PRODUCTIVITY GAINS AND EXPENSE REDUCTION FROM USING MULTIPLE MONITORS IN THE ANALYTICS DEPARTMENT

Prepared for
Workforce Data & Analytics Management

Prepared by
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Department Management
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Dear Department Management:

The attached analysis report details the productivity and expense impact that will occur with the replacement and introduction of a second display monitor at employee workstations. I feel this analysis will be useful to you in the evaluation of department expenses.

This analysis focused on three areas of impact:

- Current state of employee productivity and expenses
- Costs incurred to provide, setup, and use multiple monitors
- Future productivity gains and expense reductions from the change

Primary research consisted of employee work evaluations with a single monitor setup while secondary research focused on initial costs of the extra monitors, role salary averages, and industry use of multiple monitors in the workplace. Findings are analyzed thoroughly in the report, but the conclusions find multiple monitors increase productivity and reduce expenses.

I would be happy to discuss this report in greater detail upon request. Thank you for the opportunity to be a part of this project.

Sincerely,

Christopher Shane Lynn
Workforce Specialist

Attachment

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

EXECUTIVE SUMMARY

The Workforce Data & Analytics department spends in excess of $180,000 each year in wasted productivity time because of a single monitor at the workstations of our Workforce Analyst team. This report was requested to identify if this wasted labor was occurring and to provide a recommendation to resolve the situation.

The investigation focused on the following areas:

- **Productivity**. We found 39 hours of waste per Workforce Analyst was happening each month because of a single monitor.

- **Expenses**. Using national salary averages, lost time for all study group members costs the company $15,187 per month.

- **Future Gains**. By purchasing 24 new 27" monitors for $6,489, within two months the expenses will be recouped in productivity gain and labor waste will fall 50%.

Based on the analysis, we recommend spending $6,489 to purchase 24 new 27" monitors. The productivity gains provided will reduce the current wasted labor hours by 50%, pay off the $6,489 spent in three months, and recoup lost productivity dollars by $80,000 in the first year of implementation.

INTRODUCTION: ANALYSTS AND DAILY WORK

This report is designed to examine the productivity impact currently in the workplace due to employees in the Workforce Analyst role only having access to a single computer monitor. Often the single monitor is the laptop screen, but the bulk of daily work is completed at a workstation with a larger monitor connected to the laptop. During these core work hours, Workforce Analysts need to maximize production time due to the importance of their work. However, they are not as efficient because they do not have the required space needed to process their work. This report seeks to illustrate the need to expand desktop space for each employee by addressing the following:

- Is productivity impacted by a single monitor?
- If a single monitor is impacting production, how much is it costing us?
- What do we need to do in order to get that productivity back for the future?

BACKGROUND: SINGLE MONITORS AND THEIR IMPACT ON PRODUCTIVITY

A computer using a single monitor has been necessary since businesses began using computers. As technology has evolved, so has the ability for computers to display more information on a screen at one time using higher resolutions. At the same time, applications have become more complex and increased their need for space on the screen. In our modern business environment, an employee rarely uses a single program application window anymore.

The need to increase virtual desktop space is imperative in today's business world as employees handle less paper documents. Our employees are all using single 20" monitors which is not enough space to avoid productivity loss. The loss is not obvious because it consists of one or two seconds each occurrence. Yet, when it happens multiple times over the course of a workday, the toll lost seconds take on productivity and potential errors is high. We observed how often a Workforce Analyst had to stop and make window adjustments on the screen before continuing to handle their work. Those results motivated us to investigate the extent of productivity loss and how it could be corrected.

Researching every employee in the department was unrealistic, so the scope was narrowed to just the Workforce Analyst employees where the initial observation was made. It took three days to collect averages, and the research is organized into the sections of productivity, expenses, and future gains.

DISCUSSION: PRODUCTIVITY, EXPENSES, AND FUTURE GAINS

PRODUCTIVITY

Productivity was focused on the primary daily work items in the following groups: Third-level research, Investigations, and Litigation Notifications. Additional productivity impacts exist in other areas of daily work, but those roles are beyond the scope of this report.

Third-level Research

- Third-level research is an electronic queue monitored by Workforce Analysts consisting of data consulting needs. Productivity is impacted in the review and handling aspect of these documents because it requires extra time moving windows around in the process of researching items. Opening and reviewing items in the queue requires the use of, at minimum, four different program windows to complete the task. More in-depth research and handling requires nine different program windows onscreen.

Investigations

- Performance investigations come in from all departments within the company. Requests for analysis often center around employee misconduct and are confidential and time-sensitive. Handling these items requires the use of three applications each with separate windows open to review and record information.

