Software development and cloud-based services have led to disruption in many industries. Technological advancements have led to shortened product development times, faster products to market, better distribution systems and streamlined purchasing.

Famously, Moore’s Law states that the amount of computer processing power that fits on a chip doubles every two years. It has held true for decades and has served as a proxy for innovation. And yet, as processing power has increased and the pace of business has quickened, the speed of payments has not increased at the same rate.

The good news is that change is coming. U.S. banks and regulatory bodies recognize the need for the payments system in general — and the B2B payments system in particular — to adapt to keep up with the increased speed of doing business. The industry expects real-time payments (i.e., payments where settlement happens immediately and confirmation is made within seconds) to grow exponentially in the coming years. B2B real-time payments volume is projected to rise from 0.5 billion in 2017 to 2.9 billion in 2023.¹

The U.S. has some catching up to do relative to other parts of the world in terms of the transition to faster payments; as of October 2015, 18 countries had implemented same-day payments, but the U.S. was not one of them. In 2008, the United Kingdom introduced its Faster Payments System, which is now available 24x7 and processing more than one billion transactions per year. Faster Payments claims an annual growth rate of 20%, with 60% of that growth coming from transactions migrating from other systems.²

U.S. banks are now pursuing a multi-faceted approach to delivering real-time payments. This includes:

• Industry Collaboration to Develop Faster Payments
• Investing in Financial Technology (FinTech)
Creating Industry Standard Protocols

There are numerous examples of financial industry stakeholders (including banks, associations and the Federal Reserve) coming together to agree on standards around faster payments, as well as to develop and implement faster payment solutions. (see chart to the right)

In May 2015, NACHA (the National Automated Clearing House Association) adopted rules to allow Same Day ACH transactions.

- The initial deployment on September 23, 2016 will support same-day settlement of credit transactions up to $25,000.
- The next phase, in September 2018, will allow debit transactions.

According to NACHA, 95% of the top banks are on track to originate Same Day ACH payments in 2016. Though same-day origination is optional, it is mandatory for all financial institutions to accept and post same-day transactions on the current day, assuring same-day availability of all transactions.

Note: As one of the largest originators and receivers of ACH payments, PNC is at the forefront of this enhancement to the ACH network and will be supporting Same Day ACH origination and receipt on the September implementation date.

In early 2015, the Federal Reserve established a Faster Payments Task Force comprising more than 300 organizations and individuals to develop a faster payments model in the U.S. A number of organizations — including The Clearing House — have submitted proposals that are currently being evaluated by the task force.

The Clearing House is a trade group and payments company that began building a real-time payments system in 2015. The Clearing House entered into an agreement with Vocalink (a UK-based international payments systems provider, which introduced UK’s real-time payments system in 2008) to develop national real-time payments services in the U.S. It is expected that the initial phase of Real Time Platform will be piloted in early 2017. PNC is one of the banks that own The Clearing House.

Investing in Financial Technology

FinTech has emerged in recent years as an industry focused on creating new technologies with the potential to transform the financial sector. While banks and FinTech providers can at one level be seen as competitors, there is increasing recognition by both sides of the strengths and limitations each possesses.

This mutual recognition of their relative strengths and limitations is leading to increased collaboration between the two.

PNC continues to invest in technology-based solutions to enable faster, more accurate and more efficient payments. It is also vital that companies prepare for a real-time payments future. This includes ensuring that the technology is in place to support real-time payments and other payment innovations, as well as working with vendors to update their platforms to match new payment requirements.

Faster Payments Initiatives

Faster payments initiatives include:

<table>
<thead>
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While many FinTech companies emerged as ‘banking industry disruptors,’ we are seeing a lot of them shift their focus to partnering with banks for a mutually beneficial outcome.

— Mike Lyons, Head of Corporate & Institutional Banking

**Bank Strengths**

- Extensive distribution network
- Financial strength
- Large customer base
- Experience and expertise in addressing consumers’ and businesses’ financial needs
- Reputation for security and protecting customer privacy

**FinTech Strengths**

- Innovation
- Flexibility
- Rapid product development
Banks like PNC are pursuing FinTech investments that include acquiring FinTech firms, building in-house FinTech solutions, and partnering with FinTech firms.

**PNC’s Technical Innovation in Payments**

<table>
<thead>
<tr>
<th>Investment in FinTech Firms</th>
<th>In-House Solutions Development</th>
<th>Partnering with FinTech Providers</th>
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<tr>
<td>• Made an investment in electronic billing and payment company <strong>Transactis</strong> in April 2016.¹</td>
<td>• Introduced <strong>Virtual Wallet</strong>, an innovation money management and online banking solution, in 2008.</td>
<td>• Partnered with <strong>Tungsten Network</strong> to provide invoice automation through A/P Advantage. This partnership was featured in the Fall 2014 issue of <strong>PNC Payment Solutions News</strong>.</td>
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<td>• Joined with a number of firms to invest in <strong>Digital Asset Holdings</strong> in January 2016.² Digital Asset Holdings is a developer of distributed ledger technology and is looking to build blockchain services.</td>
<td>• Developed and continues to add functionality to our <strong>PINACLE®</strong> online treasury management portal.</td>
<td>• Recently added Microsoft Wallet to the PNC mobile payments lineup, which includes <strong>ApplePay™</strong>, <strong>AndroidPay™</strong> and <strong>Samsung Pay™</strong>.</td>
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<td>• Partnered with six other leading banks to invest in <strong>Early Warning Services (EWS)</strong>, a provider of fraud prevention and risk management services. At the same time, EWS acquired clearXchange, a person-to-person payments network.</td>
<td>• Opened our <strong>Innovation Lab (iLab)</strong> in May 2015, a 10,000-square-foot facility that is designed to test new products and services in real-life environments.</td>
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¹ Real-Time Payments and Settlement Comes to the United States,” D+H, PNC and The Clearing House white paper, April 2016
³ “Same Day ACH: Moving Payments Faster in 2016,” NACHA infographic
⁴ PNC was the sixth-largest originator and the fourth-largest receiver of ACH payments in 2015, according to NACHA
⁵ “VocaLink and The Clearing House sign a groundbreaking deal to deliver national real-time payment services in the U.S.,” The Clearing House news release, December 12, 2015
⁶ “The Future of Payments Is …Faster,” PNC
⁷ “PNC invests in billing, payment company,” Pittsburgh Business Times, April 18, 2016

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