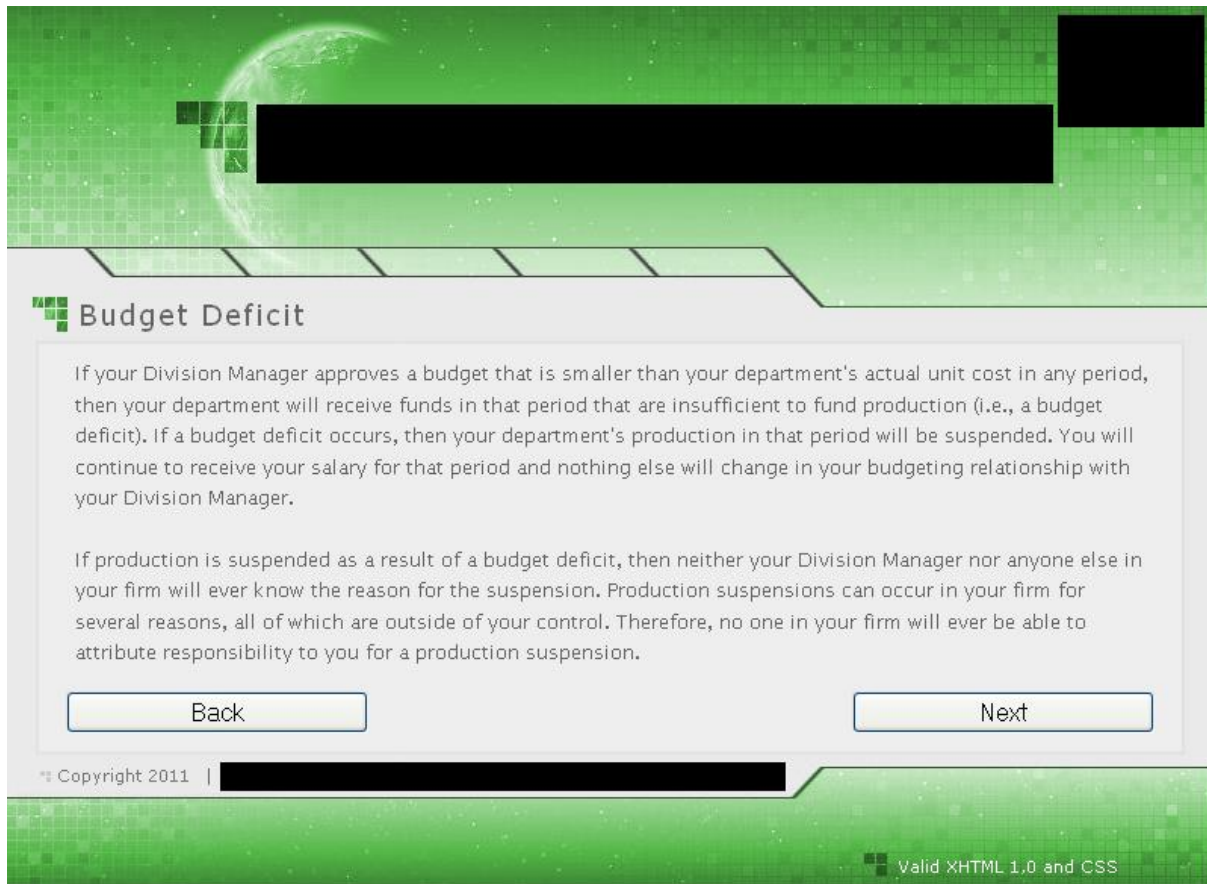
If you choose to keep any portion of your budget surplus, then your choice to keep the budget surplus will be completely anonymous (i.e., it will be impossible for any employee of your firm to ever know that you kept these funds). If you choose to donate any portion of your budget surplus to this charitable foundation, then your donation will be completely anonymous (i.e., it will be impossible for any employee of your firm to ever know that you donated these funds). All funds donated to your firm's charitable foundation will be disbursed to charities in your local community.

[Back](#) [Next](#)

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Screen 11 (Instructions):



Budget Deficit

If your Division Manager approves a budget that is smaller than your department's actual unit cost in any period, then your department will receive funds in that period that are insufficient to fund production (i.e., a budget deficit). If a budget deficit occurs, then your department's production in that period will be suspended. You will continue to receive your salary for that period and nothing else will change in your budgeting relationship with your Division Manager.

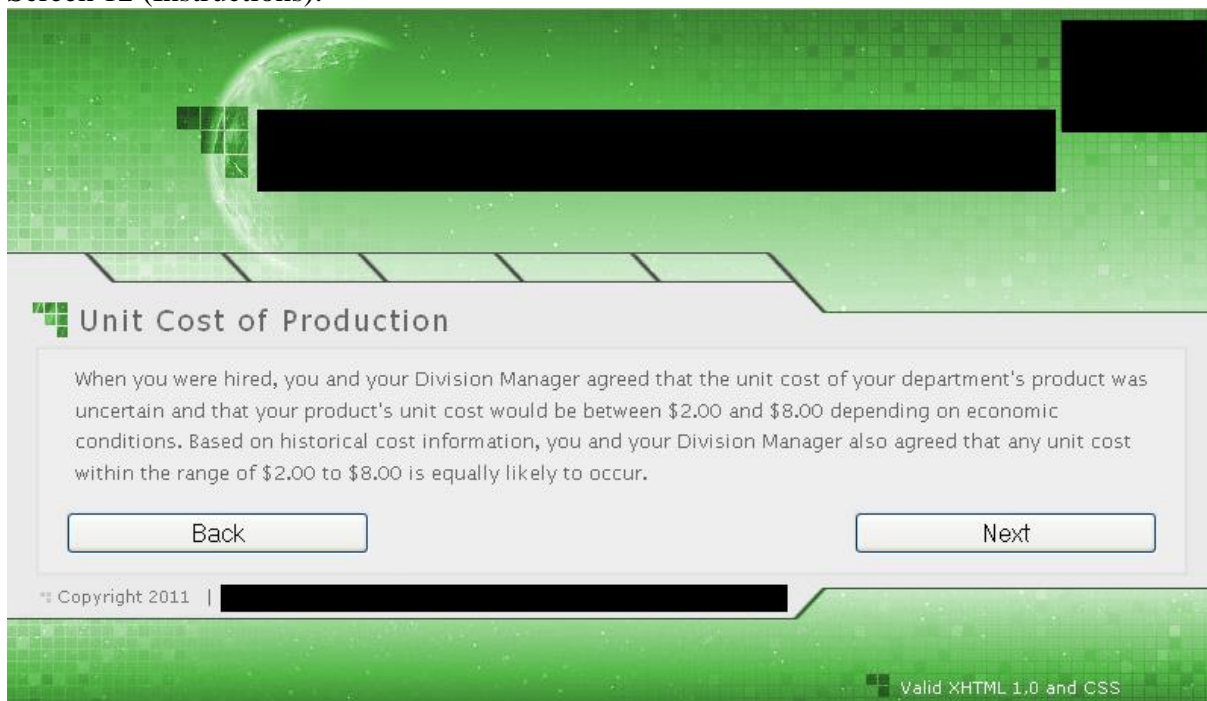
If production is suspended as a result of a budget deficit, then neither your Division Manager nor anyone else in your firm will ever know the reason for the suspension. Production suspensions can occur in your firm for several reasons, all of which are outside of your control. Therefore, no one in your firm will ever be able to attribute responsibility to you for a production suspension.

[Back](#) [Next](#)

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Screen 12 (Instructions):



Unit Cost of Production

When you were hired, you and your Division Manager agreed that the unit cost of your department's product was uncertain and that your product's unit cost would be between \$2.00 and \$8.00 depending on economic conditions. Based on historical cost information, you and your Division Manager also agreed that any unit cost within the range of \$2.00 to \$8.00 is equally likely to occur.

[Back](#) [Next](#)

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Screen 13 (Instructions):



Private Information

As a result of your knowledge and experience on this job, you have created your own private forecasting system that perfectly determines in the current period exactly what your product's unit cost will be in the next period. That is, before you communicate your budget request for the next period, you will know exactly what your department's actual unit cost will be for the next period.

Because you alone are responsible for communicating your department's budget request, you can decide whether to communicate a budget request that is equal to, more than, or less than your department's actual unit cost for the next period. Your Division Manager will know your budget request and the budget that he or she approves for your department, but your Division Manager will **never** know how much of your approved budget was spent on production versus how much (if any) budget surplus or deficit existed. That is, no employee of your firm besides yourself will **ever** be able to determine whether your budget request equaled your actual unit cost in any period. If production is suspended as a result of a budget deficit, then neither your Division Manager nor anyone else in your firm will ever know the reason for the suspension.

