



Technology Consulting in the Community

Spring 2017

**Carsten Fandel
Environmental Charter School
Final Consulting Report**

**Carnegie Mellon University
Pittsburgh, Pennsylvania
www.cmu.edu/tcinc**

Carnegie Mellon University

Environmental Charter School

Executive Summary



Student Consultant: Carsten Fandel

Community Partner: Todd Hoffmann, Kristan Abeshouse, Nikole Sheaffer

I. About the Organization

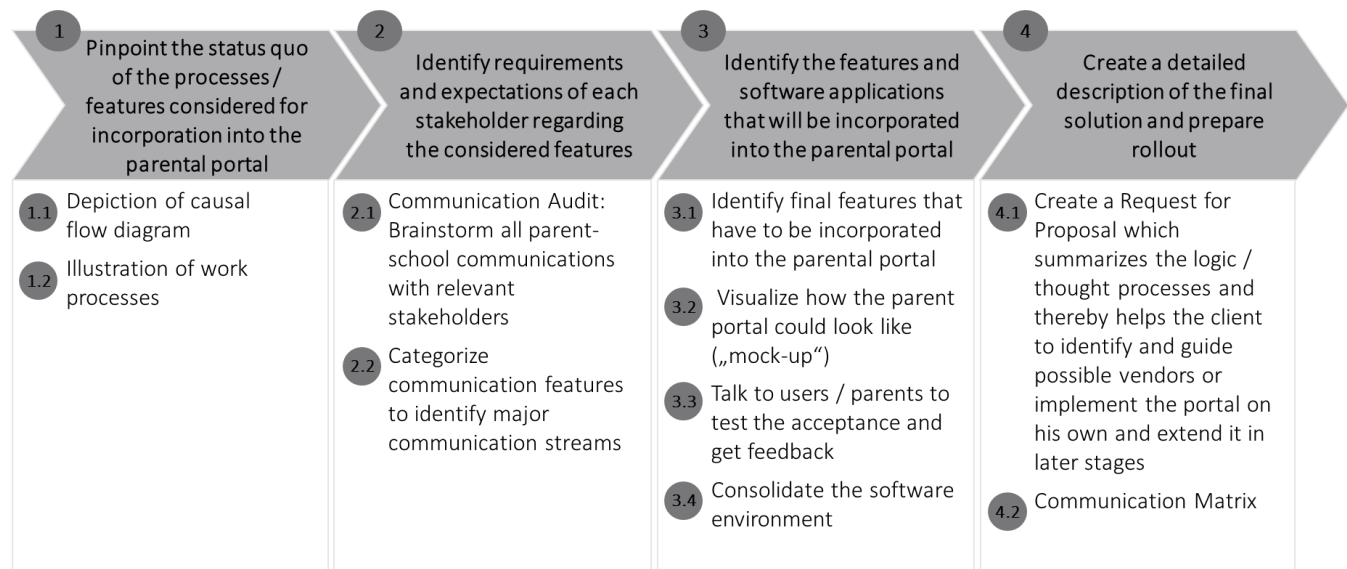
The Environmental Charter School (ECS) was founded in 2008 and focusses on education using a holistic approach aimed to raise responsible citizens, as documented in their mission:

“The mission of The Environmental Charter School at Frick Park is to educate each student to high academic learning standards using a themed curriculum that will foster knowledge, love of and respect for the environment and the will to preserve it for future generations.” (Environmental Charter School 2017)

Since its foundation in 2008 the Environmental Charter School has grown to educate about 550 students from Kindergarten to eighth grade (K-8) with a staff of about 100 employees. Apart from kindergarten and school, the Environmental Charter School provides afterschool programs, a variety of clubs, and school trips.

The staff involved into this project is the Director of IT, Todd Hoffman, the Executive Director of the Afterschool Program, Kristan Abeshouse, and the Director of Innovation, Nikole Sheaffer.

II. Increasing communication effectiveness and user experience through the creation of a “Parent Portal”



The objective of the project was to increase efficiency and effectiveness of communication between ECS and its parents. This was based on the fact that communication processes grew since the foundation of ECS in 2008 and were not done in a consistent way but using several channels. Thus, the aim was to develop a single touchpoint, the parent portal, as part of the ECS website, where parents could log in and find all relevant information and communication bundled at one place. This way, communication could take place consistently using the portal, which would increase user experience / the satisfaction of the parents, thereby lead to higher parent involvement, which in turn is proven to lead to higher student learning outcomes (Herman and Yeh 1983). Thus, apart from increasing efficiency and saving resources that could be redirected to activities that help ECS achieves its mission through educational efforts, this project would have a direct impact on achieving the mission, too. The major phases of the project were to analyze the current situation, brainstorm all communication processes, identify those communication processes that should be included into the portal, and to describe the final solution in order to facilitate later implementation.

III. Outcomes

The important outcome of the project is a communication matrix which summarized all communication processes between parents and the school and provided detail with regard to which medium is being used and when communication takes place. A second important outcome is a Request for Proposal, which describes how the solution should be implemented. Finally, a mock-up of the possible solution has been created and tested with parents (future users).

IV. Recommendations

ECS deploys a structured approach for continuously improving the software environment and is using technology in an innovative and proactive approach to efficiently communicate with stakeholders and to improve the learning experience of its students.

- 1) Develop a strategy and sketch a long-term roadmap (technology plan) and project charters for each project with regard to IT systems architecture.
- 2) “Learning at home” - Include video tapes of lectures and additional classwork-related learning resources into the portal.

Community Partner

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About the Consultant

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Carsten Fandel is an exchange student in the MISM Program at Heinz College, Carnegie Mellon University. Returning to Germany in the summer he will do an internship in a consulting firm and graduate from the University of Mannheim (Mannheim Master in Management, M. Sc.).

Environmental Charter School

Final Consulting Report



Student Consultant: Carsten Fandel
Community Partner: Todd Hoffman, Kristan Abeshouse, Nikole Sheaffer

I. About the Organization

Organization

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Since its foundation in 2008 the Environmental Charter School has grown now educate about 550 students from Kindergarten to eighth grade (K-8) with a staff of about 100 employees. Apart from kindergarten and school, the Environmental Charter School provides afterschool programs, a variety of clubs, and school trips.

Figure 1: Environmental Charter School (left: Lower School, right: Upper School)



Source: <https://ecspgh.org/who-we-are/schools/>

Staff

The staff involved into this project is the Director of IT, Todd Hoffman, the Executive Director of the Afterschool Program, Kristan Abeshouse, and the Director of Innovation, Nikole Sheaffer. Todd Hoffman manages multiple systems at ECS and is responsible for the whole IT infrastructure as well as IT planning. He acted as community partner in the course of this class several times and has solid expertise in managing online systems. Currently, he is working with many vendors to improvise the utilization of IT in the business model of ECS through several measures including the development of a chatbot for future communication purposes. Kristan Abeshouse, who is not only an employee but also a parent at ECS, is highly involved into communication streams with parents and also a volunteer at the Parent Community Organization (PCO) since 2006. Nikole Sheaffer is responsible for communication and outreach of ECS and, like Kristan Abeshouse, also a parent who has a child at ECS.