Litigation Notifications

- Notifications are sent from the Law department requesting employee information regarding received subpoenas. These requests are time-sensitive, and it is critical the data is recorded and reviewed accurately. Currently, seven application windows must be used in the processing of these requests.

The following tables indicate the lost productivity on the items worked in each of the primary categories[1] handled by 12 team members. These times are the averages for *one* Workforce Analyst.

Average Additional Spent Time Moving Windows				
Work Item Name	*Avg. Items*	*Hours*	*Minutes*	*Seconds*
Third-Level Research	1			44
Investigations	1		2	18
Litigation Notifications	1		1	34

Figure 1

[1] Based on research and interviews of the Workforce Analyst Team.

Productivity Time Lost per Hour				
Work Item Name	*Avg. Items*	*Hours*	*Minutes*	*Seconds*
Third-Level Research	7		5	8
Investigations	3		6	54
Litigation Notifications	4		6	16

Figure 2

Productivity Time Lost per Workday (6 hours, 30 minutes)				
Work Item Name	*Avg. Items*	*Hours*	*Minutes*	*Seconds*
Third-Level Research	6 hr, 30 min		33	22
Investigations			44	51
Litigation Notifications			40	44

Figure 3

Productivity Time Lost per Month (20 days)				
Work Item Name	*Avg. Items*	*Hours*	*Minutes*	*Seconds*
Third-Level Research	20 days	11	7	20
Investigations		14	57	0
Litigation Notifications		13	34	40

Figure 4

EXPENSES

Lost productivity time costs the company considerable money in labor expenses each month. Salaries differ across the team, so we took a conservative approach and used the national average for the position of $61,525.[2] The following tables illustrate the current costs to the company due to the use of a single monitor:

Labor Expenses		
Workforce Analyst Salary		
Pay per Year		$61,525
Pay per Month	$61,525 / 12 =	$5,127.08
Pay per Week	$5,127.08 / 4 =	$1,281.77
Pay per Hour	$1,281.77 / 40 =	$32.04

Figure 5

[2] See (salary.com, 2020) for additional information.

Productivity Time Lost - Cost to the Company	
Workforce Analyst (WFA)	
Extra Expense per Month	$1,265.58
Extra Expense per Year (1 WFA)	$15,186.96
Extra Expense per Year (All WFA)	$182,243.52
Calculations	
Average working days	20
Missed Time for Work Items	39 Hrs. 39 Mins
WFA Salary per Hour	$32.04
Total WFA's in department	12
$32.04 * 39 (Hours) =	$1,249.56
$32.04 / 2 (30 Minutes) =	$16.02
$1,265.58 * 12 (Months) =	$15,186.96
$15,186.96 * 12 (Staff) =	$182,243.52

Figure 6

FUTURE GAINS

To realize future gains, the single monitor needs to be replaced with two 27" ones because industry research states productivity increases from 20% to 50%.[3] The money currently being spent per year in current state is $182,244. Once setup, we estimate the larger monitors should provide at least a 50% performance gain. An upfront additional set up cost of $6,489 is required on top of the current $15,187 in labor waste for the first month of July. The total will be $21,676, but the cost will be realized after 11 months in May of next year with the final large savings of $82,355 occurring in June.

Figure 7 shows the initial expenditure in July of this year with the gradual reduction in expenses over the rest of the year. Figure 8 illustrates the payoff of the initial expenditure and productivity time savings within the first year.[4]

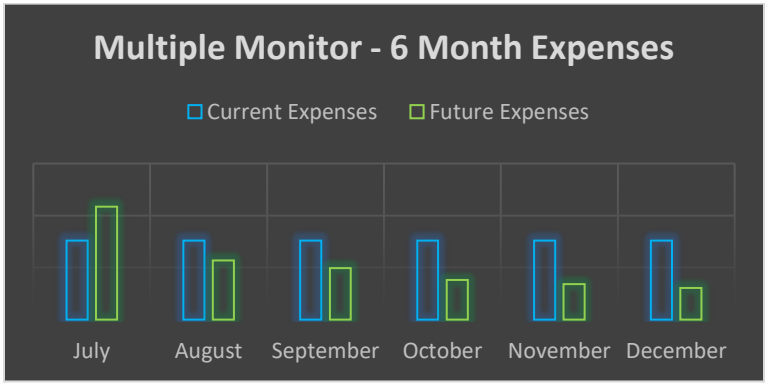


Figure 7

[3] See Data Computer Services article on Dual Monitors (Data Computer Services, 2019).

[4] Full-size charts are in Appendix A.

