



# Timothy Smith Network — Technology Hub

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**“Bridging the digital divide is about providing everyone with  
the same opportunities to education and employment”**



## Executive Summary

The Timothy Smith Network technology hub is a proposed new headquarters where the daily operations of TSN staff can be carried out. The proposed space will be equipped with a classroom, desk spaces, a comprehensive makerspace, meeting rooms, and a tech lending library open to community members. Boston Design Academy programming and community digital literacy workshops will be run through this new space as well as potential new programs that will be explored later in this document.

## Background



Trinity College Dublin  
Coláiste na Tríonóide, Baile Átha Cliath  
The University of Dublin

My name is Abo I'm an undergraduate Biomedical Sciences Student, and at the start of 2024, I was awarded an 18-month research scholarship from the Laidlaw Foundation at Trinity College Dublin. This opportunity allowed me to spend the summer of my second year conducting meaningful research into Alzheimer's disease — an area closely tied to both my academic and personal interests.

This Summer, I again wanted to conduct research in an area that I am passionate about — education. Growing up, my parents coming from immigrant backgrounds always emphasised the importance of education. Not only did I grow up with the belief in education to foster self-assurance and growth, but the power of education in breaking generational cycles of poverty has become increasingly clear to me as I progress academically.

I wanted to find a way to give students a chance to explore personal educational interests beyond the constraints of standard curricula for my Leadership-in-Action Project. With a focus on expanding educational and career opportunities for underrepresented groups, I developed a proposal for an educational hub. Through the Laidlaw Network, I learned about the Timothy Smith Network and I had discussions with a scholar at my university who had interned at TSN last summer. I decided to reach out to Alessandra Brown at TSN, and coincidentally, she shared that they were also exploring the idea of a technology-focused space.

The Timothy Smith Network was a perfect fit, with its commitment to empowering underrepresented individuals in education and careers in an increasingly tech-driven world!



### **What is the issue?**

We have seen the great positive impact of Timothy Smith Network's programming in the Roxbury community, particularly in how it opens up educational and career pathways for program alumni.

TSN's distributed model of delivering programming across various locations, however, limits its reach. Without a consistent "home" or dedicated space to return to, it can be difficult for participants to maintain long-term engagement or continued exploration in technology once their initial programs or workshops have concluded.

Further, at present, TSN operates by providing lessons and workshops to partner organizations and groups within its existing network. While this has allowed us to maintain valuable relationships, it restricts broader, sustained public engagement. Establishing a dedicated space would enable members of the public to access our resources more freely and consistently.

Over the course of **five weeks**, I conducted a series of surveys, focus groups, and facility tours across makerspaces in the Greater Boston Area. My goal was to uncover the Roxbury community's needs for technology-focused spaces and to explore the underlying mechanisms by which these spaces are planned, funded, managed, and promoted to the community. I engaged directly with the Roxbury community by through surveys and focus groups.



**Online Surveys** (Microsoft Forms) were sent out to James Tukpah at Northeastern University to share with deans and student org leaders as well as the veterans at the Harvard Street Veterans Outreach Center. A scannable QR code link to the survey was also posted on 13 local stores. An online staff survey was also created.

**One-on-one or Group Teams/Voice calls** were conducted with BDA alumni, a past Tufts volunteer as well as AMP interns

**In-Person Focus Groups** were carried out with a group of 11th Grade students at TechBoston Academy (high school) and elders at Central Boston Elder's service



# Main Findings from Surveys and Focus Groups

## Reimagining Programming...

Regarding the reshaping of programs at TSN, surveys found that it would be beneficial to consider implementing the following modifications to expand learning opportunities and student engagement


### Digital Media Program

Both past and current TSN students expressed interest in various areas of digital media production, including

- Video game creation
- Video production and editing
- Camera operation, photography and photo editing
- Animation
- Podcast creation, audio editing and music editing.

### Digital Design Intensive


Participants expressed interest in a slightly more challenging program, suggesting the inclusion of additional software like MediBang Paint and ibisPaint to further enhance their skills.

 It would be beneficial for TSN to explore expanding its relationship with Microsoft Garage to include the provision of introductory workshops to students into softwares their labs are working on (explored in further detail later).

### Digital Literacy Workshops

The following workshops were suggested by individuals interested in career progression and business. Seniors also expressed interest in these courses;

- Excel
- Website-building
- Logo creation
- Beginner's coding


 An entrepreneurship-focused workshop series, covering skills like logo creation and website building, could support career progression in Roxbury by bridging the gap between digital skills and entrepreneurship.