[Back](#)

[Next](#)

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Screen 14 (Instructions):



 Your Pay

Your pay for **each period** in this simulation will be either your salary of \$1.00 **or** your salary of \$1.00 plus the portion of your department's budget surplus that you choose to keep.

1. Your pay in any period will be your salary of \$1.00 when:
 - a. your department's approved budget equals its actual unit cost,
 - b. a budget deficit occurs, or
 - c. a budget surplus exists and you choose to donate your entire budget surplus to your firm's charitable foundation.
2. Your pay in any period will be your salary of \$1.00 plus the portion of your department's budget surplus that you choose to keep when a budget surplus exists and you choose to keep for yourself all or part of your budget surplus.

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Screen 15 (Instructions):

Examples

Four examples are provided on the following screens to help you understand your pay in this simulation. These examples assume that your private forecasting system has determined that your **actual unit cost** for the next period will be **\$6.00**. This means that when you prepare your budget request for the next period, you know for certain that your actual unit cost will be \$6.00, but your Division Manager knows only that your actual unit cost of a service is equally likely to be any cost within the range of \$2.00 to \$8.00 depending on economic conditions.

[Back](#) [Next](#)

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Screen 16 (Instructions):

Example 1: Budget = Actual

Assume that you communicate a budget request of \$6.00 per unit and your Division Manager approves a budget of \$6.00 per unit. This means that your firm will provide you with funds equal to \$6.00 per unit in order to fund production in the next period. In this example, there is neither a budget surplus nor a budget deficit because your approved budget of \$6.00 equals your actual unit cost of \$6.00. Your pay for the next period in this example is \$1.00, which is your salary of \$1.00 for that period.

[Back](#) [Next](#)

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Screen 17 (Instructions):

Example 2: Budget > Actual

Keep your entire budget surplus

Assume that you communicate a budget request of \$7.00 per unit and your Division Manager approves a budget of \$7.00 per unit. This means that your firm will provide you with funds equal to \$7.00 per unit in order to fund production in the next period. In this example, your approved budget of \$7.00 exceeds your actual unit cost of \$6.00 (i.e., a budget surplus exists).

Assume that you choose to anonymously keep your entire budget surplus. Your pay for the next period in this example is \$2.00, which is your salary of \$1.00 for that period plus \$1.00, which is the amount by which your approved budget of \$7.00 exceeds your actual cost of \$6.00. In this example, you are paid your salary and you keep for yourself the entire difference between your department's actual unit cost and your approved budget.

[Back](#) [Next](#)

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Screen 18 (Instructions):

Example 3: Budget > Actual

Donate your entire budget surplus

Assume that you communicate a budget request of \$7.00 per unit and your Division Manager approves a budget of \$7.00 per unit. This means that your firm will provide you with funds equal to \$7.00 per unit in order to fund production in the next period. In this example, your approved budget of \$7.00 exceeds your actual unit cost of \$6.00 (i.e., a budget surplus exists).

Assume that you choose to anonymously donate your entire budget surplus to your firm's charitable foundation. Your pay for the next period in this example is \$1.00, which is your salary of \$1.00 for that period. In this example, you are paid your salary and you anonymously donate the entire difference between your department's actual unit cost and its approved budget to your firm's charitable foundation.

[Back](#) [Next](#)

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Screen 19 (Instructions):



Example 4: Budget < Actual


Assume that you communicate a budget request of \$7.00 per unit and your Division Manager approves a budget of \$4.00 per unit. This means that your firm will provide you with funds equal to \$4.00 per unit in order to fund production in the next period. In this example, your approved budget of \$4.00 is less than your actual cost of \$6.00 (i.e., a budget deficit exists) and therefore your approved budget will be insufficient to fund production in the next period. Production in the next period will be suspended and your pay for the next period in this example is \$1.00, which is your salary of \$1.00 for that period.

[Back](#) [Next](#)

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Screen 20 (Instructions):



Summary

You have completed reading the instructions for this simulation. If you would like to review any part of the instructions, then use the "Back" button at the bottom of your computer screen to go back. If you understand the instructions and are ready to take the quiz about these instructions, then click the "Next" button at the bottom of your computer screen to continue.

[Back](#) [Next](#)

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Screen 21 (Pre-experiment quiz):



Quiz

1. In each budget period, you are required to communicate to your Division Manager:
 - a. A budget request for the next period.
 - b. The unit cost reported by your private forecasting system.
 - c. A range of unit costs of a service that represents your expectation of the maximum and minimum costs that you expect to incur in the next period.
 - d. Your department's actual unit cost of production in the previous period.
2. The budget that your Division Manager approves for your department:
 - a. Will always equal your budget request.
 - b. Will never equal your budget request.
 - c. May or may not equal your budget request.
3. Is the following statement true or false? Other employees in my firm will never have access to the information generated by my private forecasting system.
 - a. True
 - b. False
4. Is the following statement true or false? My department's actual unit cost for a period could be \$1.50.
 - a. True
 - b. False
5. Is the following statement true or false? My department's actual unit cost for a period could be \$8.70.
 - a. True
 - b. False
6. Which of the following best describes your department's actual unit cost in any period?
 - a. My department's actual unit cost in any period will always be larger than \$2.00.
 - b. My department's actual unit cost in any period will always be smaller than \$8.00.
 - c. My department's actual unit cost in any period is equally likely to be any cost within the range of \$2.00 to \$8.00.

[Screen 21 continued on following page]

[Screen 21 continued]

7. In which of the following scenarios would your pay exceed your salary?

- a. Your actual unit cost is smaller than your approved budget and you choose to donate all of the difference to your firm's charity.
- b. Your actual unit cost is smaller than your approved budget and you choose to keep some or all of the difference for yourself.
- c. Your actual unit cost is larger than your approved budget.
- d. Your actual unit cost equals your approved budget.

8. Given the following information, calculate your pay for a budget period.


Salary	\$1.00
Actual unit cost	\$4.00
Approved Budget	\$3.00

- a. \$1.00
- b. \$2.00
- c. \$3.00

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Screen 22 (End Part 1):



Congratulations

You have successfully completed Part 1 of this simulation.

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Screen 23 (Task Overview):

Overview

In Part 2 of this simulation, you will communicate with your Division Manager, Chris Johnson, over several consecutive budget periods. Your pay for each period and your cumulative pay will be displayed on your computer screen at the end of each budget period.

In each period, you will communicate your budget request for your department for the **next** period to your Division Manager, Chris. For example, in Period 1 you will submit your budget request for Period 2 and your pay for Period 2 will depend on your actual unit cost and approved budget for Period 2. In Period 2 you will submit your budget request for Period 3 and your pay for Period 3 will depend on your actual unit cost and approved budget for Period 3.

[Enter Budget Periods](#)

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Screen 24 (Task – Example 1 – Budget Surplus Period):

Period 1 - Private Forecasting System

You are preparing your budget for Period 2. Your private forecasting system reports that your unit cost in Period 2 will be exactly:

\$2.75

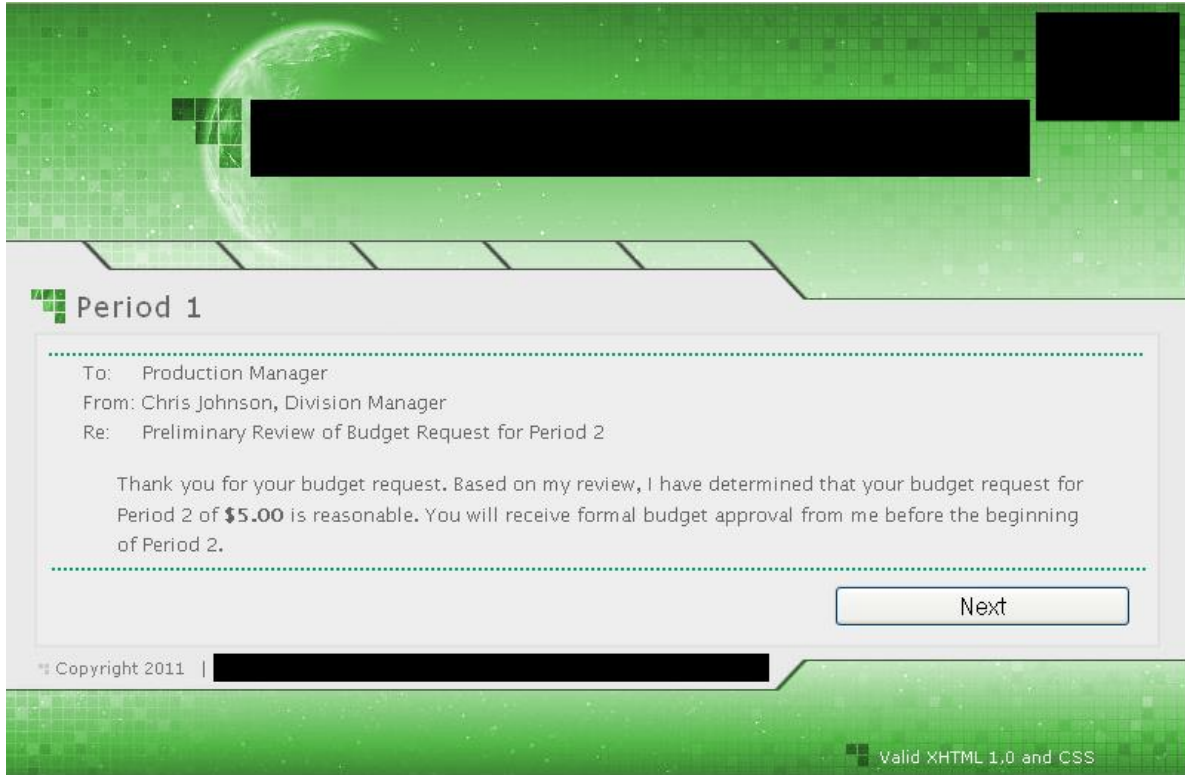
Your Division Manager, Chris Johnson, knows that your product's unit cost in Period 2 is equally likely to be between \$2.00 and \$8.00 depending on economic conditions, but Chris will never know your product's actual unit cost.