Apart from the main project partners mentioned above stakeholders of the project will be involved through interviews. These stakeholders include but are not limited to representatives of the following stakeholder groups: parents, teachers and coaches, managers, the nurse, and auxiliary staff.

Technology Infrastructure

ECS uses a hybrid infrastructure consisting of Google cloud services and a local network server in each location. Some of the important devices and software applications are listed below:

Schoology: Schoology is a web-based learning and data-gathering portal that is used by ECS for all students. It enhances connectivity, information-sharing and communication between teachers, students, and parents. It includes features such as learning materials, documents, maps, videos, and a gradebook. It can be accessed by students, teachers, and parents via the Schoology website or mobile app. The screen time depends on the grade. Students from Kindergarten to third grade only access Schoology as a gradebook, whereas fourth and fifth grade take online quizzes and sixth to eighth grade are instructed to use social media. (Screen time policy: <https://ecspgh.org/wp-content/uploads/2015/02/ECS-Screen-Time-Policy.pdf>)

Google Chromebooks: ECS piloted the use of Google Chromebooks in a one-to-one program in order to provide students with the technology skills needed in today's workplaces. The positive feedback from the pilot project in 2016 led to the rollout for grades 4-8. Qualitative and quantitative research is conducted in collaboration with the Children's Museum of Pittsburgh and Seton Hill University to measure the learning improvement through technology usage.

Payment systems: ECS currently uses three payment systems: SchoolCafé is used for the payment of lunch options, Jackrabbit is used for the afterschool programs, and PayPal is used for the enrollment into clubs. The usage of three payment portals leads to confusion and inefficiencies, as described later.

SchoolMint: SchoolMint is the newly introduced (re-)enrollment software. Parents that wish to enroll their children into kindergarten have to apply using the software. In the following, the software will randomly provide spots to applications without any preselection criteria (=not merit based, which is one requirement for being a publicly funded charter school). Once students were

provided with a spot, they have to be re-enrolled every year but have the guarantee to stay until grade eight. If free spots become available, they are given to students on a waitlist.

The homepage of the ECS is managed and updated via WordPress by Nikole Sheaffer:
<https://ecspgh.org/>

Technology Management

The IT department consists of two internal team members and one outsourced IT support company. The Director of IT manages systems, policy, and projects while the IT coordinator manages helpdesk, repairs, and training for end users. User accounts are managed via the Google Admin Console which holds user access data such as username, password, and software access levels.

Director of IT: Todd Hoffman

IT Coordinator: Briggs Alden

Technology Planning

The Director of IT (Todd Hoffman) is currently leading a strategic planning process. He is working with 40 stakeholders to develop a new IT Strategic Plan that will look two years into the future. Key outputs from the plan will include IT roadmap, policy updates, IT department structure and mission, and budget recommendations. Goals include to position IT as a profit center that supports the achievement organizational objectives and operational needs instead of a cost center.

Todd Hoffman can take decisions within his budget, which he estimates at the beginning of the year and gets approved by the CEO and the COO.

Internal and External Communication

File sharing is done in Google Drive. Only specific people have access to sensitive data and much of it is read-only. Teachers collaborate on lesson planning in Google Drive and students are able to utilize their own accounts to collaborate with other students on projects.

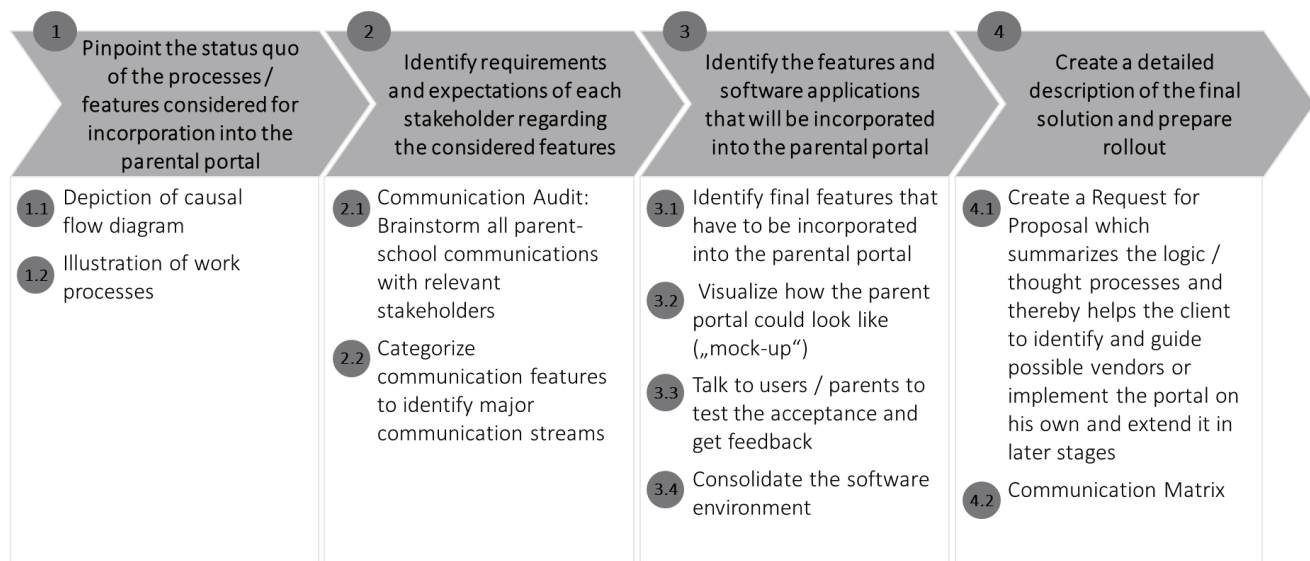
Nikole Sheaffer is furthermore responsible for communication with external stakeholders and the maintenance of the website.

Communication with parents currently takes place using various communication channels. That is, there is not one single touchpoint for communication or one person dedicated to bundling communication. Thus, every person that needs to receive information from parents (e.g., teacher, office managers, counsellor, nurse, club leader, afterschool program director) would contact them in the preferred way: e-mail, mail, phone call, newsletter, etc.

Business Systems

All accounting functions live with the Business Manager. ECS uses Blackbaud accounting software and is exploring aspects of the software that are currently being under-utilized such as donor tracking, and purchase order processing.

Scope of Work



II. Pinpoint the status quo of the processes / features considered for incorporation into the parent portal

Motivation

Understanding inefficiencies in current communication processes helped to identify the scope of work. Problems within the current state are redundancies of communication, complex communication processes with too many touchpoints and involved members, a lack of transparency with regard to who communicates, which medium is being used, and what message is being sent. Several activities that need to be taken care of by parents (such as paying various fees, signing absence forms) and the provision of communication or documentation are currently being managed using several technical solutions and platforms. This diversity of applications and processes causes inefficiencies communication flaws. Mapping those processes helped to truly identify the work streams that are related to each process. It was also helpful in communicating the project and its impact to stakeholders in the later stages of the process. This was thus the base requirement for the later improvements in order to decrease inefficiencies in communication. Resources that will get saved through those improvements can be allocated to activities that help achieving the mission of ECS.