## **Turning Vision into Action with Partners...**

**NewView. Media** is a digital media production company based in the CIC building in Cambridge. Its mission is to elevate often-overlooked voices and ideas, creating impact through video production and animation.

After in-person meetings with Founder and CEO Tom Dodge, he expressed interest in offering 90-minute video production and editing workshops this fall for students, using equipment and software such as Adobe Premiere Pro. Looking ahead, we discussed the potential for him and his team expanding on this for a more structured and comprehensive collaboration next summer, possibly including animation sessions.

Both current and past BDA students expressed interest in expanding the program to include digital media. This would offer participants a valuable opportunity to gain foundational skills in digital media — an area increasingly relevant in today’s world, shaped by social networks, entertainment industries, and even marketing, as one survey participant pointed out.

 Our collaborators at the **Boston Neighbourhood Network (BNN)** could potentially be involved in these efforts, given their expertise in the multimedia space. Their involvement would benefit both parties, as TSN’s youth programs in this field could **create pathways for students to eventually intern or work at BNN. Notably, TSN’s programs are unique compared to competitors because they specifically target individuals with no prior experience, encouraging educational and career pathway expansion for youth.**

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**Microsoft Garage** is an innovative space where Microsoft interns and employees collaborate to brainstorm, prototype, and develop new ideas and projects, some of which may evolve into fully developed applications available to the public.

Leveraging our partnership with Microsoft Garage could provide BDA interns with access to expert-led workshops, mentorship opportunities, and cutting-edge resources. Giving students

insight into the exciting ongoing projects at Microsoft Garage would greatly expand TSN's programming to better reflect the cutting-edge innovation happening right here in Boston.

Discussions are ongoing with the Senior Program Manager at Microsoft Chris Templeman pertaining to a team or group of interns from the Garage leading a demo or interactive session for AMP interns later this coming Fall.

This would be an incredible opportunity for our students to engage with real-world applications of emerging technologies and learn directly from innovators in the field.

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**Frugal Bookstore** is a Roxbury-based black-owned bookstore with a passion for promoting literacy among local youth.

Bookstore owner Leonard Egerton expressed an interest in sourcing technology books for the lending library space in the proposed hub upon provision with a book list.

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## Findings from makerspace visits

**Between weeks two and five of my research** I paid visits to a series of makerspaces in the Greater Boston Area. I had discussions with the makerspace managers in order to better understand the processes behind the running and the development of the makerspace area of the proposed TSN hub — including the planning, design, and community needs that informed its creation. Facility tours and discussions also helped to inform my perspective on optimal layout of this space.

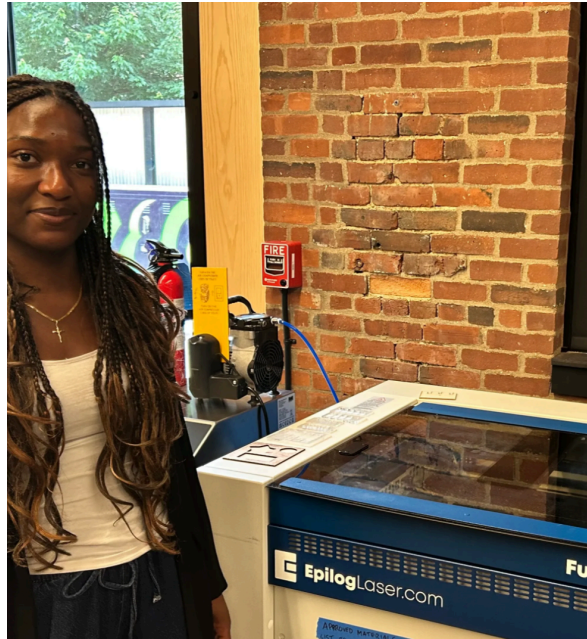
The makerspaces in question are



The Clubhouse Network, Roxbury *Brendan Casey, Manager*

The Hive Makerspace Cambridge Public Library , *Emily St. Germain STEAM Programs Manager* (virtual discussion and tour)

The Cambridge Foundry, Cambridge *David Seigel Makerspace Director*



This, alongside extensive desk research, allowed me to come to the following conclusions;

## Inclusion of Fab Labs

I found that experience with technology devices in Roxbury is generally low, despite a clear desire of community members to improve technological and digital literacy skills being clear across various demographics. Research suggests that it may be beneficial for TSN to include a *Fabrication Lab* (FabLab) area designed to engage individuals who may not be familiar with technology, helping to ease them into tech exploration through accessible and familiar activities.



