**Ford Total Loss Process on Blockchain**

**Opportunity and Significance**

The Ford total loss process involves a series of interactions between the vehicle owner, insurance company, lienholder, salvage vendor, and the DMV. There are a number of manual steps requiring human involvement which can cause the process to take 30-45 days to complete. Additionally, Ford has little visibility into the progress of other parties.

Utilizing a distributed ledger will give more visibility to all parties involved in the total loss process, reduce manual effort, and increase data integrity.

**Technical Objectives**

- Design a front-facing web application to serve as a UI for all parties
- Develop middleware to handle requests using an Express REST API
- Create a backend to process and store transaction ledgers on a blockchain

**Related Work and State of Practice**

The current total loss process involves hours of manual work and follow-up from the Ford Credit team, tracking down documents from interested parties, and storing information in private databases.

This is an original project developed during the Winter 2019 semester with no prior foundational work at WSU.

**Technical Approach, Accomplishments and Results**

- Created a frontend using Angular for users to add, modify, and delete claims, upload documents to an AWS S3 bucket, and progress through the total loss process
- Created a second view-only frontend using React to show multiple nodes running simultaneously and real-time transaction processing
- Built middleware to act as a REST API using Node.js and Express to handle requests and responses between the frontend and backend
- Developed a backend using Hyperledger Sawtooth to process transactions and store claim data on a distributed ledger blockchain

**Commercialization Plan & Partners**

This project will function as a proof of concept for Ford Motor Company to determine its viability as an upgrade to the current process. Potential hurdles for using this application in a production environment include getting buy-in from all parties to switch to the application, such as various insurance companies, salvage yards, and the DMV.

**Next Steps for Development and Test**

The application will be handed over to Ford to continue development and determine the practicality of using blockchain for their total loss process. The company will then be able to involve Ford Credit's total loss department and insurance companies for further input and testing.