Outcomes

Develop understanding of the communication inefficiencies:

In discussions with the client, the student consultant identified the scope of the communication inefficiencies that should be addressed within this consulting project. The outcome of those discussions is a) an understanding of the causal flow that leads to inefficiencies (appendix A) and b)

a sketch of two of the inefficient processes (appendix B) which helps to explain the motivation behind the project and the possible improvements to further stakeholders. The inefficiencies within these processes are caused by the fact that an unnecessary number of people are involved into the processes and that technology is not being utilized in order to facilitate the process. The example in the process contains the process of parents signing excuse notes for students. Involved into this process are teacher, office managers, students, and parents. However, office managers do only communicate information from the teachers to the parents. A technical solution like DocuSign could eliminate this touchpoint and help parents excuse their children in an efficient way, without having to print, scan, and e-mail excuse forms.

III. Identify requirements and expectations of each stakeholder regarding the considered features

Motivation

In order to identify each process that should be incorporated into the parent portal, a first audit of each communication stream between parents and the schools served as a basis to work on. Thus, it was essential to invite representatives of each stakeholder group to a brainstorming meeting in which the whole mass of communication processes got collected and mapped.

Outcomes

Develop in-depth understanding of each communication process:

In order to fully understand the communication that takes place between ECS and parents a brainstorming session was held with all stakeholders involved in communication, the client partners, and the student consultant. Stakeholders included teachers, counsellors, the nurse, office managers, and many more. This way it could be ensured that all relevant processes will be covered by the project. The processes were collected, elaborated upon, and finally categorized in collaboration with all participants (appendix C). In a second step, the client partners and the student consultant developed a communication matrix which incorporates all processes as well as a description of important with regard to who is in charge of the processes, what medium is used for communication, and more (appendix D).

IV. Identify the features and software applications that will be incorporated into the parent portal

Motivation

In order to ensure high user acceptance of the parent portal it was essential to identify all relevant communication processes. Thus, it was of utmost importance to develop a structured approach of identifying these communication streams. If and only if relevant processes are included, less important processes or information keeps its place on the original ECS website in order to avoid confusion or redundancies, the parent portal would serve the immediate needs of parents for effective communication and the project would be a success. A visualization of the intermediate outcome helped to interview users / parents and get early feedback.

Outcomes

Develop a structured and user-centered approach for identifying the relevant features and software solutions that are to be incorporated into the parent portal:

The project team narrowed down the big list of features into those features that have to be incorporated into the parent portal. The approach taken was to agree on criteria that help identifying relevant and important features. That is, thinking about use cases the team came up with two main criteria for assessing the relevance of each process: a) is this communication or information urgent or b) is it related to student progress. Apart from features that were then considered relevant, the team also observed the parent portal of a peer school and got inspiration. This way, several more features were identified as important for the parents / the users of the portal. This approach and outcome is sustainable, though the list of features in this dynamic environment needs to be updated continuously. Subsequently, the student consultant developed a mock-up visualization of the features in order to enable having a fresh view on the completeness of features. The client partners and the student consultant then tested this visual prototype with parents (future users) in order to identify missing features, opportunities to reorder and rename specific content in order to make it user-friendly, and get first feedback regarding design ideas. These include ideas like using colors to show within which specific sub-page new content has been added. In appendix E this mock-up is illustrated for the landing page and each type of content page. This logic would be introduced in a click-through to educate users.

Apart from identifying the final features, the client partners continuously researched software solutions that would help consolidating the existing fragmented software environment and linking it to the parent portal. The clients therefore talked to peers and vendors in order to identify suitable software applications. The concrete outcome is a better understanding of limitations and opportunities inherent to a) the current software applications as well as b) possible new software applications in the market with regard to making the system more integrated and easier to manage for both parents and the school. Concretely, the aim is to use as few software applications as possible but as many as necessary to provide the required functionality. Within this project the aim was to approach the problem from a content point of view and link the chosen software to the portal, if the portal itself would not provide required functionalities.

Specific findings with regard to a) the existing application are that several tasks such as payments could be incorporated into the existing accounting software (Blackbaud). This way, the client would not need to contact a new vendor. Furthermore, within the existing contract the vendor offers the client to develop each user account for the payment portal without a charge, which could then be linked to the parent portal. Additionally, several desired new communication features could be delivered through the existing software SchoolMint.

With regard to b) possible new applications findings are that the application MagnusHealth, which is being used by peers to manage student health data, would not deliver the required functionalities for the school.

To sum up, the client partners' understanding of the current software environment and the software applications offered by the market increased significantly.

By achieving communication clarity through the parent portal and making its use easier and more efficient through consolidating the software environment, parent involvement will be facilitated and thus increased. This, in turn has long been shown to lead to higher student learning outcomes and will thus contribute to achieving the school's mission (Herman and Yeh 1983).

V. Create a detailed description of the final state and prepare rollout

Motivation

This step was a summary of all ideas and thought processes that led to the final solution respectively the list of features that are to be included into the parent portal. It also included requirements for the parent portal. This was important for several reasons. First, it will help the client if he approaches vendors for implementing the solution. If the client, however, decided to implement the portal on its own, this paper will serve as a manual and help communicating objectives or requirements to peers. Second, the findings and documents in this phase can be used for communicating the project progress to the stakeholders that were involved in the initial phase of brainstorming and would thus ensure stakeholder satisfaction.

Outcomes

Prepare the implementation of the parent portal:

In the fourth and final phase of the project the student consultant delivered a request for proposal (appendix F) that the client will be able to use for approaching possible vendors or as a guideline to implement the portal himself. The Request for Proposal consists of three main parts:

- 1) Executive summary: The first part of the Request for Proposal is a summary of the whole paper. The reason is that this will help identify possible vendors as well as enable vendors to assess in how far they can provide the necessary expertise. If the client decides to implement the solution

himself, then this section helps communicating the project motivation to stakeholders during rollout.

- 2) Description of the current situation and the problems / opportunities: This section is important for possible vendors to understand the motivation and expectation of the client.
- 3) Theoretical depiction of a final state: In this section of the request for proposal, the functionalities of the parent portal will be described. In order to not limit possible vendors in their creative approach to solving the problem, no strict solution will be described. Rather, the student consultant will describe what functions and features are expected and how they improve the current situation. Furthermore, this sections helps to extend the portal in later stages since it provides the logic for which features have to be included and how. Some of the required features being explained in the request for proposal are the following (see Appendix E for the visualization in the mock-up):
 - A calendar that can be personalized with respect to several levels: Student (in case a parent has more than one child at ECS), activities (classes, clubs, afterschool program, trips), etc. Thus, parents should be able to check each of those elements and decide whether it is to be displayed in the calendar, just like it is possible with a Google calendar. This calendar should be integrated in a way such that it is very prominent and easy to find being on every page of the portal.
 - A “to do”-list on the landing page which shows all open tasks in the portal. Notifications for those will appear bold in the list in the portal and as a list in a weekly e-mail. As in e-mail systems, there should be a button to mark something as read.
 - Personalization: Furthermore, parents with multiple students at the school should be able to choose the specific student for which they are searching information in the easiest way (e.g. through a drop-down list). The aim of this personalization should be to minimize clicks and thereby increase the user experience.