[Next](#)

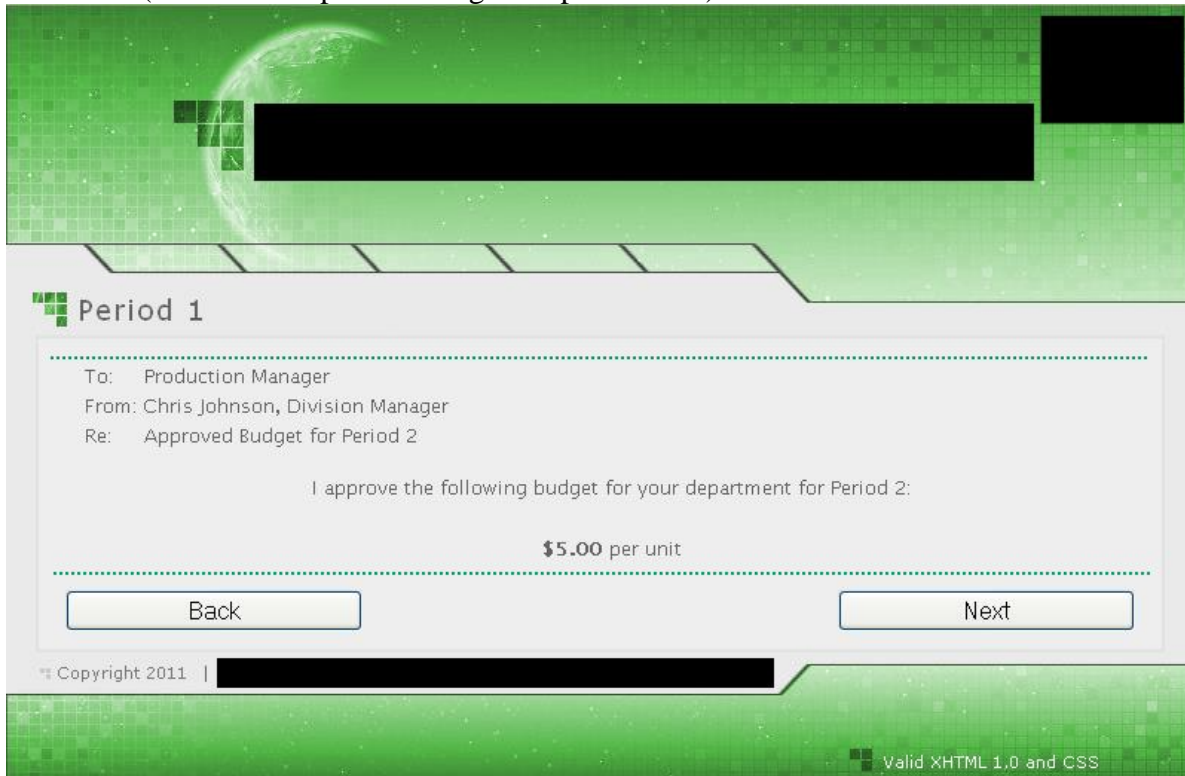
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Screen 25 (Task – Example 1 – Budget Surplus Period):



Screen 27 (Task – Example 1 – Budget Surplus Period):



Screen 28 (Task – Example 1 – Budget Surplus Period):

The screenshot shows a web interface with a green background and a globe graphic. The main content area is titled "Budget vs. Actual for Period 2" and contains the following information:

Actual cost (from private forecasting system)	=	\$2.75
Approved budget	=	\$5.00
Budget Surplus	=	\$2.25

Below the table are two buttons: "Back" and "Next". At the bottom left, there is a copyright notice: "© Copyright 2011 | [redacted]". At the bottom right, there is a validation notice: "Valid XHTML 1.0 and CSS".

Screen 29 (Task – Example 1 – Budget Surplus Period):

The screenshot shows a web interface with a green background and a globe graphic. The main content area is titled "Donation Decision" and contains the following text:

You now have the opportunity to anonymously donate your budget surplus for Period 2 to your firm's charitable foundation. Please decide whether to donate your budget surplus of \$2.25 to your firm's charitable foundation.

- DONATE ALL** of my budget surplus to this charity.
- DONATE NONE** of my budget surplus to this charity – I choose to keep the entire budget surplus for myself.
- DONATE PART** of my budget surplus to this charity.

I would like to donate % of my budget surplus to this charity.

Below the text are two buttons: "Back" and "Next". At the bottom left, there is a copyright notice: "© Copyright 2011 | [redacted]". At the bottom right, there is a validation notice: "Valid XHTML 1.0 and CSS".

Screen 30 (Task – Example 1 – Budget Surplus Period):

Your pay for Period 2 is \$3.25

Your pay is your salary of **\$1.00** plus **\$2.25**, which is the amount of your department's Period 2 budget surplus that you chose to keep.

Your cumulative pay through this period is \$3.25

[Click to Enter Next Budget Period](#)

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Screen 31 (Task – Example 2 – Budget Deficit Period):

Period 2 - Private Forecasting System

You are preparing your budget for Period 3. Your private forecasting system reports that your unit cost in Period 3 will be exactly:

\$7.50

Your Division Manager, Chris Johnson, knows that your product's unit cost in Period 3 is equally likely to be between \$2.00 and \$8.00 depending on economic conditions, but Chris will never know your product's actual unit cost.

[Next](#)

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Screen 32 (Task – Example 2 – Budget Deficit Period):

Period 2

To: Production Manager
From: Chris Johnson, Division Manager
Re: Budget Request for Period 3

Please complete the following budget request form.

My budget request for my department for Period 3 is:

\$

(Enter a positive number using two decimals: e.g. 2.87)

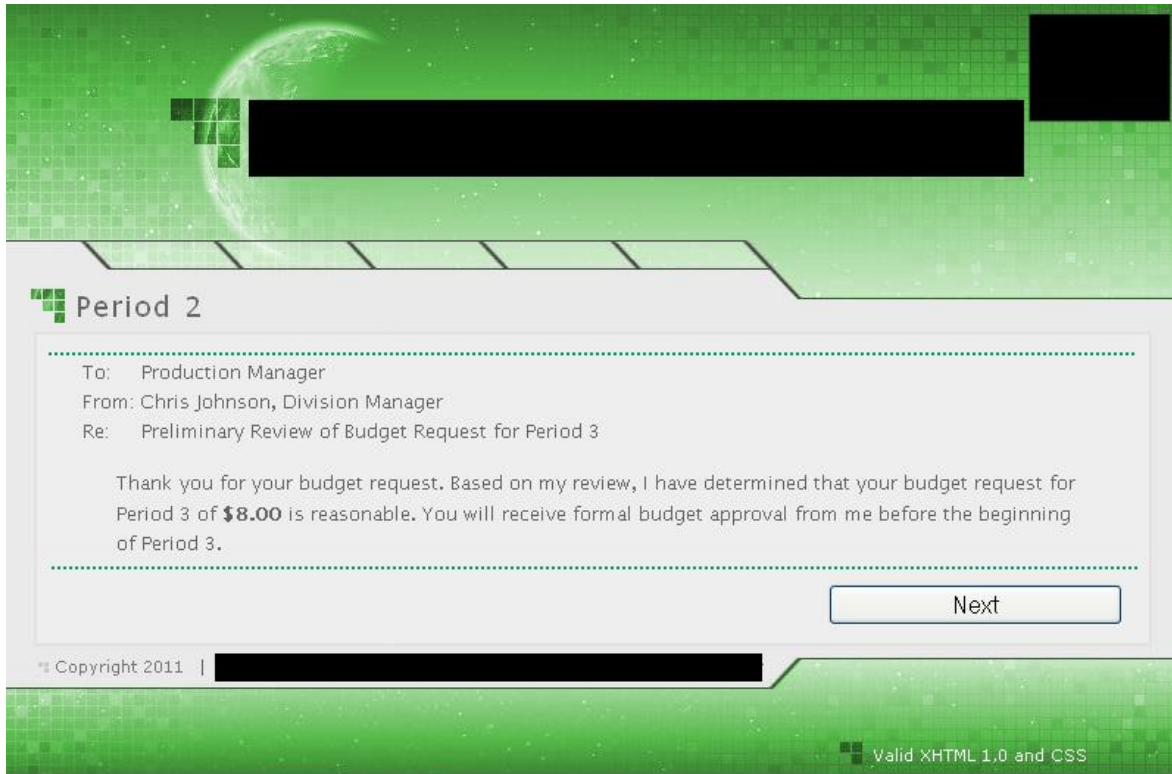
If you would like to review your private forecasting system's cost information, then click the "Back" button below. Otherwise, click the "Submit Budget Request" button below to submit your budget request. Once you have submitted your budget request you will not be able to revise it.

