

## **“Scrumming” the Library Materials Budget: A Serendipitous Application of an Agile Project Management Framework**

Raimonda Margjoni

*University of Florida George A. Smathers Libraries*, [raimarg@uflib.ufl.edu](mailto:raimarg@uflib.ufl.edu)

Michelle McClure

*University of Florida George A. Smathers Libraries*, [michelleelneil@uflib.ufl.edu](mailto:michelleelneil@uflib.ufl.edu)

Follow this and additional works at: <https://docs.lib.purdue.edu/charleston>

An indexed, print copy of the Proceedings is also available for purchase at:

<http://www.thepress.purdue.edu/series/charleston>.

You may also be interested in the new series, Charleston Insights in Library, Archival, and Information Sciences. Find out more at: <http://www.thepress.purdue.edu/series/charleston-insights-library-archival-and-information-sciences>.

---

Raimonda Margjoni and Michelle McClure, “Scrumming” the Library Materials Budget: A Serendipitous Application of an Agile Project Management Framework” (2018). *Proceedings of the Charleston Library Conference*.

<http://dx.doi.org/https://doi.org/10.5703/1288284317038>

# “Scrumming” the Library Materials Budget: A Serendipitous Application of an Agile Project Management Framework

Raimonda Margjoni, Accounting Manager, University of Florida George A. Smathers Libraries, [raimarg@uflib.ufl.edu](mailto:raimarg@uflib.ufl.edu)

Michelle McClure, Accounting Coordinator, University of Florida George A. Smathers Libraries, [michelleelneil@uflib.ufl.edu](mailto:michelleelneil@uflib.ufl.edu)

*This paper is based on a poster presentation at the 2018 Charleston Library Conference, November 7, 2018.*

## Abstract

Maintaining a sustainable materials budget in academic libraries remains a challenging task, as it's not only affected by constant pressures of flat funding and increasing annual costs but is also subject to timely invoicing and accurate documentation of budget allocations and expenditures. At George A. Smathers Libraries at University of Florida (UF), developing the annual materials budget allocation is an extensive process that begins in November/December with a rough estimate derived from prior-year final expenditure figures. As the year progresses and expenditure commitments increase, the allocations estimate becomes more precise, and it culminates in August/September after a successful completion of the budget rollover. This paper describes an end-of-the-year methodology initiated by the Acquisitions & Collections Services Department (ACS) to ensure full payment of materials budget expenditure commitments, along with a timely budget rollover. This effort was to close the fiscal year with the maximum expenditures paid in order to set the foundation for developing the most accurate allocations for the next fiscal year. The focus of the paper is on electronic resources (e-resources) expenditures, which represents the highest percentage of the overall library materials budget. Simultaneously, this paper reveals the “serendipitous” application of Scrum—an agile project management framework to our end-of-the-year approach. An analysis of our methodology from a project-focused perspective revealed that many of our processes “serendipitously” mirrored those of the Scrum framework. Going forward, we plan to intentionally implement the complete Scrum framework in our end-of-the-year approach, in order to fully benefit from this methodology.

## Introduction

The George A. Smathers Libraries at UF encompasses two large library systems: (1) University Libraries (UL), which includes seven budget centers: Departmental Libraries (Architecture & Fine Arts, Education and Music), Humanities, Marston Science Library, Multidisciplinary, Social Sciences, Special & Areas Studies Collections, and Virtual Business; and (2) the Health Science Center Library (HSCL), which includes the Veterinary Medicine Education Center and the Borland Library in Jacksonville.

The Smathers Libraries materials budget is allocated to 277 budget lines across budget centers, subject disciplines, and material formats. As seen in Figure 1, the largest share of the budget is allocated for e-resources, which accounted for 87.06% of the budget in fiscal year 2017/2018. The remaining 12.94% percent was allocated as follows: 4.33% percent for

firm order and approval monographs including print monographs, e-books, mixed media, and streaming video; 3.19% for print and print plus online continuations; 3.07% for user-driven acquisition plans (UDA/PDA/DDA/EBA); and 2.44% for technology and support services including service charges, shipping and processing, memberships, and so on.

The Accounting and Serials Unit (A&S) manages the budget across all formats and budget centers. This paper focuses on e-resources since it represents the largest and most complex share of the budget. E-resources have varying renewal dates and are subject to contract negotiations, package changes, format changes, title transfers, price negotiations, and so on. These challenges require A&S to make accurate predictions on pricing, and to monitor funding and make adjustments for differences in both amounts and timing of funding sources.

