Alec Ross arrives today at the State Department, armed with a new set of diplomatic tools including Facebook, text messaging and YouTube.

Ross is a senior adviser on innovation to Secretary of State Hillary Rodham Clinton -- a role created for the 37-year-old nonprofit leader, who quickly rose within the Obama campaign, helping to craft tech policy under top technology adviser Julius Genachowski.

His new job will blend technology with diplomacy in an attempt to help solve some of the globe's most vexing problems on health care, poverty, human rights and ethnic conflicts. And it is emblematic of the expansive approach the administration has taken to the role of technology in advancing its domestic and global agendas.

"Secretary Clinton believes technology is a powerful tool to address the priorities of the State Department, including promoting human rights and vibrant democracies, fostering development and enhancing the impact of smart power," said State Department spokesman Robert Wood. "Alec's track record of successfully using technology for development initiatives around the world made him an ideal candidate for this job."

Projects could include the use of cellphone text messaging as a way to reach isolated communities to warn people of natural disaster or remind patients to take medication. Social networking sites could bring together youth in warring tribes to communicate and organize cultural exchanges. Software could be used to help ensure aid is delivered by creating supply-chain systems.

Ross will work for the chief of staff, Cheryl Mills, Wood said.

"I don't believe tech is an end into itself to solve problems," Ross said, "but it can be a critical part of the solution."

Critics have their doubts about whether concrete solutions can be achieved through technology, however. Economists have questioned, for example, whether stimulus funds for health-care information technology and broadband Internet will substantially boost employment.

But friends and colleagues who worked on the Obama campaign and transition say Ross has what it takes to pull it off: business savvy and the ability to bring large, disparate groups together.

In 2000, he co-founded the nonprofit group One Economy, which uses technology to help low-income communities, and built it into a multimillion-dollar organization with donations from the Bill and
Melinda Gates Foundation, Cisco, Yahoo and AT&T.

"Alec has an extraordinary entrepreneurial skill set," said Blair Levin, a telecom analyst who led Obama's tech policy group along with Genachowski during the transition. "Through partnership with all kinds of different players, he sees opportunities that others don't and makes connections that others don't that will be critical in this new job."

Ross is an unlikely Washington operator. He commutes to the District from Baltimore, where he settled more than 10 years ago as a Teach for America volunteer working at a middle school on the city's economically troubled west side. He grew up near Charleston, W.Va., where unemployment was ever rising. He named the first of his three children Colton, a play on "coal town," as a "shout-out" to his roots, he said.

"Living in Baltimore keeps me planted in reality," he said.

Ross has no formal training in technology. And unlike most of Washington's tech policy leaders, he wasn't groomed at the Federal Communications Commission or through the FCC Bar Association.

Yet he was charged with managing hundreds of policy advisers brought together to develop the president's tech and innovation plan. In that role, he assigned duties to high-tech titans such as Google chief executive Eric E. Schmidt, academics including Stanford law professor Larry Lessig, nonprofit leaders and investors.