In the Age of COVID-19: An Online Platform for Stress and Productivity Management

Principal Investigator: Dr. Pablo E. Paredes; Pervasive Wellbeing Technology Lab (PWTL)
- http://med.stanford.edu/pervasivewellbeingtech.html

As we face the current COVID-19 pandemic, millions of workers face the immediate need to move their work from the office to home. Many, unaccustomed to this dynamic, will require support to maintain an adequate rhythm of work and productivity level while managing the stress associated with this lifestyle change and the constant barrage of news about the pandemic. Most will work primarily on computer screens and mobile phones with constant access to web-based content.

We propose a set of tools that can support personal productivity by managing procrastination in online behaviors (e.g., abusing social media, over consumption of multimedia content, other maladaptive behaviors) and provide just-in-time stress management as well as emotional regulation interventions during the pandemic. We foresee that these tools will not only be necessary and useful during the potential “shelter-in-place” periods, but perhaps more importantly, during a longer phase of adaptation to the expected long-term effects of the pandemic.

Productivity interventions through online tools have been a subject of study for health, technology, and anthropology researchers. Dr. Pablo Paredes and his team of researchers have been studying stress-management technology tools and are in the process of generating a broad “occupational precision mental health” research tool and platform. We are intensively working to accelerate the development of a first version of this platform (aka “minimum viable product” – MVP) in a matter of weeks that we believe will be of great help during the COVID-19 pandemic.

We envision launching this platform using a multi-staged approach. We could launch an MVP focused on web browsers in a matter of weeks and then add additional interventions and algorithmic personalization solutions in the near term. Solutions would initially focus on productivity and individual stress management before expanding to include interventions aimed at feelings of isolation and healthy family interactions. As some interventions would be aimed at building coping strategies, part of our research may involve investigating how to make these skills transferable to the user’s close ties (e.g., familial connections). We plan to integrate existing technology: our web-based, stress management interventions (Poptherapy https://dl.acm.org/citation.cfm?id=2686909) and an online open-source productivity tool (chrome plug-in) originally developed by Stanford computer science colleagues (Habitlab - https://habitlab.stanford.edu), which already has 15,000 active users. As a result, our Home Sweet Office MVP will consist of a modifying and rebranding Habitlab as both a productivity and mental health tool that will include PopTherapy interventions aimed at increasing the overall value of the tool for current and future users. As we make progress our goal is to integrate other projects from PWTL that include chatbot interventions, peripheral breathing regulation tools, and passive stress sensing using computer peripherals (MouStress - https://dl.acm.org/doi/10.1145/2556288.2557243). Finally, we would also aim to upgrade the mobile-based version of Habitlab to maintain synchronicity with the platform.

With adequate resources, we could execute an aggressive development timeline to help users cope with stress and productivity while working at home during the COVID-19 pandemic. Furthermore, the data generated by this project will be of tremendous interest to mental and occupational health researchers and will serve towards our ambitious goal of studying the longitudinal causal relationships between stress, productivity, and mental health.

Estimated resources needed:
Minimum $400,000 (+8%) for product development and implementation in near-term
$150,000 (+8%) for 4 – 6-week fast roll-out of product. Timing depends on internal approvals for safety and privacy in human subject research.
$250,000 (+8%) for 6 months operation and new module development.
Two-year horizon: $1 million for platform and intervention sustainability and expansion. Additionally, we plan to use NSF/NIH funding to further develop and add unobtrusive sensing, and personalized AI algorithms.
Short Description:

Home Sweet Office in the Age of Covid-19
An Online Platform for Stress and Productivity Management
Principal Investigator Dr. Pablo E. Paredes; Pervasive Wellbeing Technology Lab (PWTL)
- [http://med.stanford.edu/pervasivewellbeingtech.html](http://med.stanford.edu/pervasivewellbeingtech.html)

As we face the current COVID-19 pandemic, millions of workers face the immediate need to move their work from the office to home. Many, unaccustomed to this dynamic, will require support to maintain an adequate rhythm of work and productivity level while managing the stress associated with this lifestyle change. Most will work primarily on computer screens and mobile phones with constant access to web-based content. We propose a set of tools that can support personal productivity by managing procrastination in online behaviors (e.g., abusing social media, over consumption of multimedia content) and provide just-in-time stress management as well as emotional regulation interventions during the pandemic. We foresee that these tools will not only be necessary during the “shelter-in-place” periods, but perhaps more importantly, during a longer phase of adaptation to the expected long-term effects of the pandemic.

We envision launching this platform using a multi-staged approach. We could launch a first version (a.k.a. minimum viable product - MVP) focused on web browsers and mobile phones in a matter of weeks and then add additional interventions and algorithmic personalization solutions in the near term. Solutions would initially focus on productivity and individual stress management then expand to include interventions aimed at feelings of isolation and healthy family interactions. We plan to integrate existing technology: our web-based, stress management interventions and an online open-source productivity tool (chrome plug-in) developed by Stanford computer science colleagues called Habitlab, which already has 15,000 active users. As a result, our Home Sweet Office MVP will consist of modifying and rebranding Habitlab as both a productivity and mental health tool aimed at increasing the overall value for current and future users.

Estimated resources needed:

**Minimum $400,000 (+8%) for product development and implementation in near-term**
$150,000 (+8%) for 4 – 6-week fast roll-out of product. Timing depends on internal approvals for safety and privacy in human subject research.
$250,000 (+8%) for 6 months operation and new module development.

**Two-year horizon**: $1 million for platform and intervention sustainability and expansion. Additionally, we plan to use NSF/NIH funding to further develop and add unobtrusive sensing, and personalized AI algorithms.