## SMATHERS LIBRARIES MATERIALS BUDGET REPORT EXECUTIVE SUMMARY FOR FISCAL YEAR ENDED JUNE 30, 2018

	BEGINNING ALLOCATION DISTRIBUTION	ALLOCATION		EXPENDITURES	ENCUMBRANCES	EXPENDITURES + ENCUMBRANCES	FREE BALANCE	
		BEGINNING	CURRENT					%COMMITTED
ELECTRONIC RESOURCES	87.08%	\$10,971,901.00	\$10,988,909.87	(\$1,399,829.18)	\$0.00	(\$1,399,829.18)	\$2,588,980.49	78.44%
PRINT SERIALS	3.19%	\$401,999.00	\$373,899.85	(\$294,977.89)	(\$0.01)	(\$294,977.87)	\$78,912.88	78.89%
MONOGRAPHIC FORMAT								
FIRM ORDER		\$424,080.00	\$422,529.48	(\$202,045.75)	(\$28,998.88)	(\$229,042.41)	\$193,487.07	54.21%
APPROVAL PLAN		\$128,100.00	\$123,100.00	(\$81,453.75)	\$0.00	(\$81,453.75)	\$41,546.25	68.17%
<b>SUBTOTAL MONOGRAPHIC FORMAT</b>	<b>4.33%</b>	<b>\$549,230.00</b>	<b>\$545,629.48</b>	<b>(\$283,499.50)</b>	<b>(\$28,998.88)</b>	<b>(\$310,498.18)</b>	<b>\$238,133.32</b>	<b>58.91%</b>
USE DRIVEN ACQUISITIONS	3.07%	\$371,750.00	\$388,750.00	(\$215,730.50)	(\$4,455.88)	(\$220,186.38)	\$156,563.62	58.93%
SUPPORT & TECHNOLOGY	2.44%	\$307,128.00	\$307,128.00	(\$138,188.42)	\$0.00	(\$138,188.42)	\$170,939.58	44.34%
<b>Grand Total</b>	<b>100%</b>	<b>\$12,682,998.00</b>	<b>\$12,682,998.00</b>	<b>(\$8,338,825.46)</b>	<b>(\$31,453.55)</b>	<b>(\$8,369,478.01)</b>	<b>\$3,346,529.99</b>	<b>74.94% expended 74.29% committed</b>

Figure 1. Smathers Libraries Materials Budget Report. FY 2017–2018 as of April 3, 2018.

Monitoring e-resources commitments requires diligence and regular oversight. In the libraries management system (ILS) allocations of e-resources are entered at the budget level and not on the title level, whereas the expenditures are entered at the order, invoice, and title levels. However, there has been an ongoing need to track both paid and unpaid e-resources on the title level, and since this was not available through the ILS, ACS decided to create their own internal E-R Trackers. Initial E-R Trackers were created almost 10 years ago in Excel format and have undergone many changes and improvements. But

their purpose has remained the same: to provide rapid information on the title level for both paid and unpaid e-resources. Currently, ACS uses two E-R Trackers (Figure 2): one for UL and one for HSCL. Each workbook is organized by budget centers and includes information about prior and current year, pricing, variances, allocations, cancellations, renewal periods, payment dates, vendors, publishers, orders, formats, cost-share information, and miscellaneous notes. These workbooks are updated manually as invoices are processed in the ILS and prior to being uploaded to the university's financial system.