[Back](#) [Submit Budget Request](#)

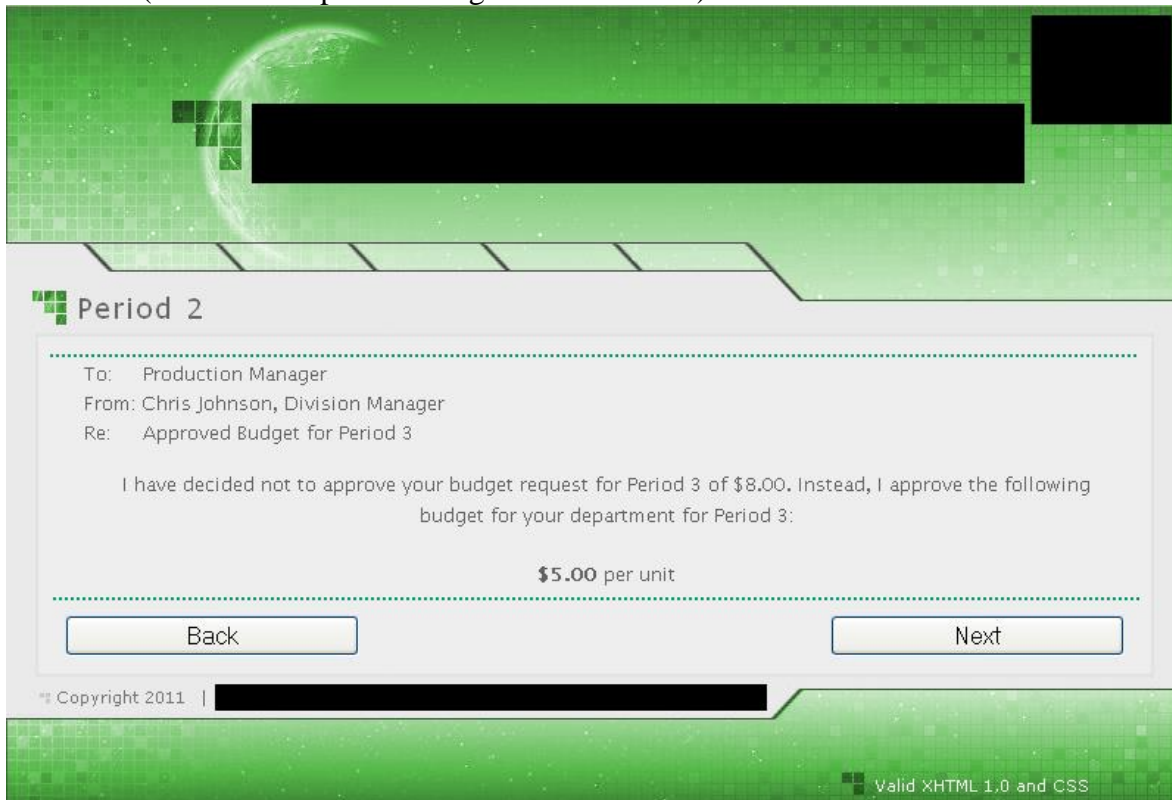
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Screen 33 (Task – Example 2 – Budget Deficit Period):



Screen 34 (Task – Example 2 – Budget Deficit Period):



Screen 35 (Task – Example 2 – Budget Deficit Period):

The screenshot shows a web application interface with a green background and a globe graphic. The main content area is titled "Budget vs. Actual for Period 3" and contains the following information:

Actual cost (from private forecasting system)	=	\$7.50
Approved budget	=	\$5.00
Budget Deficit	=	\$2.50

Below the table are two buttons: "Back" and "Next".

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Screen 36 (Task – Example 2 – Budget Deficit Period):

The screenshot shows a web application interface with a green background and a globe graphic. The main content area is titled "Production Suspension" and contains the following text:

Your private information system has revealed to you that you have a budget deficit for Period 3. Therefore, your department's production will be suspended for Period 3. Recall that no employee of your firm will ever know the reason for this production suspension. There are no consequences of this production suspension for you as Production Manager and you will continue to receive your salary of \$1.00 for Period 3.

Below the text are two buttons: "Back" and "Next".

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Screen 37 (Task – Example 2 – Budget Deficit Period):

Your pay for Period 3 is \$1.00

Your pay is your salary of **\$1.00** because your department's approved budget for Period 3 was smaller than your department's actual unit cost in Period 3.

Your cumulative pay through this period is \$4.25

[Click to Enter Next Budget Period](#)

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Screen 38 (Task – Supervisor Change Memorandum):

Memo

To: Production Manager
From: Headquarters
Re: Division Manager Position

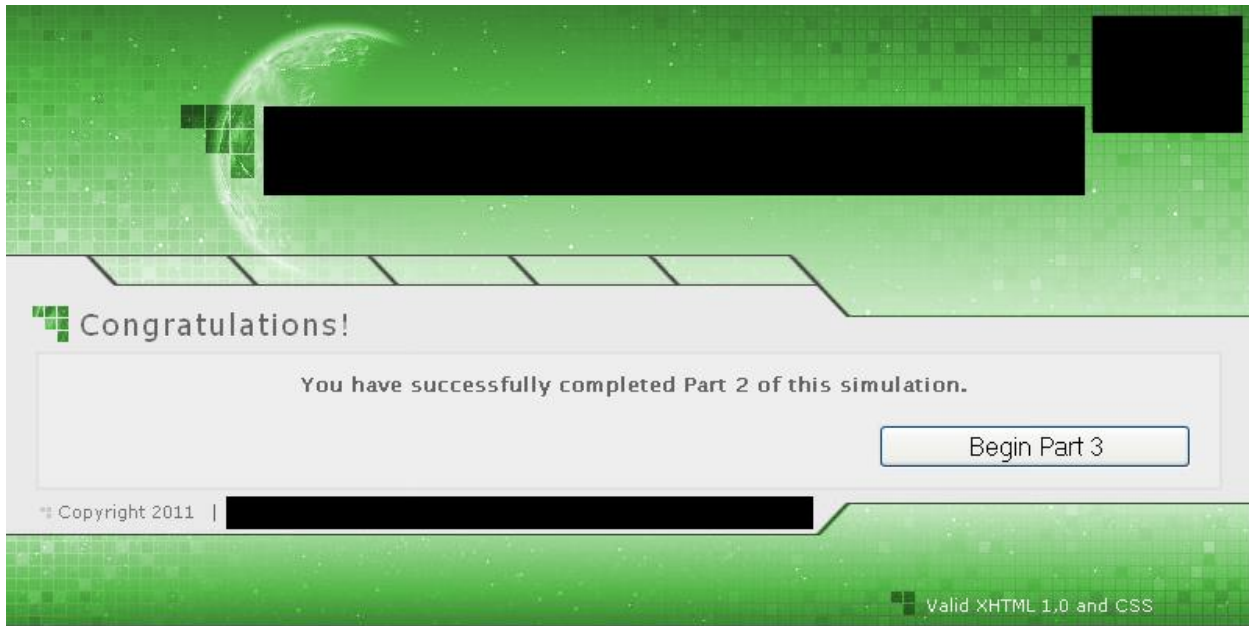
Effective immediately, your Division Manager, Chris Johnson, has been replaced. Your new Division Manager is Pat Smith. You will now communicate with your new Division Manager, Pat Smith, to determine your department's budget.