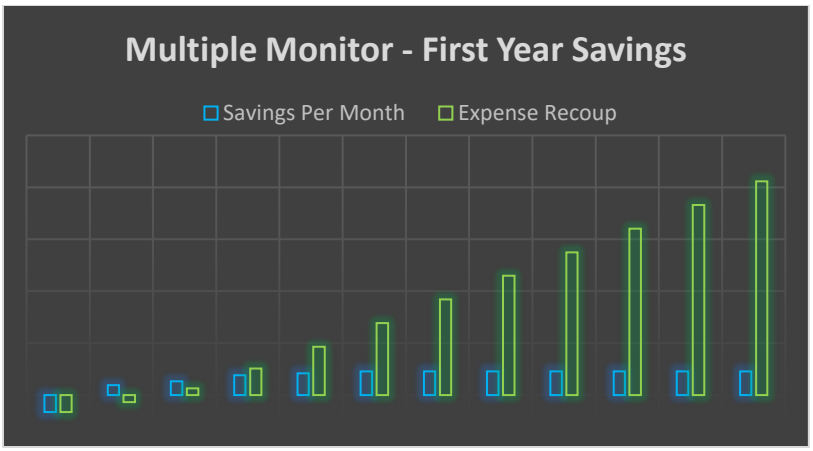


Figure 8

Staffing

We will require employees from the following areas:

- **Technical Services** – One technician to complete the setup on the new equipment.
- **Administrative Services** – One shipping and receiving employee to verify receipt of equipment, unpack the monitors, and load them onto a cart for the technician.
- **Human Resources** – We need all 12 of the Workforce Analyst employees to complete personal adjustments to the monitors after installation.
- **Purchasing** – To place the order, we need one employee.

Budget

The extra costs for multiple monitors are $6,489 allocated to the following areas:

- **Equipment Purchase** – The 24 new monitors will replace the current single monitor with two 27" widescreen monitors. The regular purchase price for the Dell 27" monitor is $240, so the final purchase price is $5,760.[5]
- **Labor** – Need one employee from the purchasing department to order the monitors. Cost of one hour at an estimated $20 per hour.
- **Equipment Setup** – A Technician will be required to remove the old and install the new monitors. We estimate it will cost $50 per hour with a final cost at $300. The shipping and receiving employee to prepare the monitors for the technician to install will need one hour at an estimated $25 per hour.

[5] Based on the data from Dell.com (Dell, 2020).

CONCLUSIONS AND RECOMMENDATION

Examining our current state revealed the company is losing $182,244 each year due to lost productivity because of single monitors. We recommend spending an extra $6,489 to purchase and install 24 new 27” monitors at each workstation next month in July. It will take up to two months for the employees to adapt, but once they do, we will see productivity increases around 50%. Over the first year, the company will save $80,000+ in lost productivity time. This is a critical moment where every second does count.

Works Cited

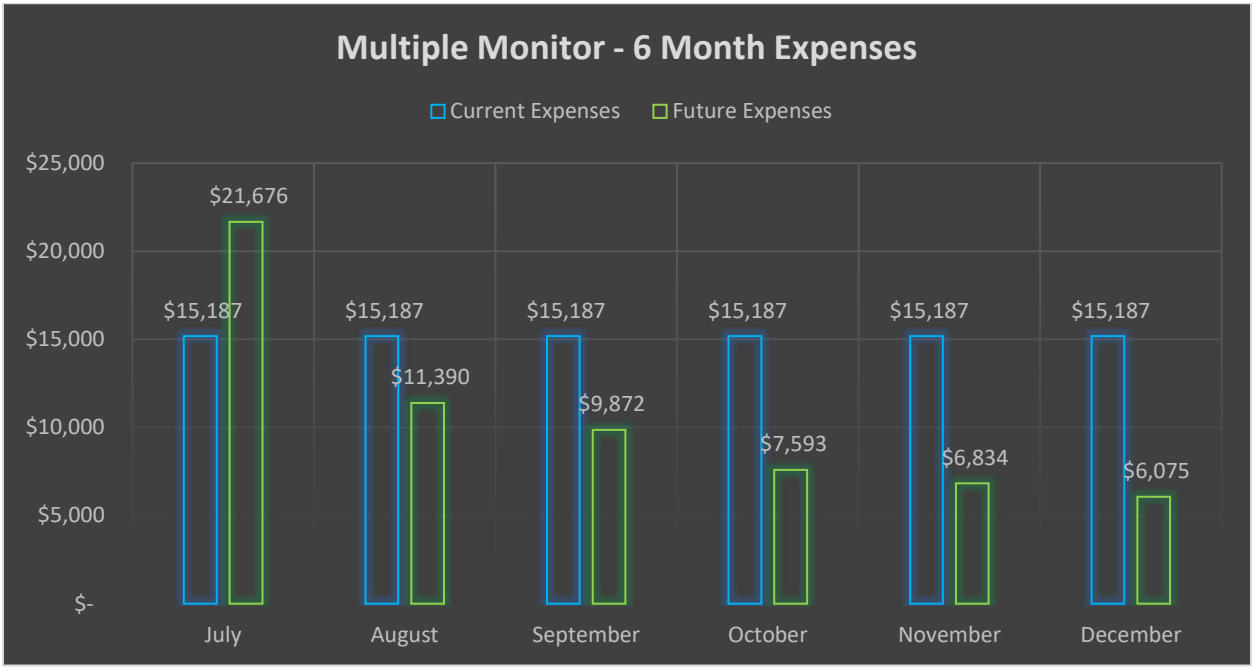
Data Computer Services. *ADVANTAGES OF DUAL MONITORS IN THE WORKPLACE*. 22 Jan. 2019, https://www.data-edinburgh.co.uk/general/advantages-dual-monitors-workplace/