Budget Number	TITLE	Order Code	Publisher	Package	Shared With	Cost Share %	Subscription Period Start Date	Subscription Period End Date	ALPHA	Index ABC	Note/Keep	2017/2017 Invoice Amt	2017/2017 Invoice Amt	2017/2017 Invoice Amt
33000005	Accountant	MSB	McGraw Hill		SCALM		1/1/2018	6/30/2018	4087486-1		cancel as order number 3118802-1. Shared with SCALM	121122000	1371561400	
33000006	ACS subscriptions : ACS Journals	MSB	American Chemical Society	American Chemical J.		0.84	1/1/2018	12/31/2018	3450039-305		EXL file share path: dc: shared with: ULR060405-02	437939	461345	
33000005	Acta cytologica	MSB	E. Karger AG Verlag				1/1/2018	12/31/2018	5220079-3		Hold on 12/31/2018-1 prior to FY 2017	437939	461345	
33000005	Acta cytologica	MSB	E. Karger AG Verlag				1/1/2018	12/31/2018	5220079-3		7: from Amazon, space and items missing in invoice file	437939	461345	
33000005	ADIS education and prevention	MSB	Clifford Publications, Inc.				1/1/2018	12/31/2018	4613005-2			437939	461345	
33000005	ADIS patient care and ITDs	MSB	MaryAnn Liebert Inc. Publishers		MaryAnn Liebert		1/1/2018	12/31/2018	4613005-2		EXL account #1037083	438939	589133	
33000005	ADIS research and variant microarrays	MSB	MaryAnn Liebert Inc. Publishers		MaryAnn Liebert		1/1/2018	12/31/2018	4613010-3		EXL account #1037083 / Patroasca Re. Cyclic/series 114	438939	589133	
33000005	Alternative & complementary therapies	MSB	MaryAnn Liebert Inc. Publishers		MaryAnn Liebert		1/1/2018	12/31/2018	4613029-2		EXL account #1037083	438939	589133	
33000005	American Association for Cancer Research - AACR	MSB	American Association for Cancer Research - AACR				1/1/2018	12/31/2018	1778040-2		ON 0175 857 - Not Decided to Renew MAR13/11/13	138027	153880	
33000006	American family physician	MSB	American Academy of Family Physicians				1/1/2018	12/31/2018	30809186-1		Subscription starts 01/01/2018 after MDConsult case of re	437939	461345	
33000005	American journal of nephrology	MSB	E. Karger AG Verlag				1/1/2018	12/31/2018	4618408-4			437939	461345	
33000005	American journal of perinatology	MSB	Thieme Medical Publishers		Thieme		1/1/2018	12/31/2018	4618418-1			130089	152179	
33000005	American journal of public health	MSB	American Public Health Association APHA				1/1/2018	4/30/2018	1752855-4			130423	153880	

Inflation %	High Inflation Rate %	FY 18/18	FY 18/18 AMOUNT PAID	FY 18/18 AMOUNT PAID	FY 18/18 MD AC	FY 18/18 MD AC	Cost change increase = %	FY 18/18 price Under/Over	with Budget - %	Budgeted paid	Budgeted not paid	Spillage +/- Overage	Closed Date	GL/OT

Figure 2. E-R Tracker example.

## Goal

It is very important to track and document materials expenditures as they relate to projected allocations on e-resources. Ultimately, a successful completion of expenditure commitments will result in an accurate and realistic budget allocation that becomes fully functional after the budget rollover. On April 3, 2018, the Smathers Libraries Materials Budget Report (Figure 1) showed that 23.56% of e-resource commitments had not been met. At that point A&S decided to take a proactive approach and develop a Q4 end-of-the-year strategy to ensure full payment of materials budget expenditure commitments, along with a timely budget rollover in order to develop an accurate budget allocation for the next fiscal year.

## Our Approach

The first step of the project was to ensure the accuracy of the E-R Trackers. To complete the task, A&S reviewed the trackers on title/package level to make sure that all new orders, cancellations, and transfers were reflected. Later, for paid resources, invoice and line item data was reviewed against ILS data. From this, A&S was able to identify the committed renewal titles that were active and had not yet been invoiced and paid. E-resource titles can remain outstanding for several reasons including pending package negotiations, cancellations, transfers, format changes, and the lack of a physical invoice.

At Smathers Libraries, budget centers have assigned dedicated e-resources liaisons who manage the life cycle of e-resources collection from ordering to access. After a complete reconciliation of the trackers, A&S created lists of unpaid e-resources by budget center (Figure 3), distributed to e-resources liaisons, and requested invoice and payment status.

In the next step, the liaisons, working independently of each other, contacted their respective vendors/publishers to inquire about invoices and their status. A&S and e-resources liaisons intensified internal and external communication regarding invoice status, payment status, and E-R Tracker updates. These communications were intraday and done via e-mail, phone calls, impromptu discussions, and any opportunity means to be proactive in achieving the goal. Follow-up action was triggered by vendors/publishers' responses and in some instances took multiple attempts. As responses were received, column "2018 Notes" in the unpaid lists (Figure 3) was annotated accordingly, and as invoices were paid, this column was marked "Paid."

It took about two months to complete these steps and as we approached the end of the year fiscal deadlines, we performed the final steps of our action plan. At this point, all received invoices were processed, the E-R Trackers were updated, and the materials budget was prepared for fiscal rollover.

