

Sigma-i: Streamlining Personnel Management in the Time of COVID

CASE STORY

Amongst a myriad of other disruptions, the pandemic has created unprecedented logistical challenges for many organizations. Businesses, schools, and hospitals have all struggled with the difficulties of maintaining critical operations while also protecting public safety and minimizing the risk of spreading infection.

Tokyo, Japan-based startup Sigma-i has collaborated with D-Wave to develop quantum computing-based solutions to these problems, including a powerful personnel management tool called ‘**New Normal Scheduler**’.

“Our policy is to create services that fit this new era, and products that point to a new future”

Masayuki Ohzeki
Sigma-i CEO

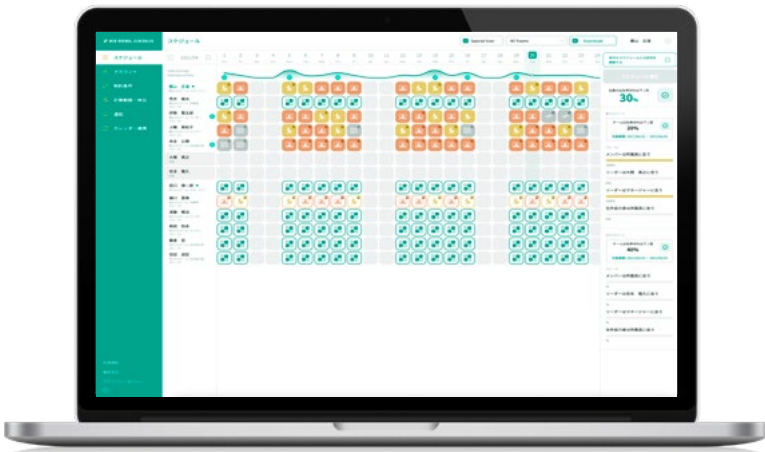
Early in the pandemic, when one of the greatest concerns was ensuring prompt treatment for a rapidly growing number of COVID-19 cases, Sigma-i explored the use of D-Wave’s hybrid quantum computing platform to manage transportation of patients from across Japan. This is a complex, multi-factorial problem that must take into account the patient’s location, the distances to the nearest quarantine sites or medical facilities, and the available capacity for new patients—a critical consideration to protect the safety of medical workers and other patients. “This is an example of considering a large-scale problem using the hybrid capabilities of a quantum annealing machine,” says Masayuki Ohzeki, CEO of Sigma-i. The company also explored other public health-related challenges, such as how to manage customer appointments at various businesses to prevent overcrowding.

New Normal Scheduler is built around the same general concepts of coordinating large numbers of people—in this case, workplaces where only a fraction of the employees are likely to be working onsite on a given day. In the COVID-19 era, an unprecedented proportion of the workforce has been working remotely, but some essential meetings, collaborations, and other activities still require onsite, face-to-face interaction. This creates the thorny challenge of planning out how to maintain a safely reduced in-house presence while also ensuring that the relevant members of a given team are consistently present at the same time.



Although a superficially straightforward problem, the complexity quickly explodes when one is talking about coordinating the schedules of thousands of employees week after week. Classical computing would struggle with this problem due to the number of constraints involved. “It’s complicated, and there’s often no answer that fits all the conditions,” says Ohzeki. “But finding an acceptable solution that optimizes for the interaction of many employees is the kind of problem that quantum annealing is good at.”

The New Normal Scheduler software can be run from a standard browser, and interfaces directly with the Google Calendar or Microsoft Outlook calendars of employees and their managers. Once it has been fed the relevant information, the D-Wave hybrid solver service can produce an optimized work schedule in a matter of seconds. The parameters can also be easily optimized as operating conditions change—for example, if the company shifts from 70% remote work to 50% remote work, or to account for holidays or other interruptions to the work week.



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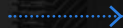
Sigma-i released New Normal Scheduler in February 2021 as a free trial for new users to test out, and is planning a full commercial release later in the year. Ohzeki notes that several Japanese companies have already brought the software on-board, and that some businesses are even considering New Normal Scheduler as an impetus to transition from their current in-office system to a hybrid framework that also allows for remote work. “In other words, the New Normal Scheduler has become a trigger for a new lifestyle,” he says. And as such, even after the pandemic has receded, he is confident that this quantum computing-powered scheduling tool will live up to its name in terms of creating a ‘new normal’ that makes day to day operations simpler for managers and offers unprecedented flexibility for their teams.

D-Wave Launch: The on-board to quantum computing program

If you are ready to get started but not sure how, the D-Wave Launch program has been designed to help enterprises at every step of their quantum journey, from problem discovery through production implementation.



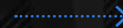
Identify the problem best suited to quantum



Get your team trained and start the development process



Move your application into test and ready for production



Get your application up and running to deliver benefit to your business



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