[Click to Continue](#)

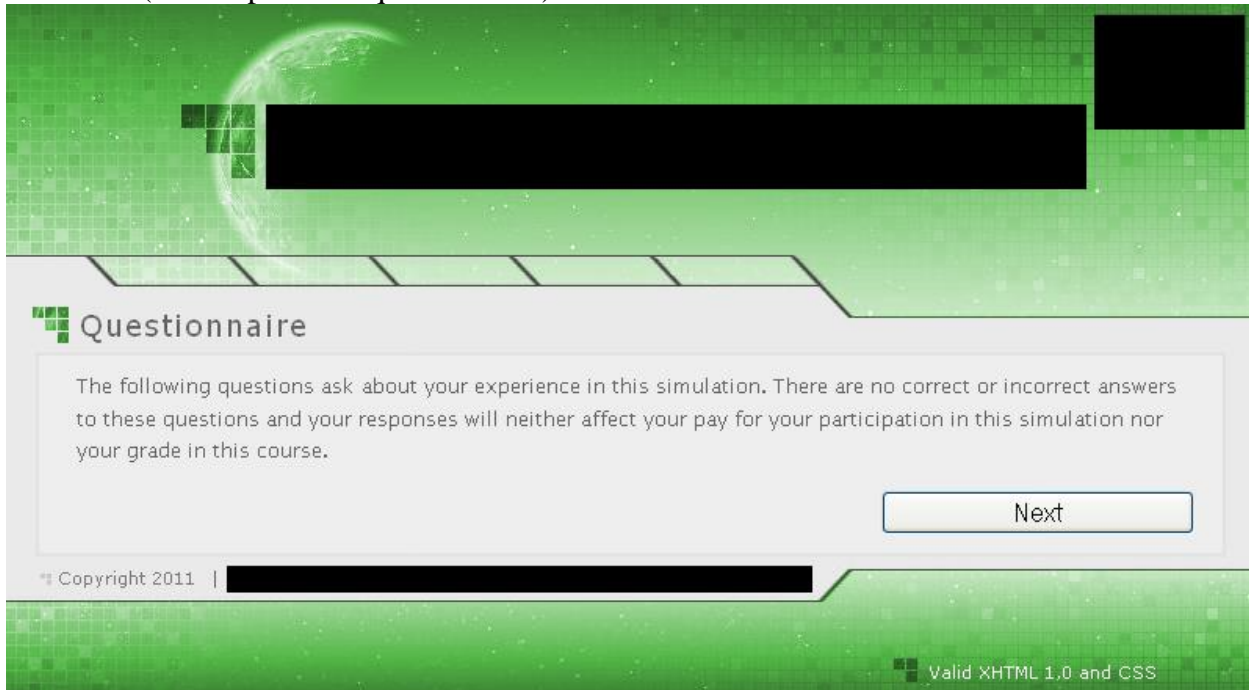
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Screen 39 (End Part 2):



Screen 40 (Post-experiment questionnaire):



Screen 41 (Post-experiment questionnaire):

1. To what extent did you believe that you were **involved** in budgeting when you worked under your **first** division manager, Chris Johnson?

Extremely Uninvolved 1 2 3 4 5 6 7 Extremely Involved

2. To what extent did you believe that you were **involved** in budgeting when you worked under your **second** division manager, Pat Smith?

Extremely Uninvolved 1 2 3 4 5 6 7 Extremely Involved

Next

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Screen 42 (Post-experiment questionnaire):

3. To what extent did your budget requests **influence** your **first** Division Manager, Chris Johnson's, budget approval decisions?

No influence 1 2 3 4 5 6 7 Extreme influence

4. To what extent did your budget requests **influence** your **second** Division Manager, Pat Smith's, budget approval decisions?

No influence 1 2 3 4 5 6 7 Extreme influence

Next

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Screen 43 (Post-experiment questionnaire):

5. To what extent did your **first** Division Manager, Chris Johnson, fulfill his or her obligations to you?

1 2 3 4 5 6 7

Not at all fulfilled Completely fulfilled

6. To what extent did your **second** Division Manager, Pat Smith, fulfill his or her obligations to you?

1 2 3 4 5 6 7

Not at all fulfilled Completely fulfilled

Next

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Screen 44 (Post-experiment questionnaire):

7. To what extent did your **first** Division Manager, Chris Johnson, keep his or her promises to you?

1 2 3 4 5 6 7
Not at all Completely

8. To what extent did your **second** Division Manager, Pat Smith, keep his or her promises to you?

1 2 3 4 5 6 7
Not at all Completely

Next

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Screen 45 (Post-experiment questionnaire):

9. I would continue my employment with my firm if I were to work under the supervision of my **first** Division Manager, Chris Johnson.

1 2 3 4 5 6 7

Strongly Agree Strongly Disagree

10. I would continue my employment with my firm if I were to work under the supervision of my **second** Division Manager, Pat Smith.

1 2 3 4 5 6 7

Strongly Agree Strongly Disagree

Next

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Screen 46 (Post-experiment questionnaire):

11. How much **effort** did you exert (i.e., how hard did you think) in order to decide your dollar budget request under your **first** Division Manager, Chris Johnson?

1 2 3 4 5 6 7
No effort Extreme effort

12. How much **effort** did you exert (i.e., how hard did you think) in order to decide your dollar budget request under your **second** Division Manager, Pat Smith?

1 2 3 4 5 6 7
No effort Extreme effort

Next

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Screen 47 (Post-experiment questionnaire):

13. How much **effort** did you exert (i.e., how hard did you think) in order to make the written explanation of your budget request persuasive to your **first** Division Manager, Chris Johnson?

No effort 1 2 3 4 5 6 7 Extreme effort

14. How much **effort** did you exert in order to make the written explanation of your budget request persuasive to your **second** Division Manager, Pat Smith?

1 2 3 4 5 6 7


No effort Extreme effort

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Screen 48 (Post-experiment questionnaire):



15. To what extent did you change how you determined your dollar budget requests when your Division Manager changed?

1 2 3 4 5 6 7


No change Extreme change

16. Did you change how you determined your dollar budget request when you had to provide a written explanation for this request? (Choose one)

No

Yes

If "Yes", then how did providing a written explanation affect your dollar budget request?

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Screen 49 (Post-experiment questionnaire):



Screen 50 (Post-experiment questionnaire):

18. Allocate 100 points to the factors below that influenced your budget requests under your **first** Division Manager, Chris Johnson. Allocate more points to factors that had more influence on your requests and assign fewer points to factors that had less influence on your requests.

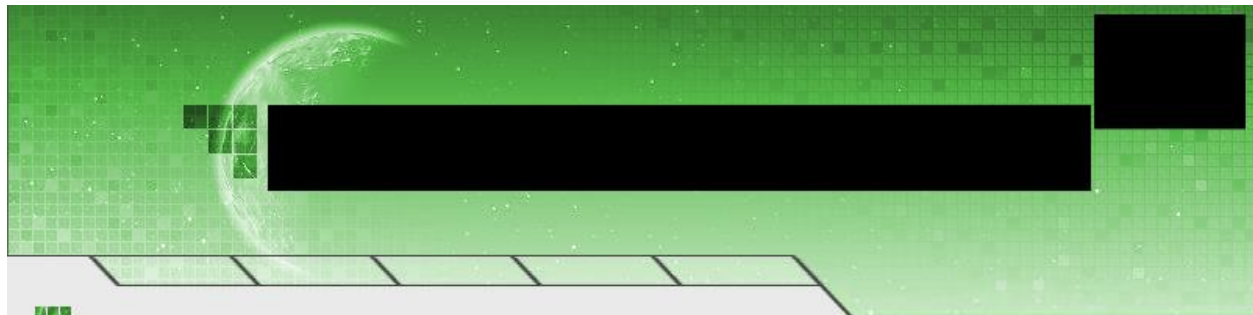
<input type="text" value="0"/>	I believed that honesty is important in all circumstances
<input type="text" value="0"/>	I believed that being dishonest is a justifiable response to others' dishonesty
<input type="text" value="0"/>	I wanted to punish my Division Manager for his or her dishonesty
<input type="text" value="0"/>	I wanted to reward my Division Manager for his or her honesty
<input type="text" value="0"/>	I wanted to withhold information from my Division Manager
<input type="text" value="0"/>	I wanted to earn money to donate to my firm's charity
<input type="text" value="0"/>	I wanted to maximize my pay
<input type="text" value="0"/>	I wanted to earn a specific dollar amount of pay
<input type="text" value="0"/>	I wanted to report the information from my private forecasting system
<input type="text" value="0"/>	I was indifferent to the budget request that I submitted
<input type="text" value="0"/>	I was angry with my Division Manager
<input type="text" value="0"/>	I was happy with my Division Manager
<input type="text" value="0"/>	Other: <input type="text"/>
<input type="text" value="0"/>	Total

Next

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Screen 51 (Post-experiment questionnaire):



19. Allocate 100 points to the factors below that influenced your budget requests under your **second** Division Manager, Pat Smith. Allocate more points to factors that had more influence on your requests and assign fewer points to factors that had less influence on your requests.