Not yet paid May 8, 2018		Budget: 07200006		\$25,190.81		
Vendor/ Publisher	Title	Format	Billing Period		2018 Allocation	2018 Notes
American Council of Learned Societies	ACLS humanities e-book [electronic resource].	4450	9/1/2017	8/31/2018	\$4,317.45	Requested invoice a second time
COMMUNICATION INSTITUTE FOR ONLINE SCHOLARSHIP INC.	ComAbstracts [electronic resource]	4450	9/1/2018	8/31/2019	\$1,849.23	No reply for invoice request; renewal not until 8/31/2018; wait until then to pay?
PROQUEST LLC	Counseling and therapy in video [electronic resource].	4900	7/1/2018	6/30/2019	\$535.00	Paid
EBSCO SUBSCRIPTION SERVICES	Criminal justice abstracts.	4450	7/1/2018	6/30/2019	\$4,923.07	Invoice coming from EBSCO
PROQUEST LLC	Ethnographic video online.	4900	7/1/2018	6/30/2019	\$2,756.92	Paid
ISTOR	Flora [electronic resource]; the multimedia journal of black studies.	4400	1/1/2018	12/31/2018	\$193.23	Not current; questionable subscription that we should not pay
EBSCO SUBSCRIPTION SERVICES	Historias of anthropology annual.	4400	1/1/2018	12/31/2018	\$58.85	Print subscription; should not be paid with eResources (?)
EBSCO SUBSCRIPTION SERVICES	International quarterly of community health education.	4400	10/1/2018	9/30/2019	\$563.89	SAGE On hold pending negotiation
University of California Press	Luminos.	4450	6/1/2018	5/31/2019	\$1,070.00	Paid

Figure 3. Snapshot of a list of unpaid e-resources.

When all was complete, the fiscal year closed with only 0.062% (approx. \$7,000) remaining in unpaid e-resources.

## Introduction to Agile and Scrum

In May and July 2018, we attended two training workshops focused on project management. Through a combination of interactive presentations and hands-on exercises, we were introduced to agile project management development methodology, including its theories and principles, and learned in detail about Kanban and Scrum frameworks and their iterative application to various projects. It didn't take long to realize that agile methodology and its frameworks were different from the traditional waterfall project management method that we used often on large, undefined projects. The waterfall model allows for completion of projects through structured, one-directional, progressive phases from conception and planning to implementation and maintenance. Adenowo and Adenowo (2013) note that although this model is easy to implement, it is a rigid approach to problem solving because of its linear format and unsatisfactory for the users as it does not provide opportunities to make changes to the system. Agile methodology, on the other hand, is flexible and it provides opportunities to its users for changes, frequent design, development, review, and reflection. Scrum, for example, is based on plan-do-check-adjust (PDCA) cycles that run through 1–4-week-long Sprints and are updated or modified in Daily Scrum meetings. Although Scrum was initially created for software development, we realized that Scrum could be applied to any of our projects and we were excited at the prospect of the success that this methodology could bring to our

work. Analyzing the end-of-the-year strategic project and the work that we had completed or were in the process of finishing, from the Scrum perspective made us realize that our project steps “serendipitously” mirrored those of the Scrum framework of agile, such as time boxing, incremental releases, ceremonies, and core principles. Additionally, we realized that we had applied many of the flexibilities that Scrum offers such as having a goal, working with cross-functional teams, adapting to change, having continuous updates, and preparing a final product.

As displayed in Figure 4, Sliger (2011) describes the Scrum framework as a process that begins with a clear Vision provided by the business that includes a set of product features in order of importance. Scrum is then applied through a number of ceremonies or meetings identified as Sprint Planning Meeting, Daily Scrum, Sprint Review, and Sprint Retrospective.

While in this paper we have not described the details of the Scrum framework, we have referred to them when discussing the steps of our strategy and their side by side comparison.

## “Scrumming” the End-of-the-Year Approach

As mentioned earlier, in March–April we developed an end-of-the-year strategy to ensure full payment of materials budget expenditure commitments and to complete a successful budget rollover. As described, this involved multiple teams within the ACS department.