Since this approach deliberately focusses on only describing the desired output (functions) and not how to achieve it, it is to be considered relevant no matter how the client decides to implement the solution. If the client implements the solution on his own using WordPress, then the document serves as a guideline for understanding the desired functionality and requirements as well as extending the parent portal in later stages. If, however, the client engages with a vendor, the Request for Proposal helps finding the right vendor and guiding the vendor in its work. Thus, it ensures that the implementation will be a success and help achieving the mission of ECS.

VI. Recommendations

A. Vision

ECS deploys a structured approach for continuously improving the software environment and is using technology in an innovative and proactive approach to efficiently communicate with stakeholders and to improve the learning experience of its students.

B. Goals

- 1) Develop a strategy and sketch a long-term roadmap (technology plan) and project charters for each project with regard to IT systems architecture.
- 2) “Learning at home” - Include video tapes of lectures and additional classwork-related learning resources into the portal.

C. Strategies

Goal 1: Develop a strategy and sketch a long-term roadmap (technology plan) and project charters for each project with regard to IT systems architecture.

a. Background

ECS should develop a long-term roadmap and a strategy with regard to the development of their systems architecture. The roadmap should include the milestones and the projects that are planned, whereas the strategy should provide a basis for choosing software applications and how to integrate them into the existing system.

b. Justification

This would ensure that exploring new software applications is done in a consistent way and that success in achieving the milestones can be measured. This helps ECS keep track of the system architecture and helps improving it continuously.

c. Strategies

- 1) The vision of the system architecture in the future needs to be depicted in order to understand what characterizes the perfect systems architecture.
- 2) A strategy for developing the systems architecture should be created in order to make deliberate decisions and improve the system in way that helps achieving the vision.
- 3) IT projects need be chosen with regard to their fit to the strategy. Then, each project has to be defined with regard to objectives, stakeholders, deliverables, milestones, tasks, responsibilities, roles, impacts, and more. This will help keep track of project progress and communicate expectations. An example of such a project charter is included in appendix G.
- 4) An IT-roadmap (technology plan) should be sketched based on necessary resources such as time and staff. The roadmap helps ensure that milestones can be met and sufficient time for planning, design, and implementation of specific software solutions is assigned.

d. Expected Outcomes

The observable outcomes are a documented strategy and roadmap.

e. Resources

Necessary resources include the Director of IT and his collaboration with Office Managers and other constituents of ECS such as teachers or admins of specific software applications in use. The time needed for achieving that goal depends on the time available to the Director of IT apart from operational work.

Goal 2: “Learning at home” - Include video tapes of lectures and additional classwork-related learning resources into the portal.

a. Background

Video tapes or live streams of lectures as well as additional learning resources should be included into a section of the portal for students that miss classes or need more time to understand content. Additional resources could be but are not limited to:

- Hyperlinks to websites that elaborate on the content (e.g. tutorials on YouTube or additional exercises)
- Bibliography of appropriate articles or books
- Additional exercises (with solutions) provided by the teacher

b. Justification

The motivation behind this idea is that in every case that a student is absent, the student's progress will suffer. After returning to school, the student has to catch up. However, if a student is absent because of reasons that would eventually not hinder the student from following the class online (e.g. in case s/he suffers from lice and is absent not to infect classmates) this function would help the student keep up with the rest of the class. Thus, it would help ECS achieve the mission of providing education. Apart from that, it would be a very innovative approach that could be used for reinforcing ECS's reputation for providing good education with innovative approaches to teaching. Additionally, ECS can easily offer additional material for those students that have difficulties with specific courses and need more material to do additional exercises at home in order to fully understand the class content.

c. Strategies

- 1) Teachers have to agree on providing additional resources at the portal and on taking responsibility for delivering those resources in a timely manner to the person maintaining the system.
- 2) Teachers and parents (on behalf of their children) have to agree on being videotaped. This should be achieved through explaining that videotaping lectures would increase the student learning outcome and thereby the mission achievement. This is in the interest of both the parents and the teachers and should therefore help to get their buy-in. Furthermore, the video-taped material would not be accessible for the public, but only for parents (students) and teachers who have access to the parent portal.

3) The specific solution needs to be implemented into the parent portal. This includes acquiring necessary devices, recording and editing video tapes, and finding and linking additional resources to the specific section in the parent portal or into the existing software Schoology, which, as explained in part I of this report, provides video functionalities.

d. Expected Outcomes

The expected outcome is the provision of actual class content at the parent portal including additional resources and thereby an increase in the student's learning outcome. This increase can be explained through the significantly positive impact of e-learning on the students' learning outcomes with respect to mathematical skills, reading, and writing (Kulik 2003).

e. Resources

Necessary resources include the portal admin, the teachers, a video camera, and the additional learning material. The necessary budget is very little and – apart from operational costs – limited to the costs of the video camera. “Panopto” is one of many firms offering a video platform that is being used in schools. They also provide evidence of increased learning outcomes after offering the video tapes additional to the lecture (Panopto 2017). Video-taping lectures is also common in medical schools (Parikh 2002). However, in Pennsylvania, every party to a conversation has to consent to recording (Findlaw 2017).

