Organizations are increasingly adopting bring-your-own-device (BYOD) policies. CIOs, however, remain concerned about the potential threats from personal devices and applications to the control and security of organizational IT assets. Based on in-depth case studies at Cisco, Wal-Mart and the Arkansas Department of Information Systems, the full article describes a four-wave model that describes the BYOD voyage an organization undertakes as its BYOD policy evolves. From these organizations’ experiences, we have identified four lessons that will help CIOs identify important BYOD issues at each wave and chart their own BYOD voyages.

The Four-Wave Model of the BYOD Voyage

<table>
<thead>
<tr>
<th>Wave Description</th>
<th>First Wave</th>
<th>Second Wave</th>
<th>Third Wave</th>
<th>Fourth Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“Drop a Light Anchor”</td>
<td>“Increase Hull Speed”</td>
<td>“Set Loose the Sails”</td>
<td>“Make Way for New Waters”</td>
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<tr>
<td>Organizations initiate a limited BYOD rollout to test the waters.</td>
<td>Organizations expand BYOD adoption to include more job categories.</td>
<td>Organizations encourage wide-spread adoption to develop a connected workforce.</td>
<td>Organizations reduce control to allow employees to lead the charge for new innovations.</td>
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</tbody>
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In the cases, the BYOD voyage was launched either by a few employees using their own devices “under the radar” or by a newly hired executive. Realizing that BYOD was inevitable, but worried about securing IT assets, each organization “dropped a light anchor” to control a limited BYOD initiative. Early benefits caused them to gain confidence in BYOD and prepare for the second wave (“increased hull speed”) by expanding and clarifying their BYOD policies. Once further benefits were evident, and they were comfortable with BYOD, they then progressed to the third wave (“let loose the sails”) by encouraging widespread adoption. In the fourth wave (“making way for new waters”), the BYOD policy encourages employees to use their own devices for process innovation and exploring productivity gains.

**First Wave: “Drop a Light Anchor.”** The decision to embark on the BYOD voyage typically begins with the introduction of consumer technologies into the organizational IT infrastructure, both formally and informally. Quickly realizing BYOD’s inevitability, executives from all three case organizations initiated formal but limited BYOD policies to prepare for this first wave of BYOD adoption. They “dropped a light anchor” so they could safely direct their IT policies before moving forward.

**Second Wave: “Increase Hull Speed.”** As employees began to use their personal devices to access corporate systems and IT services, the organizations began noticing unauthorized technologies and usage that were not covered by the BYOD policy. In response, they made directed updates to the policies to encourage further growth (“increase hull speed”). This second wave posed the greatest challenge to the case organizations. While each had different perspectives when updating their BYOD policies for the second wave, all of them spent significant

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1 The full article is published in the June 2016 issue of *MIS Quarterly Executive*, available online at www.misqe.org.
time on ensuring that their policies were comprehensive, yet simple and easy to implement. The policies needed to be flexible enough to provide employees with a sense of choice yet restrictive enough for the IT organization to prepare for the influx of technologies.

Third Wave: “Let Loose the Sails.” As adoption of personal devices increases, some companies will “let loose the sails” and move to a full-scale rollout of BYOD. During this third wave, organizations experience significant efficiency gains as employees start to use their office time more efficiently and perform mundane tasks during their downtime. Employee satisfaction increases because they are using their own devices, have increased connectivity to the organization and have greater flexibility in carrying out their organizational tasks. At the same time, organizational productivity increases and there is the potential for cost savings.

Fourth Wave: “Make Way for New Waters.” Just one of the case organizations had reached the fourth wave of the BYOD voyage. After developing a large network of connected individuals in the first three waves, it began to look toward the horizon and identify innovations. Significant resources were devoted to providing and supporting the technologies employees needed and requested. The innovations were employee-driven and led to a variety of enhancements in performing tasks, which were then rolled out across the organization.

Mapping out Your Organization’s BYOD Voyage

We have identified four lessons from the three case organizations, each corresponding to one of the four waves of the BYOD voyage.

1. **Explore Opportunities by Testing the Waters of BYOD Initiatives.** Organizations will benefit from testing the waters of the BYOD voyage by encouraging, or at least allowing, interested employees to use their own devices to perform organizational tasks (first wave). During this first wave, some issues and opportunities will begin to surface.

2. **Balance Freedom, Control, Compatibilities and Security in Technology Choices.** When transitioning to the second wave, managers will need to address several policy and infrastructure issues to ensure that the variety of devices accessing the corporate network remain secure and compatible. During the second wave, organizations need to provide employees with freedom to choose their personal devices while simultaneously guiding them toward “acceptable” devices that are compatible with corporate applications and won’t compromise security. Managers can achieve this through a combination of policy and technology solutions. By providing a broad framework of technologies, managers can guide individuals toward approved technologies without undue constraints.

3. **Provide Incentives for Widespread BYOD Adoption.** Although the BYOD voyage may have begun without formal incentives, clear incentives are required to encourage further growth across a large network of users (third wave). Most employees need incentives to motivate them to pay for their own technologies for use at work and abandon corporate devices. Monetary incentives are insufficient. Organizations must also provide access to apps that increase productivity or employee well-being. A good way of doing this is to establish an in-house app store.

4. **Encourage Employees to Innovate.** As employees regularly use their own devices at work during the fourth wave of the BYOD voyage, organizations will start to see significant productivity gains as they adjust their work and personal time throughout the day to efficiently and effectively manage their limited time. It is at this point that a fundamental shift in organizational mentality is needed to provide an IT infrastructure that fosters employee innovation. Network monitoring technologies can identify the personal technologies that employees are using to improve their productivity and create innovative solutions. As employees change their behavior they will seek additional ways to use their productive time through new applications and requests for new technologies, which can lead to further productivity gains across the organization.

In Conclusion

Each of the three case organizations had shifted from a hard stance of prohibiting employee-owned devices to embracing BYOD as a driver of both productivity and innovation. As organizations progress on their BYOD voyages, they will achieve widespread benefits, ranging from individual task efficiencies to organizational cost savings and productivity gains. We found significant similarities in how each organization had managed BYOD growth as well as in the policy attributes used to accelerate adoption. The lessons and guidance from this research will help other organizations unlock the true potential of BYOD.