The A&S staff initially revealed the idea (*Vision* in Scrum terms) in the Serials Group meeting in March

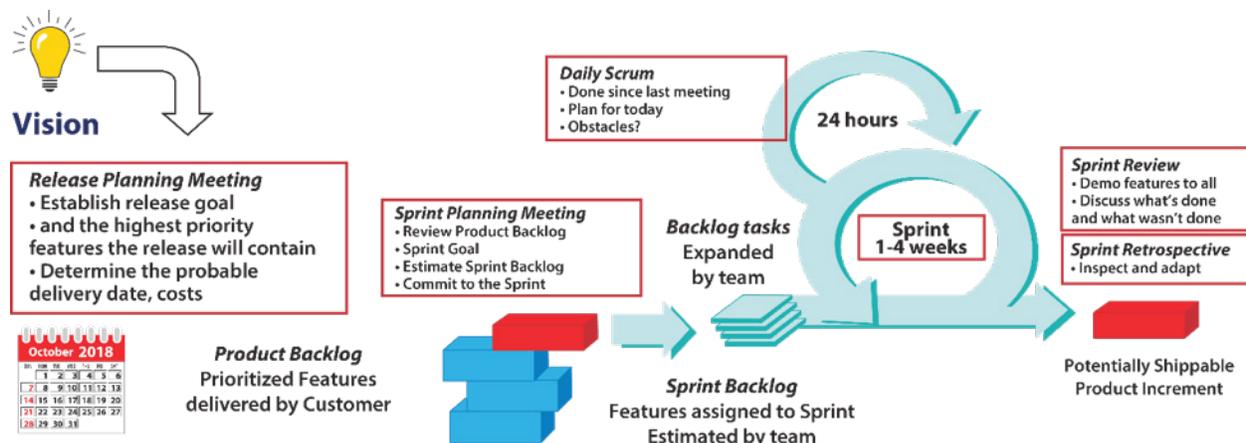


Figure 4. Scrum framework.

2018. The Serials Group is a cross-unit departmental group that meets monthly to discuss all acquisitions serials-related issues. The idea was discussed with other members of the group, mostly from the Electronic Resources Unit, and it was well received. No tasks were divided in this meeting. Analyzing this step from the Scrum perspective, our meeting seemed to partially match with the *Release Planning Meeting* of the Scrum framework. It contained the project goal—ensure full payment on invoices—and the ultimate result of the project—a successful budget rollover. A couple of Scrum elements of this stage weren't necessary for our project: (1) there were no extra costs to be incurred, and (2) the probable delivery date was not determined; it was already set by year-end fiscal deadlines.

The idea was revisited and discussed in more detail in the following month's meeting. A timeline was established and tasks were divided between group members. Analyzed later from an agile PM perspective, this meeting matched with the *Sprint Planning Meeting* of the Scrum framework. At that time, we had a project goal—matching the *Sprint Goal* of Scrum. The Smathers Libraries Materials Budget Report (Figure 1) of April 3, 2018, showed that 23.56% of e-resource commitments had not been met—it could be called *Product Backlog* in Scrum terminology. Our work was to be completed within Q4—predetermined by year-end fiscal deadlines. A period of three months is a little longer than the one to four weeks in length that is recommended for Scrum Sprints. However, because it was a goal-focused period, it could be considered a *Sprint* for our end-of-the-year approach.

Although we had an overall figure of the unspent e-resources budget, additional work needed to be done to determine the exact amounts and titles of unpaid resources for each library and budget center. As described in detail in our approach above, these tasks were completed by both A&S and ER. The cross-team collaboration was maintained throughout the length of the project and updates were provided continuously. However, our updates and follow-ups were impromptu and often triggered by the publishers and vendor responses, and they didn't follow a preset timeline. Figure 5 shows our Launch Action Plan and Cross Team Collaboration stages.

Analyzing these steps from the Scrum perspective revealed that while we matched the *Product Backlog* and *Backlog Tasks* through our action plans and tasks distribution, our updates and follow-ups were

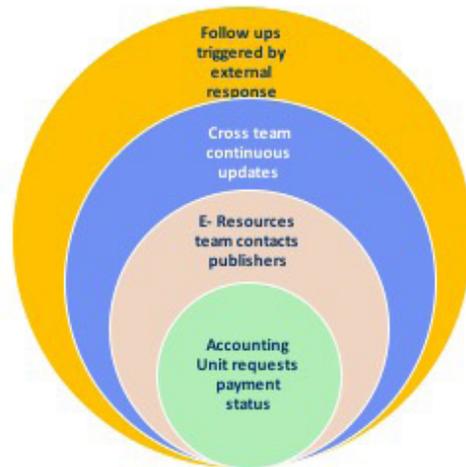


Figure 5. Launch Action Plan and Cross Team Collaboration.

impromptu and triggered by external responses, and therefore these steps weren't a clear match to *Daily Scrum* of the Scrum framework.