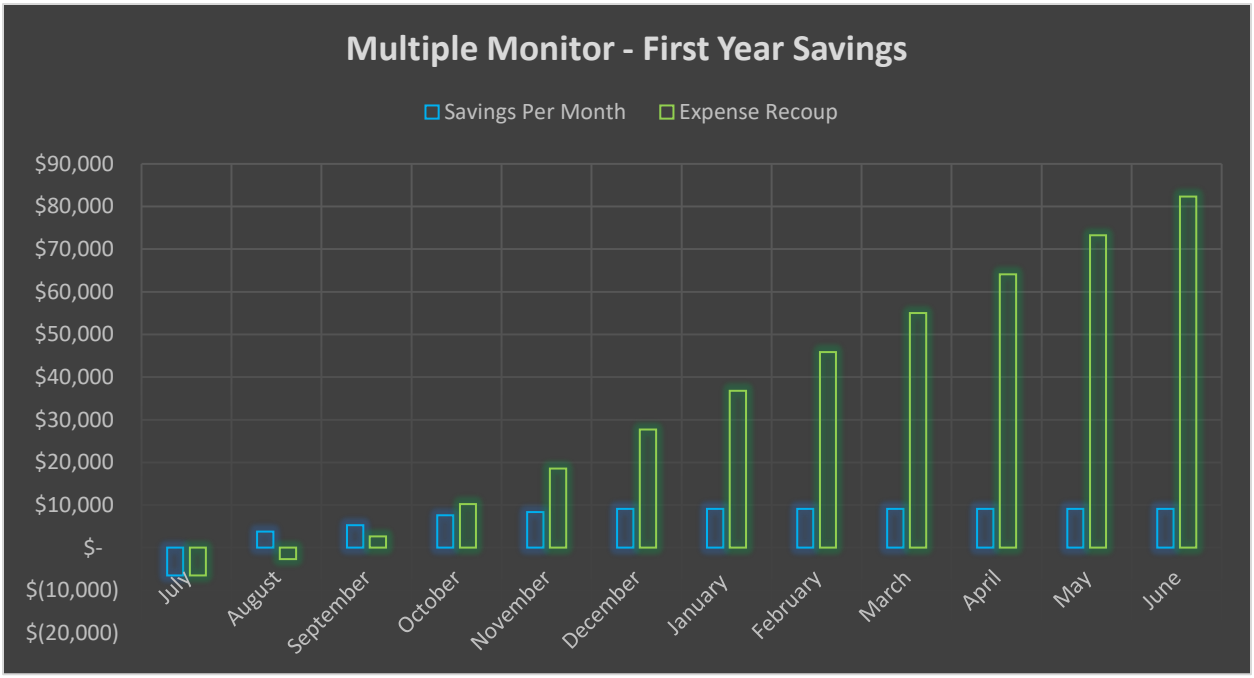
Dell.com. *Dell 27 Monitor - E2720HS.* 10 Oct. 2020, https://www.dell.com/en-us/work/shop/dell-27-monitor-e2720hs/apd/210-aunh/monitors-monitor-accessories

Salary.com. *Workforce Analyst I Salary in the United States.* 10 Oct. 2020, https://www.salary.com/research/salary/benchmark/workforce-analyst-i-salary

Workforce Analyst Team. *Interview*. Conducted by Christopher S. Lynn, 15-17 June 2016

Appendix A


Multiple Monitor - 6 Month Expenses
Current Expenses
Future Expenses
$25,000
$20,000
$15,000
$10,000
$5,000
$-
$21,676
$15,187
$15,187
$11,390
$15,187
$9,872
$15,187
$7,593
$15,187
$6,834
$15,187
$6,075
July
August
September
October
November
December


Multiple Monitor - First Year Savings
Savings Per Month
Expense Recoup
$90,000
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
$(10,000)
$(20,000)
July
August
September
October
November
December
January
February
March
April
May
June