About the Consultant

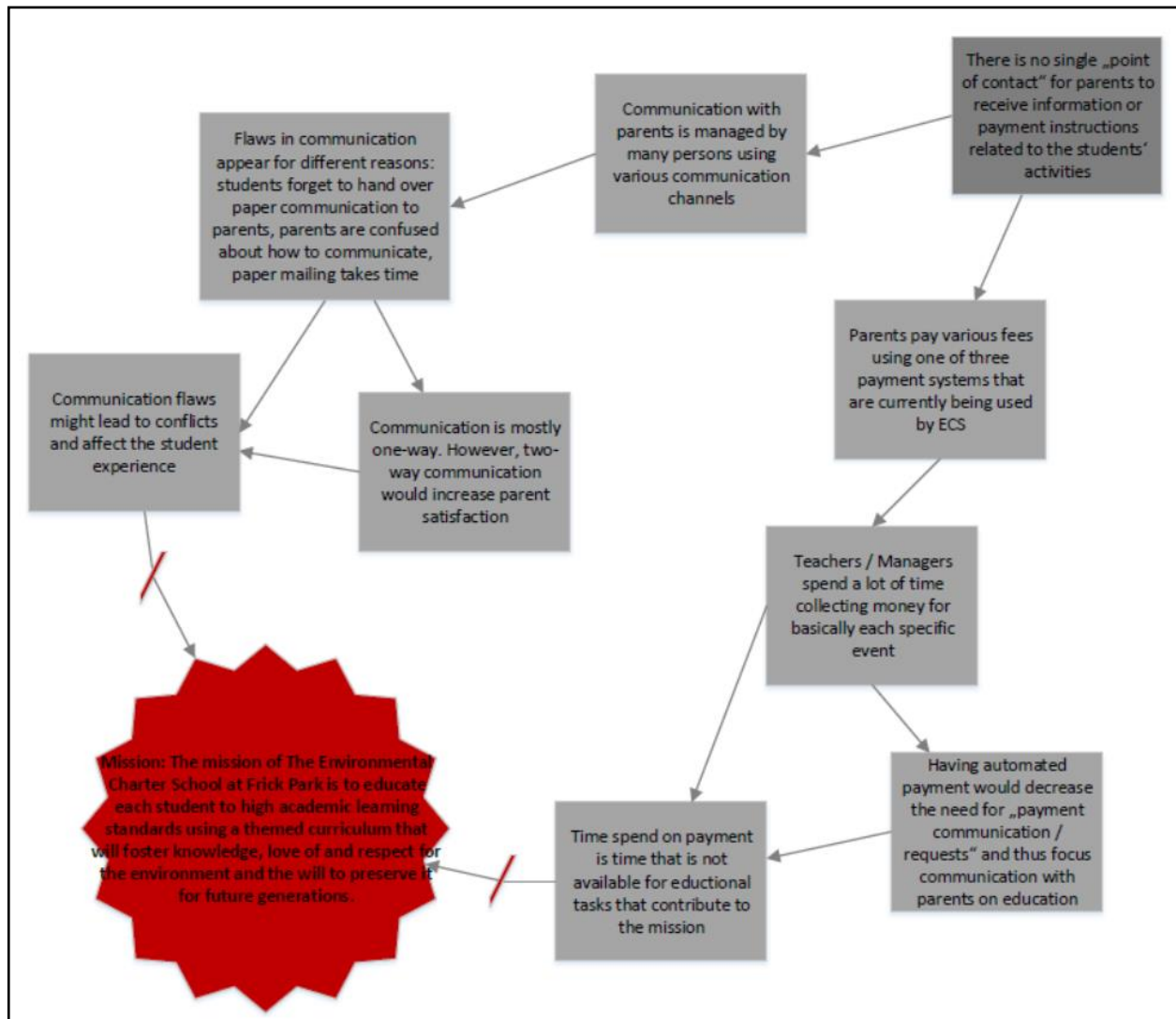
Carsten Fandel is a graduate student from Germany. At his home university, the University of Mannheim, he pursues the graduate degree “Mannheim Master in Management” (M.Sc.). At Heinz College, Carnegie Mellon University, he is enrolled into the “Master of Information Systems Management” within the scope an exchange semester. With expertise and interests in the fields of Marketing, Innovation, and Digitalization he will return to Germany after the Spring Semester 2017. There, he will complete an internship at a consulting firm in Frankfurt before graduating and starting his career as a business consultant or a PhD.

Works cited

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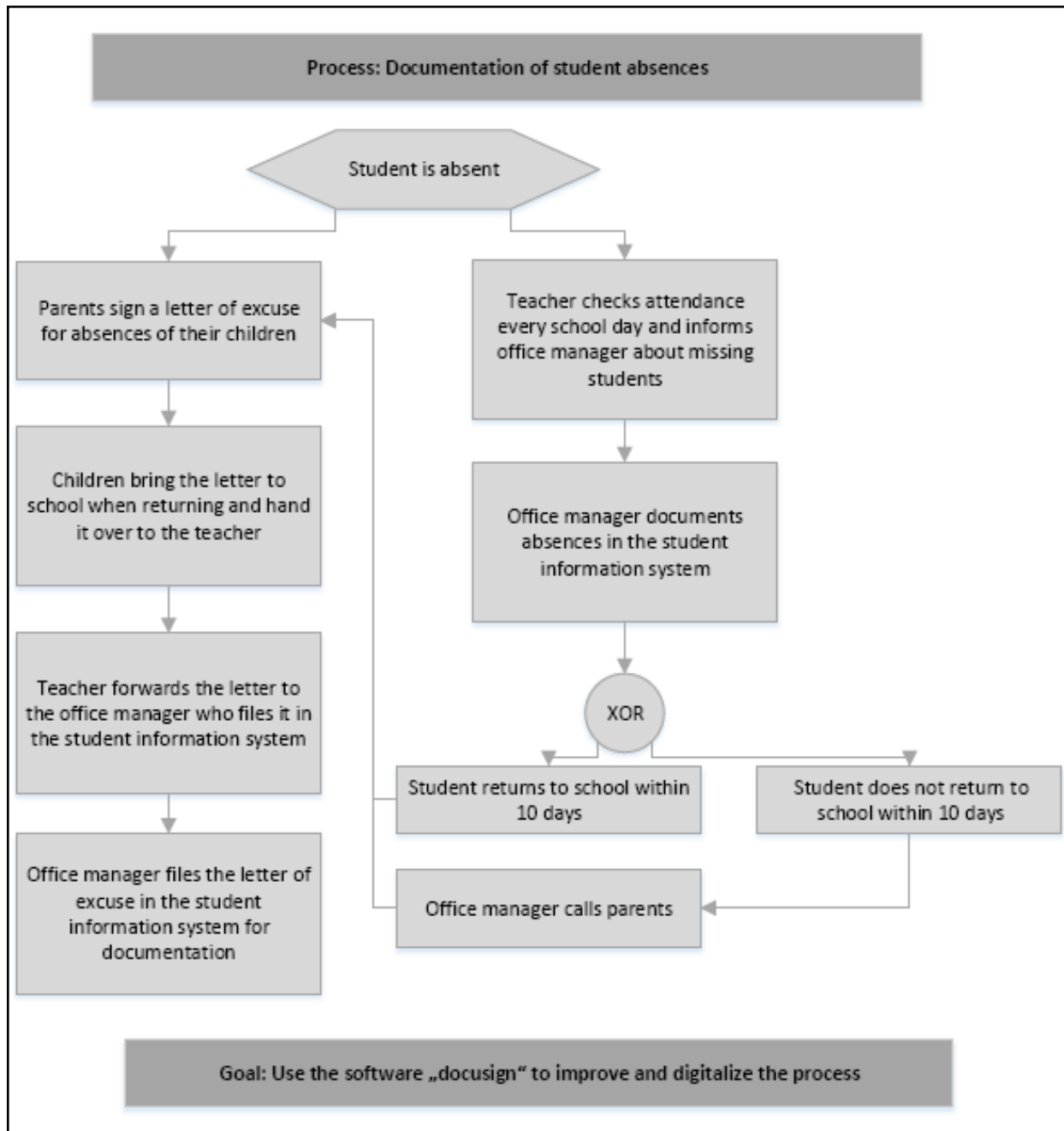
Appendix A.