The final step of our process is described in Figure 6. It shows the activity related to the fiscal year-end close. As invoices were received and processed in ILS, they were uploaded to the university vouching system for payment. Simultaneously, A&S was updating the E-R Trackers and publishing daily materials budget reports. Consequently, the budget was prepared for a successful rollover. Analyzing Figure 6 activities from the Scrum perspective showed that they matched the *Sprint Review* and *Sprint Retrospective* elements of the Scrum framework. At the end of the process we had prepared the materials budget for a successful rollover, which could be called *Potentially Shippable Product* in Scrum terminology.



Figure 6. Fiscal year-end close.

## Comparison

The purpose of this paper is to describe the end-of-the-year strategy that ACS developed to ensure full payment of materials budget expenditure commitments by fiscal year-end close in preparation for a timely budget rollover. The process was completed successfully and at the end of the fiscal year, only 0.062% of e-resources remained unpaid. Simultaneously, this paper describes our surprising realization that our end-of-the-year approach “serendipitously” matched many steps of the Scrum framework. A side-by-side comparison of the Scrum framework elements of time boxing, incremental releases, ceremonies, and core principles is displayed in Figure 7. It’s clear that without intentionally applying Scrum, we followed Scrum’s *Core Principles* of respect, commitment, focus, openness, and courage by completing our work with teamwork and commitment. Our work was organized in Scrum *Ceremonies* as we formally planned the project and completed it through continuous communication. Additionally, our process matched the *Time Boxing* requirement of Scrum as it was completed in a Sprint and had a Goal. Lastly, the *Releases* requirement of Scrum was also fulfilled as the E-R Trackers and budget expenditures were updated as invoices were received and processed.

As mentioned above, we also identified a few Scrum elements that either weren’t applied or simply could not be applied to our approach. A probable delivery date and cost, for example, which are required to be determined at the *Release Planning Meeting* in Scrum, are not required in our process. Our work would not incur extra costs as it would be completed by our staff as a project and therefore doesn’t need to be determined. The delivery date for our process is set by year-end fiscal deadlines and therefore doesn’t need to be set again. Another example is Focus in Scrum *Core Principles*. Our team remained focused; however, the project was completed by varying discussions and situational approaches as we dealt with various publishers/vendors on different issues. The closing of our project was driven by year-end fiscal deadlines set by the institution, and

## References

- Adenowo, A. A. A., & Adenowo, B. A. (2013). Software engineering methodologies: A review of the waterfall model and object-oriented approach. *International Journal of Scientific & Engineering Research*, 4(7).
- Sliger, M. (2011). Agile project management with Scrum. Paper presented at PMI® Global Congress 2011—North America, Dallas, TX. Newtown Square, PA: Project Management Institute.

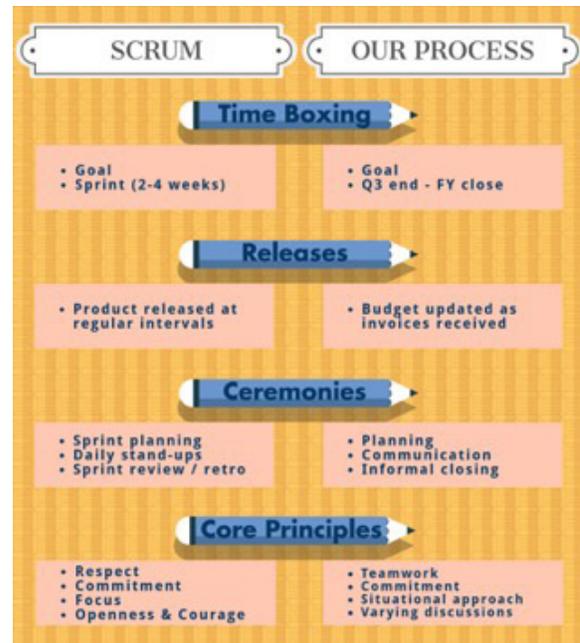


Figure 7. Scrum—our process match.

therefore, we’ve called it an informal ceremony. However, it matches perfectly with the *Sprint Review* and *Sprint Retrospective* stages of Scrum. *Daily Scrum* was the most important element that we identified as not matching at all with our process. Although our end-of-the-year activities described in Figure 5 and Figure 6 allowed us to inspect the budget and adapt through constant updates, the meetings were impromptu and triggered by external responses, but they were not organized as *Daily Scrum* meetings as required by the Scrum framework.

## Next Phase

The analysis of our end-of-the-year methodology from the Scrum perspective was done afterward, and it revealed important findings that made us rethink our strategy. In order to fully benefit from Scrum application, we plan to intentionally apply Scrum to next year’s end-of-the-year process.