<input type="text" value="0"/>	I believed that honesty is important in all circumstances
<input type="text" value="0"/>	I believed that being dishonest is a justifiable response to others' dishonesty
<input type="text" value="0"/>	I wanted to punish my Division Manager for his or her dishonesty
<input type="text" value="0"/>	I wanted to reward my Division Manager for his or her honesty
<input type="text" value="0"/>	I wanted to withhold information from my Division Manager
<input type="text" value="0"/>	I wanted to earn money to donate to my firm's charity
<input type="text" value="0"/>	I wanted to maximize my pay
<input type="text" value="0"/>	I wanted to earn a specific dollar amount of pay
<input type="text" value="0"/>	I wanted to report the information from my private forecasting system
<input type="text" value="0"/>	I was indifferent to the budget request that I submitted
<input type="text" value="0"/>	I was angry with my Division Manager
<input type="text" value="0"/>	I was happy with my Division Manager
<input type="text" value="0"/>	Other: <input type="text"/>
<input type="text" value="0"/>	Total

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Screen 52 (Post-experiment questionnaire):

20. To what extent do you believe that your **first** Division Manager, Chris Johnson, was **honest**?

1 2 3 4 5 6 7

Completely honest Completely dishonest

21. To what extent do you believe that your **second** Division Manager, Pat Smith, was **honest**?

1 2 3 4 5 6 7

Completely honest Completely dishonest

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Screen 53 (Post-experiment questionnaire):

22. To what extent did you **trust** your **first** Division Manager, Chris Johnson?

1 2 3 4 5 6 7

Completely trust Completely distrust

23. To what extent did you **trust** your **second** Division Manager, Pat Smith?

1 2 3 4 5 6 7

Completely trust Completely distrust

Next

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Screen 54 (Post-experiment questionnaire):

24. To what extent do you believe that your department's approved budgets were **fair** under your **first** Division Manager, Chris Johnson?

1 2 3 4 5 6 7
Extremely unfair Extremely fair

25. To what extent do you believe that your department's approved budgets were **fair** under your **second** Division Manager, Pat Smith?

1 2 3 4 5 6 7
Extremely unfair Extremely fair

Next

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Screen 55 (Post-experiment questionnaire):

26. How **happy** would you be to work under the supervision of your **first** Division Manager, Chris Johnson?

1 2 3 4 5 6 7
Extremely unhappy Extremely happy

27. How **happy** would you be to work under the supervision of your **second** Division Manager, Pat Smith?

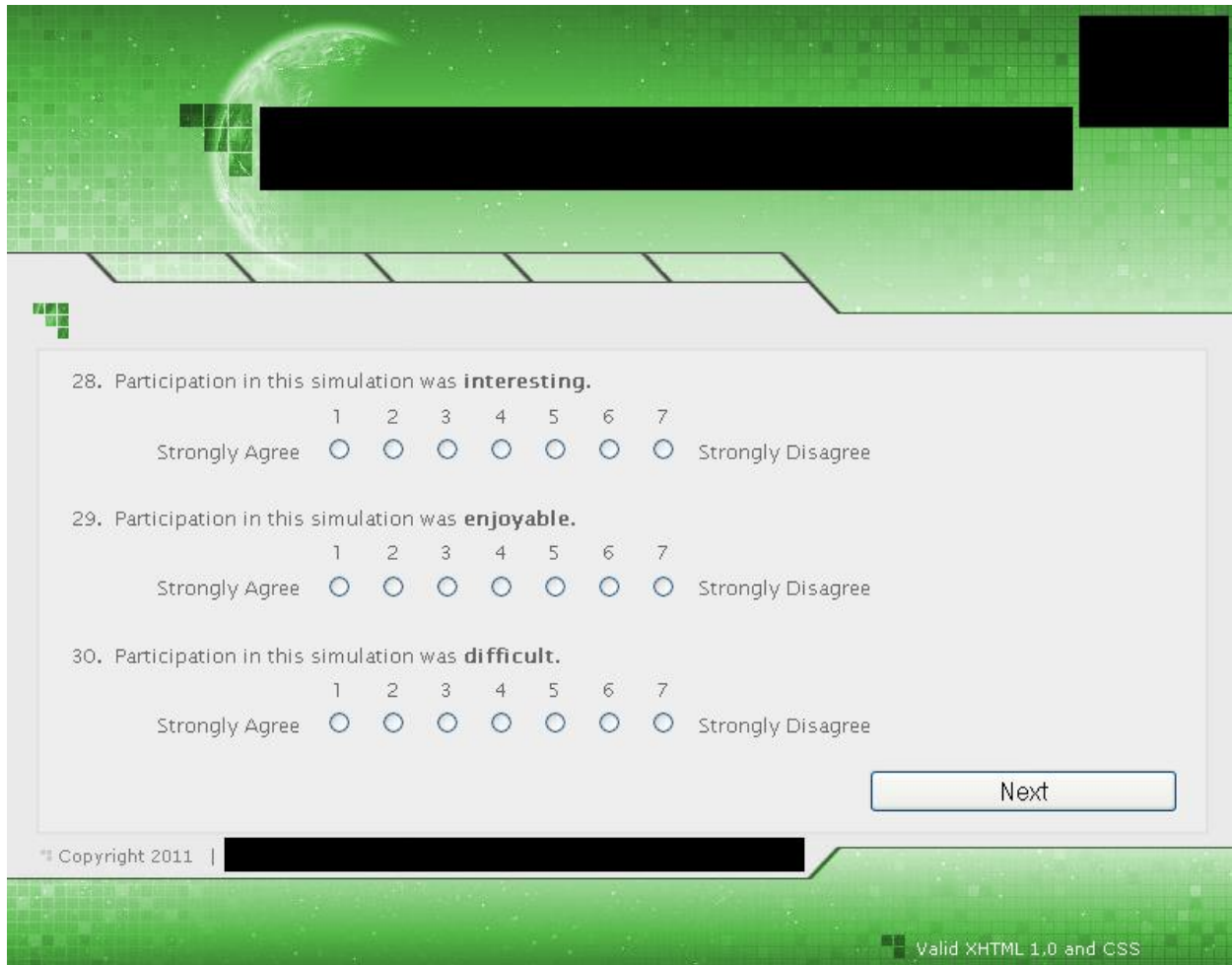
1 2 3 4 5 6 7
Extremely unhappy Extremely happy

Next

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Screen 56 (Post-experiment questionnaire):



28. Participation in this simulation was **interesting**.

1 2 3 4 5 6 7

Strongly Agree Strongly Disagree

29. Participation in this simulation was **enjoyable**.

1 2 3 4 5 6 7

Strongly Agree Strongly Disagree

30. Participation in this simulation was **difficult**.

1 2 3 4 5 6 7

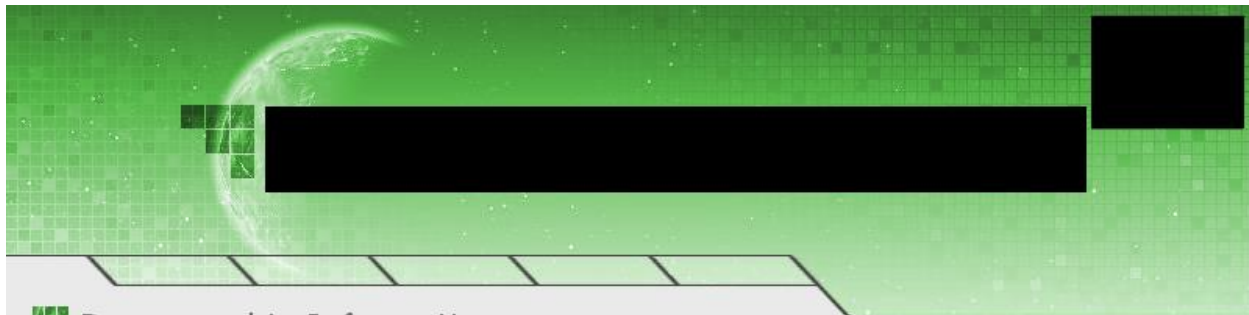
Strongly Agree Strongly Disagree

Next

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Screen 57 (Post-experiment questionnaire):



Demographic Information

1. How many months of post-baccalaureate work experience do you have?
 months
2. How many months of post-baccalaureate work experience with budgeting do you have as a **subordinate** manager?
 months
(If you have no experience, then please enter "0".)
3. How many months of post-baccalaureate work experience with budgeting do you have as a **superior** manager?
 months
(If you have no experience, then please enter "0".)
4. If you have post-baccalaureate work experience with budgeting as a **subordinate** manager, then to what extent was your experience in this simulation with your **first** Division Manager, Chris Johnson, similar to your work experience?
Extremely Dissimilar 1 2 3 4 5 6 7 Extremely Similar
5. If you have post-baccalaureate work experience with budgeting as a **subordinate** manager, then to what extent was your experience in this simulation with your **second** Division Manager, Pat Smith, similar to your work experience?
Extremely Dissimilar 1 2 3 4 5 6 7 Extremely Similar
6. What is your gender?
 Male
 Female
7. Are you a U.S. citizen or permanent resident? (Choose one)
 Yes
 No
If you answered "No", then what is your country of citizenship?