In particular, *seniors* could greatly benefit from the integration of *fiber arts tools* such as sewing machines. In a focus group conducted with 18 seniors at the Central Boston Elder Services, **9 individuals (50%) expressed a desire to have access to sewing machines.**

Additionally, participants suggested a broader range of fiber and design-related activities, including:

- Knitting
- Crocheting
- Quilting
- Rug hooking
- Wall panel creation
- Jewellery design



When asked specifically about jewellery-making, **7 participants (38.9%) expressed interest** in having a dedicated area for this craft.

These findings highlight an opportunity to create a welcoming and creative space that meets the interests and needs of older adults, while gradually introducing them to more advanced tools and technologies in a comfortable setting. The inclusion of a Fab Lab would prioritise beginner accessibility.



Image — School of Visual Arts NYC Webpage BFA Fine arts The Fibres Lab

Visits to makerspaces across the Greater Boston Area further informed this assessment, as managers consistently noted the overwhelming popularity of fab labs and fiber arts labs, particularly among users new to technology.

### **Proposed services and tools**

*Detailed description of FabLab official requirements*

<https://www.fablabs.io/>

*Machines list*

<https://www.fablabs.io/machines>

*Machines Projected to be Popular*

Sewing machine

Laser cutter

Vinyl cutter


# Peak usage times

Based on research of comparable spaces and conversations with makerspace managers, peak usage hours for the **makerspace** occur in the afternoons and evenings. Specifically, Friday and Saturday afternoons tend to be the busiest periods. **Desk spaces** (during the academic year) sees peak usage in the afternoon between 3:30 and 5:30 p.m. This was elucidated through discussions with high school, university students and local library staff.

Additionally, evenings in November and December see increased activity in maker space and desk space usage, likely due to individuals working on holiday-related projects or academic assignments. Conversely, usage typically **slows during the summer months**.

**The vast majority of survey participants indicated they would like to use the hub at least once per week.**

To best serve the target demographic, **particularly working and schooling individuals with daytime commitments**, operating hours should include evening availability, ideally extending to 8:00–10:00 p.m, primarily on Friday and/or Saturday Afternoons.

 **It would be in TSN’s best interest to launch the hub during the September-November timeframe, potentially in to capitalize on the high demand for such a space during this time.**

## Proposed opening hours

Day	Opening hours
Monday	12 PM – 10 PM
Tuesday	12 PM – 10 PM
Wednesday	12 PM – 10 PM

<b>Thursday</b>	12 PM – 10 PM
<b>Friday</b>	12 PM – 10 PM
<b>Saturday</b>	8 AM – 10 PM
<b>Sunday</b>	8 AM – 10 PM

## Technology Hub Space Proposed Location & Layout

### Location

- Connectivity to the **Orange Line train** was the most frequently mentioned transit preference, followed closely by the **Green Line**. Several respondents also expressed interest in nearby bus routes, specifically **lines 15, 23, 28, 44, and 48**.
- While **green spaces** were not considered an essential service, there was notable interest in their **proximity to food establishments** — particularly among high school students (including AMP interns) and seniors

**A collaboration with the South End Technology Center (SETC) has been proposed to utilize their building as a dedicated community technology hub.**

### Layout

- Although I did not have the opportunity to explore the South End Technology Center in person, it would be highly beneficial to visualize the proposed plan within that space using digital design software such as **SketchUp**.

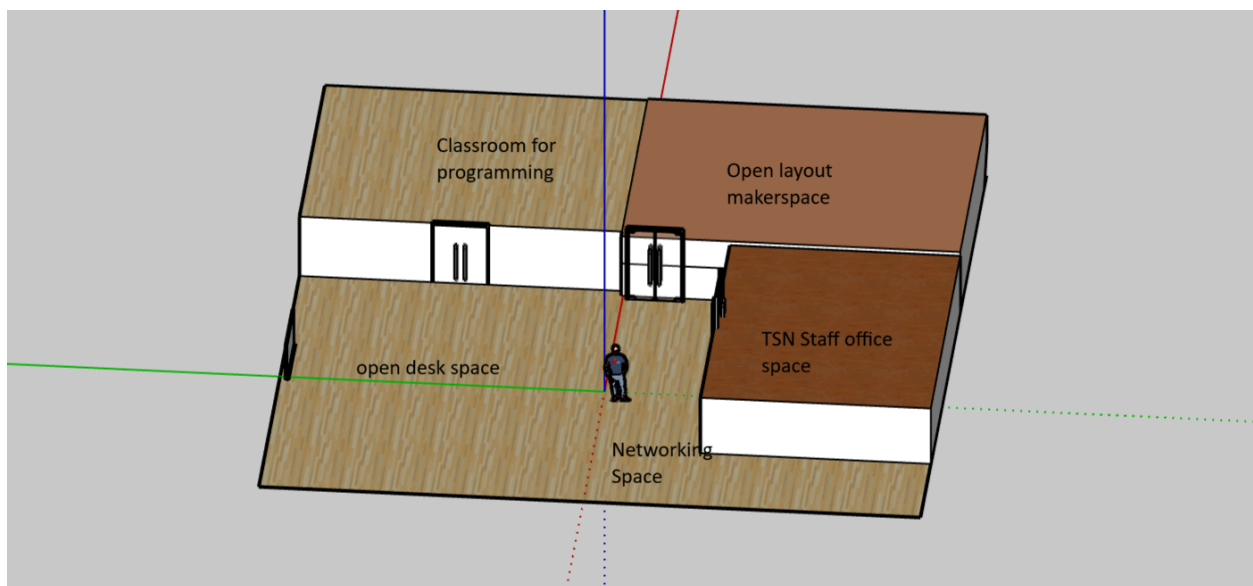
The proposed layout features an **open-floor format upon entry**, with a series of public desk spaces positioned to one side. Adjacent to these desks would be a small lending library. The