Causal flow diagram



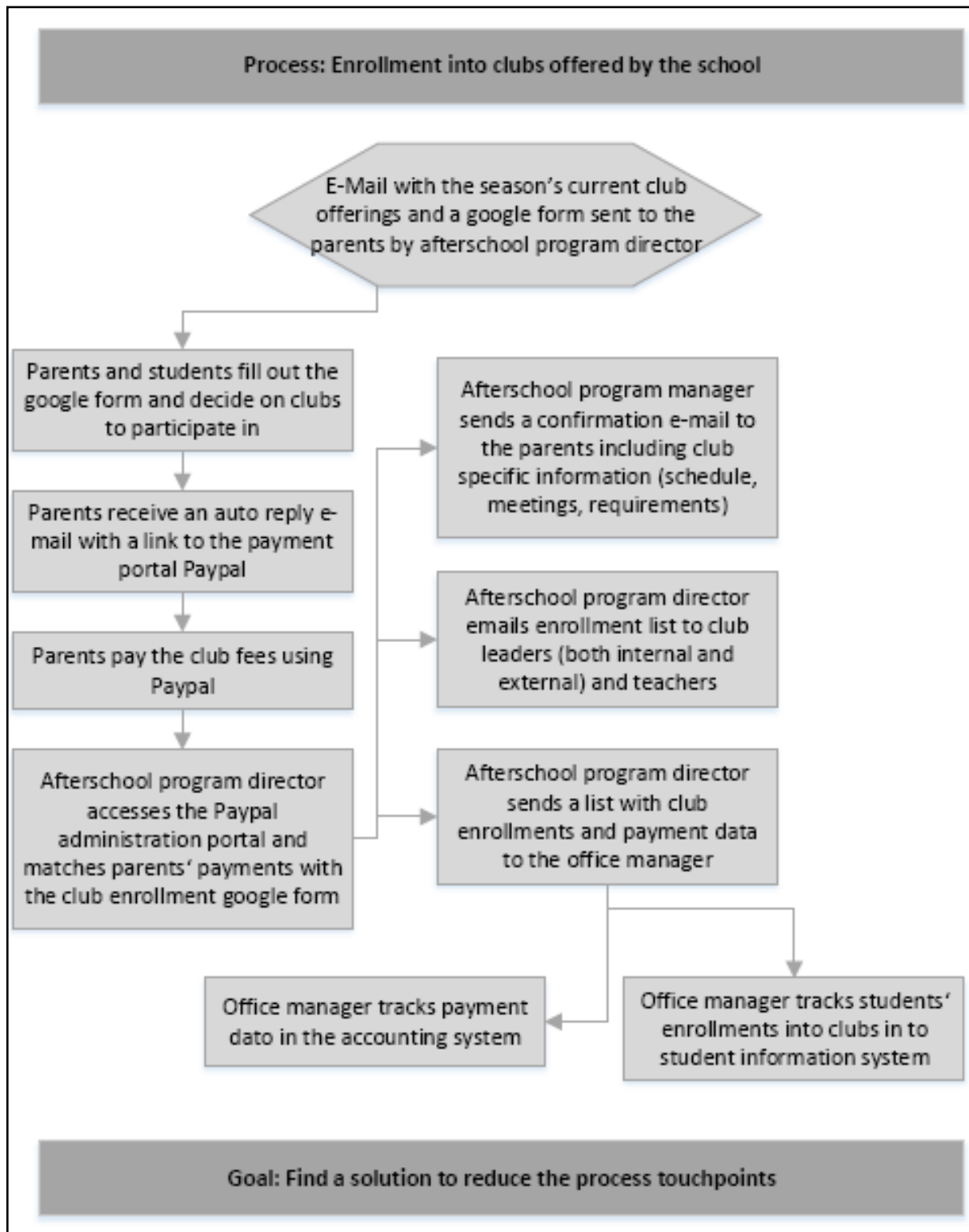
Appendix B (1).

Process diagram: Documentation of student absences



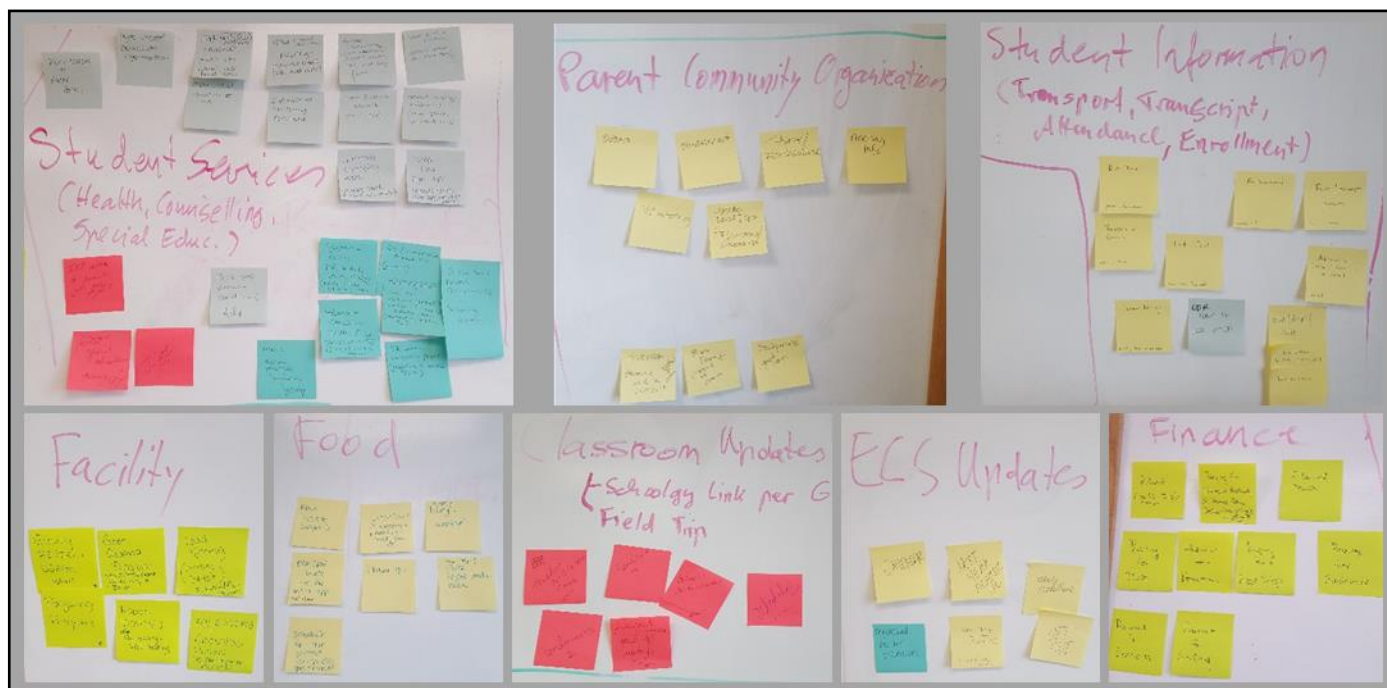
Appendix B (2).

Process diagram: Enrollment into clubs offered by the school



Appendix C.

Categories of communication processes



Appendix D.