Finish

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Screen 58 (End Part 3):



Congratulations!

You have successfully completed all parts of this simulation.

Thank you for your participation!

Your total pay for your participation in today's simulation is **\$12.95**. Don't forget to take payment instructions with you when you leave.

Please remember that your Participant ID was eriueryr.

Please close your internet browser now.

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Budgeting, Psychological Contracts, and Budgetary Misreporting

ONLINE APPENDIX B

The set of tables included in this online appendix report the results of the same analyses reported in the corresponding tables in the paper. The analysis contains a subsample of observations obtained by eliminating respondents that in at least one period requested budget allocations lower than their actual costs or greater than the maximum allowed cost. There are a total of 26 individuals that fall into this group, and they are distributed as follows with respect to the budgeting conditions assigned in Round 1: 8 in the authoritative condition, 15 in the consultative condition, 3 in the affirmative condition.

Table B.1 Effect of Budgeting Type on Budgetary Misreporting

Panel A: Mean (standard deviation) percentage of misreporting by type of budgeting for periods 2 – 5 (pooled sample)

	Period 2	Period 3	Period 4	Period 5	Overall
Authoritative (A) (n=36)	0.309 (0.353)	0.400 (0.390)	0.336 (0.324)	0.352 (0.403)	0.349 (0.366)
Consultative (C) (n=40)	0.485 (0.344)	0.544 (0.359)	0.491 (0.371)	0.540 (0.362)	0.515 (0.357)
Affirmative (F) (n=34)	0.250 (0.294)	0.248 (0.303)	0.235 (0.270)	0.327 (0.344)	0.265 (0.303)
Overall (n=110)	0.355 (0.345)	0.405 (0.371)	0.361 (0.341)	0.413 (0.380)	0.383 (0.359)

Panel B: Repeated Measures Analysis of Variance: comparing percentage of budgetary misreporting in each budgeting condition

Factor	df	Sum of Squares	<i>F</i>	<i>p</i> (two-tailed)
Between-Subjects				
<i>Budgeting</i>	2	2.455	10.26	<0.001
<i>Error</i>	422			
Within-Subjects				
<i>Period</i>	3	0.208	0.58	>0.100
<i>Gender</i>	1	0.004	0.04	>0.100
<i>Period * Budgeting</i>	6	0.167	0.23	>0.100
<i>Gender * Budgeting</i>	2	0.751	3.14	<0.050
<i>Gender * Period</i>	3	0.024	0.07	>0.100

Notes. Panel A reports the mean budgetary misreporting under authoritative (A), consultative (C), and affirmative (F) budgeting. Panel B reports the significance of differences in mean budgetary misreporting among the three types of budgeting. The base case corresponds to the affirmative budgeting condition (F). Tests of statistical significance in Panel B are from a repeated measures analysis of variance in which budgeting type is a between-subjects factor with 3 levels (A, C, P), period is a within-subjects factor with 4 levels (periods 2 – 5), and %MISREPORTING in periods 2 – 5 is the dependent variable computed as: $(\sum_{i=1}^n \text{Budgetary slack claimed} \div \sum_{i=1}^n \text{Maximum available budgetary slack})$. Gender is a binary variable that assumes the value of 1 if the participant is male, and 0 otherwise. All *p*-values are two-tailed.

Table B.2 Effect of Budgeting Type on Psychological Contract Breach

Panel A: Mean (standard deviation) response to post-experimental questions about the first-round and second-round supervisor for each type of budgeting (n=110)

	First Round Supervisor			Second Round Supervisor		
	Authoritative (A)	Consultative (C)	Affirmative (F)	Authoritative (A)	Consultative (C)	Affirmative (F)
To what extent did your Division Manager fulfill his or her obligations to you? (1=Not at all, 7=Completely)	3.278 (1.542)	3.850 (1.626)	6.088 (1.524)	2.875 (1.476)	3.326 (1.614)	6.086 (1.147)
To what extent did your Division Manager keep his or her promises to you? (1=Not at all, 7=Completely)	3.583 (1.645)	3.650 (1.847)	6.054 (1.508)	2.906 (1.510)	3.558 (1.763)	6.114 (1.430)
To what extent do you believe that your Division Manager was honest? (1=Completely Honest, 7=Completely Dishonest)	4.056 (1.433)	3.975 (1.476)	2.705 (1.732)	4.344 (1.451)	4.372 (1.480)	3.400 (1.881)
To what extent did you trust your Division Manager? (1=Completely Trust, 7=Completely Distrust)	3.944 (1.566)	4.225 (1.577)	2.471 (1.674)	4.719 (1.611)	4.791 (1.552)	3.200 (1.762)
To what extent do you believe that your department's approved budgets were fair under your Division Manager? (1= Extremely Unfair, 7 = Extremely Fair)	3.611 (1.609)	4.000 (1.709)	5.559 (1.521)	3.031 (1.402)	3.442 (1.680)	5.457 (1.421)
I would continue my employment with this firm if I were to work under the supervision of my first Division Manager? (1 = Strongly Agree, 7 = Strongly Disagree)	4.111 (1.953)	4.375 (1.863)	3.294 (2.394)	4.563 (1.882)	4.465 (1.869)	3.257 (2.119)

Panel B: Regression analysis of psychological contract fulfilment as a function of type of budgeting for the first-round supervisor (n=110)

	Coefficient (Standard Error)	t	p (two-tailed)
<i>Authoritative (A)</i>	-1.280 (0.199)	-6.43	<0.001
<i>Consultative (C)</i>	-1.205 (0.195)	-6.17	<0.001
<i>Gender</i>	-0.059 (0.193)	-0.31	>0.100
<i>Constant</i>	0.903 (0.218)	4.15	<0.001
Adjusted R ²		0.31	
F-value of the regression		17.41	

Panel C: Regression analysis of psychological contract fulfilment as a function of type of budgeting for the second-round supervisor (n=110)

	Coefficient (Standard Error)	t	p (two-tailed)
<i>Authoritative (A)</i>	-1.511 (0.190)	-7.94	<0.001
<i>Consultative (C)</i>	-1.330 (0.177)	-7.53	<0.001
<i>Gender</i>	-0.212 (0.180)	-1.18	>0.100
<i>Constant</i>	1.125 (0.206)	5.47	<0.001
Adjusted R ²		0.41	
F-value of the regression		26.29	

Notes. Panel A reports the mean responses to the post-experimental questions for each type of budgeting (authoritative (A), consultative (C), and affirmative (F)) and each round of supervisor. Panels B and C report the results of regression analysis where the dependent variable is the factor score from a factor analysis of the six post-experimental questions related to the extent of psychological contract fulfillment. A lower score on the dependent variable indicates larger psychological contract breach. In all cases, Gender is a binary variable assuming the value of 1 if the participant is male, and 0 otherwise. All *p*-values are two-tailed.