remaining open area could also serve as a flexible space for networking and guest speaker events hosted by TSN.

Beyond this area, a **closed classroom is proposed for programming and digital literacy classes**. Alternatively, the public desk space may be utilized for these sessions when appropriate. Ideally, **another larger enclosed room will function as the main makerspace**. This space will be loosely divided into distinct zones, including a Fab Lab, a video game trailing & digital media production zone (featuring a TV for videogame and video trailing), and a traditional programming zone with the likes of Arduino kits and 3D printers. An open floor plan within this makerspace is recommended to promote ease of movement and allow staff to provide support across zones efficiently.

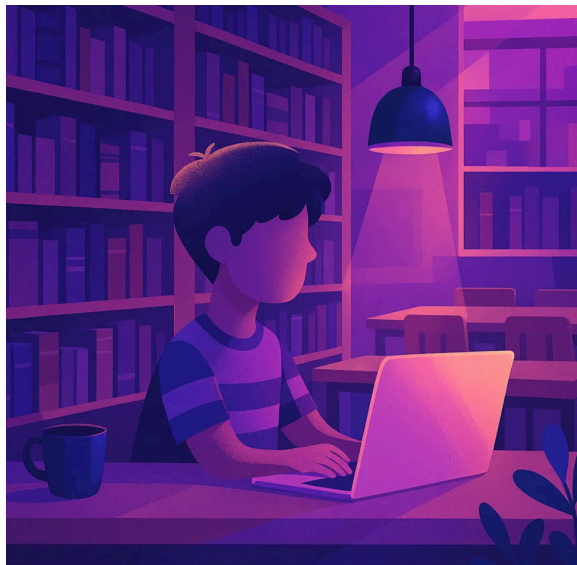
While silence was not identified as a critical requirement, some participants suggested that soft background music could enhance the environment. In contrast, meeting rooms and designated desk spaces were noted as especially valuable and should be maintained as quiet areas to support focused work.

Finally, a **separate room will be designated as office space for TSN staff**, designed based on the consensus from the staff survey.



Sample SketchUp interpretation of tech space layout, Abo Obhakan

# The Technology Hub Services Overview



## Open access desk spaces

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### Considerations for desk spaces

- Desktops and tablets
- Loaner laptops and loaner cameras ideally also available upon request
- Quiet space
- High speed Wi-Fi
- Charging points
- Operates on an online scheduling system to avoid overcrowding (research suggests that this may not be necessary)
- User-friendly interfaces are available for individuals unfamiliar with desktop computers\* *Desktop mode on “simplified”, touchscreen desktops, large icons and labels, a clear list of shortcuts should be placed beside accessible desktop stations to facilitate inexperienced users. Users should be encouraged to use a personal notebook to take notes for their improvement.*
- Informative lists as to what software are suitable for different functions
- Additional devices such as headsets

- Research suggests that it would be in TSN’s best interest to pursue collaborations enabling the **provision of free subscriptions** to the following platforms, which are of interest to past TSN program participants and other community members;

**Productivity & Office:** Office 365

**Creative & Design tools:** Procreate, Adobe Creative Cloud, Wix, Go Daddy, MediBang Paint, Ibis Paint

**Music creation:** BandLab

▼ Other notable platforms

**Creative & Design Tools**

Adobe Creative Cloud

Procreate

Canva

Figma

Blender

SketchUp

Krita

**Productivity & Office**

Google Suite (Docs, Sheets...)