A part of the Communication Matrix

1	Feature	Category	Location of information (on portal itself, website or fed from / link to other software)	Message	Responsibility	Communication Log (short description of process: Where is that information shown? manages this process / sends out e-mail / u information like website)
2	Academic calendar	Academics	portal	information about school year, holidays, clo	Office Manager	https://ecspgh.org/events/2016-2017-calendar/
3	Conference Sign Ups	Academics	portal		Grade Level Leader	via E-mail? by whom?
4	Field trip announcement and payment	Academics	portal	form (allowed to go to field trip) and link to p	Grade Level leader	via E-mail, by Grade Level leader, on monday?
5	Grade Level Weekly Newsletter	Academics	portal		Grade Level leader	
6	Weekly homework	Academics	portal		Grade Level leader	communicated in weekly teacher newsletters (c
7	Schooling link	Academics	schooling	short description of functions offered by sch	Grade Level leader?	https://app.schooling.com/login
8	Afterschool Program Enrollment & Payment	Activities, Sports, and Extracurricular	portal	programming,dates,how to enroll, how to pa	Afterschool Director	Monday Blast, Website: After school director. F
9	Club Enrollment & Payment	Activities, Sports, and Extracurricular	portal	programming,dates,how to enroll, how to pa	Athletic and Afterschool	Monday Blast, Website: After school director. F
10	Sports Enrollment & Payment	Activities, Sports, and Extracurricular	portal	programming,dates,how to enroll, how to pa	Athletic and Club Coordin	Monday Blast, Website: After school director. F
11	Class assignments, performances, reminders, etc.	Announcements	portal		Office Manager	fall mailing paper
12	Student Personalized Calendar	Custom Personal Calendar	portal		IT Director	not yet provided?
13	Directory (teacher, admin, parents)	ECS Resources	portal		Office Manager	Parent to Parent directory (PCO) printed and e-
14	ECS Handbook	ECS Resources	portal		Office Manager	fall mailing, asks parents to look for it online, si
15	PCO	ECS Resources	portal	announcements, info, link to payment secti	TBD	http://ecspco.org
16	School Supplies	ECS Resources	portal		Office Manager	summer mailing,
17	Uniform Guidelines	ECS Resources	portal		Office Manager	Currently in the handbook? also on the website
18	ECS Enrollment Documents	ECS Resources	schoolmint		Office Manager	school mint
19	ECS Media Release or Opt Out	ECS Resources	schoolmint		Office Manager	?
20	ECS Policies (device agreement etc.)	ECS Resources	schoolmint		Office Manager	fall mailing, asks parents and students to look f
21	ECS Re-Enrollment	ECS Resources	schoolmint	communicate, parent enrolls, email confirm	Enrollment Coordinator	
22	Parking Policy	ECS Resources	website & portal		Office Manager	fall mailing,

Mock-up of the parent portal

Landing Page

WORK IN PROGRESS

Alice ▼



April 2017 <table border="1" style="font-size: small; width: 100%; border-collapse: collapse;"> <thead> <tr><th>Mo</th><th>Tu</th><th>We</th><th>Th</th><th>Fri</th><th>Sat</th><th>Sun</th></tr> </thead> <tbody> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td>1</td><td>2</td><td></td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> </tbody> </table>	Mo	Tu	We	Th	Fri	Sat	Sun	27	28	29	30	1	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	Classroom	After school	Transportation & Attendance	Student Services and Resources?	Health	Payments
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To do - Task - Task - Task - Task - Task - Task	Announcements*	Lunch	ECS Information	PCO	Downloads																																																		

[illegible]

WORK IN PROGRESS

			1-50 of 152		
	Office of International .	IMPORTANT! Your immigration Document End Date! - Hello, OIE records indicate that your I-20 or DS-2019 has a program end date in May. Unless you are cor			1:39 pm
	Michael D Smith - mds@cmu	S17.56732: Marketing Digital Media: Readings for Tomorrow and Video From Yesterday - Hi Foks, Two quick items: 1. We recorded Derek's talk yesterday and I'm			11:43 am
	Michael me (9)	Papers - Hi Carsten, it was great meeting with you today. Here is the paper I mentioned that explains different empirical methods of analyzing the impact of privacy c			10:37 am
	me, Jordan (3)	Presentation - 1. You have 25 minutes total for presentation and questions. Divide that as you'd like. 2. yes that's fine. Jordan R. Palitto: The Hill Group, Inc. 724-4			8:33 am
	Todd Hoffman (Google) (2)	Visualization of features.pptx - Todd: Hoffman added comments to Visualization of features.pptx New 4 comments New Comments Todd	Open Discussion		Apr 25
	Christine Menard	Spring 2017 - Important Exchange Student Information - Hello to all Spring exchange students- I cannot believe it is getting close to the end of term! I hope you wer			Apr 25
	apoorva reddy	Invitation: Design Presentation @ Sat Apr 28, 2017 1pm - 4pm (cfunde@andrew.cmu.edu) - more details > Design Presentation When Sat Apr 28, 21	RSVP		Apr 25
	me, Todd (4)	First draft of Final Report - Hey Carsten, I don't have anything specific and I'm happy with any format that you choose. Todd Hoffman: Director of Technology Environ			Apr 25

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A 2x4 grid of green circles, each containing a text link. The links are arranged in two rows and four columns.

Schedule	Schoology Link	Field trip announcement and payment	Grade Level Weekly Newsletter
Weekly homework	Conference SignUps	Academic calendar	Specials exploratory PRIME Time

Appendix F.

Request for Proposal

Request for Proposal – Implementation of a parent portal, Environmental Charter School, 2017

WORK IN PROGRESS

1. Executive Summary

The information given in this request for proposal is based on the wish of Environmental Charter School (ECS) to improve communication between the various employees of the school and the students' parents. The motivation behind improving the parent-school communication is based on empirical findings that show that parent involvement leads to significantly higher student learning outcomes and thus helps achieve the mission of ECS. Apart from improving the effectiveness of communication, the project partners also seek to improve the efficiency of the relevant communication processes in order to save resources, decrease redundant communication, and achieve transparency. Also, the parent portal is supposed to increase the parents' user experience and thereby their satisfaction, which again leads to higher parent involvement.

The project is led by

- **Todd Hoffmann** (IT Director) in collaboration with
- **Kristan Abeshouse** (Afterschool Program Director) and
- **Nikole Sheaffer** (Director of Innovation).

During the Spring Semester 2017 the client partners collaborated with a student consultant from Carnegie Mellon University within the scope of the class "IT Consulting" in order to prepare ECS for the implementation of a parent portal as a means to achieve the above-mentioned improvements. The first important outcome of this process was a communication audit in which the client partners, the student consultant, and all affected stakeholders (teachers, counsellors, administrative staff, parents, nurse, etc.) brainstormed and categorized all existing interactions (one- and two-way communication) between parents and ECS. Based on that list, the client partners and the student consultant identified all relevant communication processes which are to be incorporated into the parent portal.