Table 3 Sobel-Goodman Tests for a Mediating Relation of Psychological Contract Fulfillment on the Relation between Budgeting Type and Budgetary Misreporting

<i>Panel A: Direct and Indirect effects of Budgeting Type on Budgetary Misreporting – Authoritative and Consultative Combined. Mediator variable = Psychological Contract Fulfillment. (N = 440)</i>			
	Coefficient (Standard Error)	Z	p-value
Indirect effect	-0.074 (0.026)	-2.889	<0.010
Direct effect	0.248 (0.044)	5.615	<0.001
Total effect	0.173 (0.037)	4.750	<0.001
Proportion of total effect that is mediated (absolute value)			42.98%
Ratio of indirect effect to direct effect (absolute value)			30.06%
Ratio of total effect to direct effect (absolute value)			69.94%
<i>Panel B: Direct and Indirect effects of Authoritative Budgeting Type on Budgetary Misreporting. Mediator variable = Psychological Contract Fulfillment. (N=440)</i>			
Indirect effect	-0.073 (0.026)	-2.79	<0.010
Direct effect	0.158 (0.048)	3.30	<0.010
Total effect	0.086 (0.041)	2.08	<0.050
Proportion of total effect that is mediated (absolute value)			84.98%
Ratio of indirect effect to direct effect (absolute value)			45.94%
Ratio of total to direct effect (absolute value)			48.94%
<i>Panel C: Direct and Indirect effects of Consultative Budgeting Type on Budgetary Misreporting. Mediator variable = Psychological Contract Fulfillment (N=440)</i>			
Indirect effect	-0.068 (0.025)	-2.79	<0.010
Direct effect	0.322 (0.047)	6.92	<0.001
Total effect	0.254 (0.040)	6.30	<0.001
Proportion of total effect that is mediated (absolute value)			26.96%
Ratio of indirect effect to direct effect (absolute value)			21.24%
Ratio of total effect to direct effect (absolute value)			57.32%

Notes: Table B.3 reports the results of the Sobel-Goodman test for the mediation relation predicted by H2 detailed by budgeting condition. The dependent variable (DV) is %Misreporting, calculated as $\sum_{i=1}^n \text{budgetary slack claimed} \div \sum_{i=1}^n \text{maximum available budgetary slack}$. The main predictors are the three types of budgeting, represented, respectively, by an indicator variable A (C) that takes the value of 1 if the budget is authoritative (consultative) and zero otherwise. The dropped variable (base case) is the affirmative budgeting (F). The mediator variable is the degree of psychological contract

fulfillment measured by the factor score from a factor analysis of the six post-experimental questions related to psychological contract breach. In all cases, Gender is a binary variable assuming the value of 1 if the participant is male, and 0 otherwise. All p -values are two-tailed.

Table B.4 Effect of Prior Psychological Contract Breach on Budgetary Misreporting

Panel A: Mean (standard deviation) misreporting by type of budgeting for periods 7-10

Affirmative control group – previous affirmative condition (periods 7 - 10) (N = 36)	30.41% (38.00%)
Affirmative treatment group – previous authoritative or consultative condition (periods 7 -10) (N = 104)	47.42% (40.36%)

Panel B: Repeated measures analysis of variance

Factor	df	Sum of Squares	F	<i>p (two-tailed)</i>
Between-Subjects				
<i>Previous_Breach</i>	1	0.422	2.83	<0.100
<i>Error</i>	127			
Within-Subjects				
<i>Period</i>	3	0.091	0.02	>0.100
<i>Gender</i>	1	1.006	6.74	<0.050
<i>Period * Previous_Breach</i>	3	0.062	0.14	>0.100
<i>Gender * Previous_Breach</i>	1	2.411	16.16	<0.001
<i>Gender * Period</i>	3	0.097	0.03	>0.100

Panel C: Multivariate analysis of budgetary misreporting (N = 1,088)

	Coefficient (Standard Error)	t	p (two-tailed)
<i>Post</i>	0.030 (0.048)	0.62	>0.100
<i>Affirmative_Budgeting</i>	-0.111 (0.070)	-1.59	>0.100
<i>Change</i>	-0.013 (0.043)	-0.31	>0.100
<i>Post * Affirmative_Budgeting</i>	-0.060 (0.099)	-0.61	>0.100
<i>Post * Change</i>	-0.069 (0.061)	-1.13	>0.100
<i>Change * Affirmative_Budgeting</i>	-0.081 (0.083)	-0.97	>0.100
<i>Post * Change * Affirmative_Budgeting</i>	0.334 (0.118)	2.84	<0.010
<i>Gender</i>	0.012 (0.030)	0.42	>0.100
<i>Constant</i>	0.435 (0.040)	10.90	<0.001
Adjusted R ²		0.030	
F-value of the regression		4.36	

Notes: Table B.4 reports the results of the analyses of budgetary misreporting behavior for participants that experience affirmative budgeting (F) under the second supervisor. Panel A reports the mean misreporting percentage for participants in F in the second round (periods 7-10). These include, 9 participants who were in F in both rounds (Affirmative control group), 26 participants in the Affirmative treatment group (that is, were in F in the second round but not in the first), of which 14 were in A in the first round, 12 participants who were in C in the first round. The sample size for Affirmative control group is $9 \times 4 = 36$, and for the Affirmative treatment group it is $(14+12) \times 4 = 104$. Panel B reports the results of a repeated measures analysis of variance in which budgeting type is a between-subjects factor with 2 levels (affirmative in periods 7–10 with prior authoritative or consultative budgeting condition, and affirmative in periods 7–10 with prior affirmative condition), period is a within-subjects factor with 4 levels (periods 7-10 in round 2). The dependent variable is *%Misreporting* and is calculated as $(\sum_{i=1}^n \text{budgetary slack claimed} \div \sum_{i=1}^n \text{maximum available budgetary slack})$. Panel C reports the coefficients estimated with OLS regression. *Post* is a binary variable assuming the value of 1 if the observation relates to periods 7-10, and 0 if the observations relates to periods 2-5. *Affirmative_Budgeting* is an indicator variable that assumes the value of 1 if the participant is assigned to the Affirmative budgeting condition in the second round, and 0 otherwise. *Change* is an indicator variable assuming the value of 1 if the condition in round 1 is different than the condition in round 2, and 0 otherwise. In all cases, *Gender* is a binary variable assuming the value of 1 if the participant is male, and 0 otherwise. All *p*-values are two-tailed.

Table B.5: Differences between Mean Misreporting in Round 1 and Round 2 by Budget Type

	Round 1 Periods 2-5 Supervisor 1	Round 2 Periods 7-10 Supervisor 2	Difference between means (Statistical significance)
No-Breach to Breach	24.01% (21.06%) N = 25	33.17% (24.78%) N = 25	p<0.100
Breach to No-Breach	44.76% (27.69%) N = 26	47.42% (35.76%) N = 26	p>0.100

Notes: Table B.5 reports the mean budgetary misreporting of participants in all cells for each round. The sample for this analysis excludes all participants assigned to control cells, for which the budgeting condition did not change between rounds, even if the supervisor in periods 7-10 was different than the supervisor in periods 2-5, and all participants for which the change in budgeting condition between round 1 and round 2 consisted of moving between breach conditions (i.e. from authoritative to consultative, or from consultative to authoritative). The remaining observations are classified as “no-breach to breach” if the participant experienced affirmative budgeting in the first round and either authoritative or consultative budgeting in the second round under the new supervisor, or as “breach to no-breach” if they experienced authoritative or consultative budgeting in the first round and affirmative in the second. The statistical significance between mean budgetary misreporting across periods is based on a paired *t*-test analysis. All *p*-values are two tailed.

Table B.6 Supplemental Analyses: Firm Profit and Charity Donations by Budgeting Type

Panel A Firm Profit and Donations under Each Budgeting Type (Periods 2-5)		
Budgeting Type	Mean (SD) Firm Profit (N = 440)	Mean (SD) Donations to Charity (N= 254)
Authoritative (A)	1.563 (1.504)	28.600% (38.252%)
Consultative (C)	1.199 (1.405)	16.100% (29.545%)
Affirmative (F)	2.137 (1.467)	16.913% (27.766%)
Overall	1.608 (1.504)	20.083% (32.135%)

Panel B: Regression Analysis of Firm Profit and Donations as Function of Budgeting Type				
	Firm Profit		Donations	
	Coefficient (Standard Error)	p (two-tailed)	Coefficient (Standard Error)	p (two-tailed)
<i>Authoritative (A)</i>	-0.572 (0.175)	<0.010	11.727 (4.957)	<0.050
<i>Consultative (C)</i>	-0.934 (0.171)	<0.001	-0.719 (4.787)	>0.100
<i>Gender</i>	0.037 (0.170)	>0.100	1.005 (4.845)	>0.100
<i>Constant</i>	2.105 (0.191)	<0.001	16.083 (5.200)	<0.010
Adjusted R ²		0.059		0.018
F-value of the regression		10.23		2.56

Notes: Table B.6 reports the results of supplemental analyses focusing on the differences in firm profit and charity donations in the various budgeting conditions. In all cases, firm profit is calculated as “sales price minus the approved cost budget”. For example, profit under A is \$3.00 (i.e., selling price of \$8.00 less the hurdle cost of \$5.00) when there is production and \$9.00 when there is no production. Profits under C and F are \$8.00 minus the approved cost budget. Donations is a percentage of budgetary slack consumed for all periods in which participants have budgetary slack. While firm profit can be calculated for each observation, choices with respect to charity donations were only available where the participant would be assigned a budget allocation that was greater than the actual cost. Panel A reports mean profits and mean donations in periods 2-5 under the different budgeting conditions. All means are statistically significant (*t*-test) across conditions. Panel B reports the coefficient estimated with OLS regression for the relation between budgeting type and firm profit (donations), controlling for gender. The base case in all regression analyses is the Affirmative (F) condition. Gender is an indicator variable assuming the value of 1 if the participant is male, and zero otherwise. All p-values are two-tailed.