Notion

Trello

Slack

Miro

**Web & Content Creation**

WordPress

Squarespace

Substack

**Audio & Video Production**

GarageBand

Audacity

DaVinci Resolve

OBS Studio

Adobe Premiere Rush

Final Cut Pro

iMovie

CapCut

Adobe After Effects

VLC Media Player

HandBrake

Animoto

Clipchamp

### **3D Design & Engineering**

Fusion 360

AutoCAD

Tinkercad

Onshape

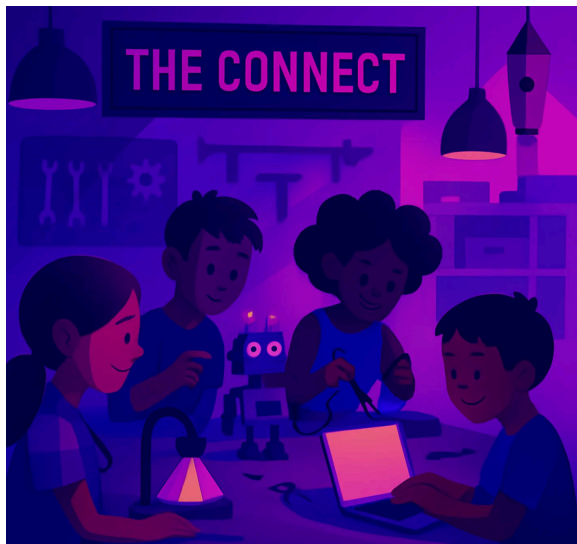
Rhino 3D



## Lending Library

A community lending library offering technology and programming books to inspire learning, skill-building, and support for aspiring coders.

Books should explore concepts in IT, Cyber security, Software Development, Hardware & Robotics, Digital Media and Design, AI & Machine learning etc...



## Makerspace with Fabrication Lab

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An open, collaborative space designed to encourage exploration, creativity, and hands-on learning through access to a wide range of technology and tools. The makerspace will be loosely divided into **three main areas**:

### **Traditional programming**

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Arduino kits & Micro:bit kits

3D Printers

Tablets and laptops  
for digital design

Relevant software

### **FabLab**

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Vinyl cutter

Cricut machines

T-shirt press

Laser cutters

Sewing machines

Jewellery making

## Digital media

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**A highly requested area offering a screen and small lounge area for group video game trials, music production equipment and associated software, video editing stations, and animation tools. This space will not only support individual and group learning but also serve as a foundation for future multimedia-focused programming led by TSN.**

Videogame trailing area

Audio/Music production set up

Photography/video creation and editing setup

Headphones

Relevant software



## Classroom and Office Space

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In the classroom, TSN programming and digital literacy workshops can be conducted. When not in use, this room can also be made available to the public for meetings, as well as for TSN students to liaise with mentors while working on their projects. Office

space will be designated for TSN staff and designed to reflect their interests, fostering collaboration and the exchange of ideas among team members

## **Potential New Collaborators**



Guest Workshops by Microsoft Garage Interns: Reshaping our partnership with Microsoft, TSN Connect can host workshops led by interns from various project groups, providing a win-win opportunity for Microsoft to showcase in-development software and gather user feedback, while participants learn new skills and explore emerging tools. Expert Presentations by Microsoft Garage interns can inspire and inform students about real-world innovation and technology trends.

As previously discussed I have began the discussion with Chris Templeman on this topic.



NEWVIEW.MEDIA

Tom Dodge, Founder and CEO of NewView.Media video production company, Cambridge, MA, has expressed interest in leading introductory workshops on video creation and editing using Adobe Premiere Pro.



Leonard Egerton, Owner of Frugal Books expressed interest in sourcing technology books for the technology lending library.

## Vision and Objectives

The current TSN headquarters (The old firehouse at 20 Eustis Street) does not support the running of workshops, nor any of the community facilities outlined above. The proposed TSN technology hub space will encourage inflow of curious minds and outflow of local talent, supporting TSN in achieving its mission to provide individuals of all ages with access to technology education — **expanding opportunities to higher education and career pathways in an increasingly tech-driven world!**

## Final Thoughts

This was my first time in Boston, and engaging with the Roxbury community in such a meaningful way made the five weeks of in-person research truly unforgettable. I am incredibly grateful to the Laidlaw Foundation Leadership & Research Scholarship for funding and supporting this Leadership-in-Action project. I'm also deeply thankful to the Timothy Smith Network staff for their warm welcome, mentorship, and encouragement throughout this experience — especially Alessandra, who supervised the project, as well as Nona, Amanda, and Milton. Through this opportunity, I gained valuable insight into the work involved in breaking cycles of disadvantage through technology education, and I had the privilege of crossing paths with some truly fantastic people. — Abo Obhakhan