2. Problem Statement

Problems within the current state are redundancies of communication, complex communication processes with too many touchpoints and involved members, a lack of transparency with regard to who communicates, which medium is being used, and what message is being send. Several activities that need to be taken care of by parents (such as paying various fees, signing absence forms) and the provision of communication or documentation are currently being managed using several technical solutions and platforms. This diversity of applications and processes causes inefficiencies communication flaws. Two processes, which incur too many touchpoints and might be facilitated through using technology and especially through having a parent portal, are included in appendix 1. It is also the aim to consolidate the existing software system while providing the required functionalities. Thus, new software applications should only be implemented if required functionalities cannot be provided using existing software applications.

3. Future state

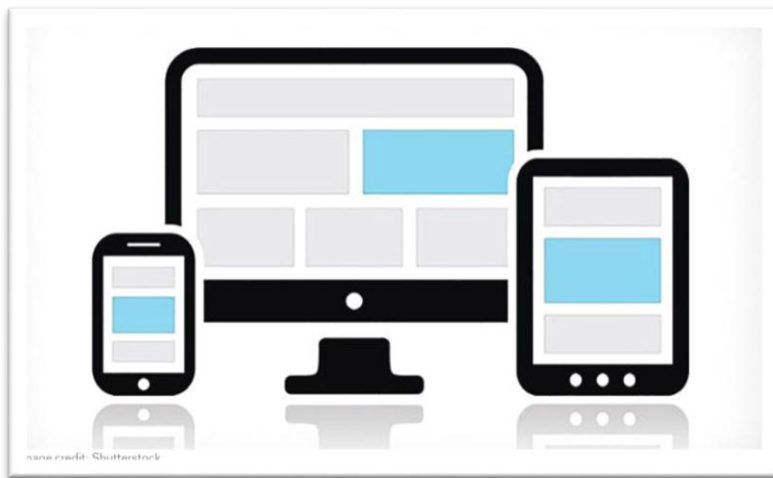
In the future state, enabled through implementing a parent portal, all relevant communication between ECS and the parents is done at one consistent place. Relevant information within the scope of this project is defined as information that a) urgent and b) relevant for the student's progress. A matrix with all communication streams ("features") that need to be incorporated into the parent portal has been created. These include static information (information that is unlikely to be changed or updated for a significant amount of time once it has been created), hyperlinks to software applications such as payment portals, and features that are continuously updated as they communicate with other software applications (e.g. the customized personal calendar). Features that require explanation are listed as follows and visualized in appendix 2 (the mock-up):

- A calendar that can be personalized with respect to several levels: Student (in case a parent has more than one child at ECS), activities (classes, clubs, afterschool program, trips), etc. Thus, parents should be able to check each of those elements and decide whether it is to be displayed in the calendar, just like it is possible with a Google calendar. This calendar should be integrated in a way such that it is very prominent and easy to find being on every page of the portal.
- A "to do"-list on the landing page which shows all open tasks in the portal. Notifications for those will appear bold in the list in the portal and as a list in a weekly e-mail. As in e-mail systems, there should be a button to mark something as read.
- A chatbot that allows the user to ask questions and thereby easily find information.

Requirements of the parent portal:

- The parent portal should incorporate the ECS corporate identity and thus it's colors and forms. It should however be easy to differentiate from the current website.
- It should appear modern and be designed responsive with respect to the desktop size of the device that is being used (figure 1).

Figure 1: Responsive webpage design



- Users should continuously be involved in the design and implementation process. This ensures that users that are less technical-savvy will be able to use the parent portal to its fullest advantage.
- Create simple user experiences.
- It should be structured in a way that only relevant information is shown to the parent. Thus, a parent of a student from grade 2 should be able to see information on the transition to middle school, whereas s/he should not see the transition information to upper school in order to avoid confusion. Thus, a possible scheme for differentiating the amount of information shown might be the school level (lower school / grades K-3, upper school / grades 4-8, high school / grades 9-12).
- Personalization: Furthermore, parents with multiple students at the school should be able to choose the specific student for which they are searching information in the easiest way (e.g. through a drop-down list). The aim of this personalization should be to minimize clicks and thereby increase the user experience.
- If possible, information should not be redundant to information on the original website. Thus, if information is to be included that also exists on the original ECS homepage, then this information should be provided through a link that refers the user to the original website. This is important for features like "Making a donation to ECS" within the Finance section of the parent portal. Features like that need to still be included in the original website, since also externals could want use that feature (donate to ECS).

Goals:

- Increase efficiency and effectiveness of communication between parents and the school for both parties.
- Decrease redundant communication through having a single touchpoint.
- Achieve transparency.

Appendix G.

PROJECT CHARTER				
PROJECT NAME		DATE	AREA OF FOCUS	
Implement End-User Feedback Team		1/20/15	New Product Development	
BUSINESS CASE		SCOPE		
End-user feedback is essential early in the product design process, before designs are finalized and investments are made in tooling and equipment. This project will implement the End-User Feedback Team - a new organization that will (1) gather end-user product preferences prior to prototyping, (2) solicit feedback on prototypes, and (3) conduct field testing with engineering-build products (prior to production tooling).		IN SCOPE		OUT OF SCOPE
		Domestic new product intro's		International
		Industrial products business		Consumer products
		In-house designs		
		KEY DELIVERABLES		
		Proposed organization chart	Team on board	
		Approved orgnaizational chart	Training/orientation complete	
		Finalized budget	Standard work and reporting finalized	
		Finalized job descriptions		
		Manager on board		
MEASURABLE TARGET/GOAL		TIMELINE		
Finalize organization outline	2/20/15	ACTIONS/MILESTONES		TARGET DATE / STATUS
Finalize and approve budget	3/10/15	1/2 day session: develop high level requirements and org chart		2/1/15
Develop and grade positions	4/2/15	Org chart & budget approval meeting		3/5/15
Hire manager	6/1/15	Team job descriptions approved and handed off to in-house recruiters		3/28/15
Staff remaining positions	9/15/15	Manager job posted internally and sent to three external recruiters		4/15/15
		Interview period - manager		5/1/15 - 6/15/15
		Manager Hired		7/1/15
TEAM MEMBERS				
NAME	FUNCTION	Staff interviews and hiring decisions		7/15/15 - 9/1/15
Gerry Betran	R&D Leader	Staff positions filled		9/15/15
Bo Hamilton	Human Resources	Training/orientation complete, team's role integrated into Milestone proc.		10/15/15
James Gapp	Marketing			
Hank Ankeny	Field Marketing			
Mike Cote	Supply Chain			
		FINANCIALS		
		BUSINESS IMPACT		INVESTMENT
		Increase new product demand 10% (conservative) by ensuring that product performance and features exceed expectations		Ongoing annual expense: \$1.2M
ASSUMPTIONS/CONSTRAINTS		RISK PLANNING		
Team must be functioning by 9/15/15 for major NPI project		The end-user feedback team will need a highly experienced leader who will work very well with customers, R&D, and marketing functions. Filling the leader position with the right individual is critical to the new organization's success.		
\$1.2M annual budget				

Source: <https://projectmanagementskills.info/project-charter/>