FISCAL NOTE Requested by Legislative Council 03/15/2019

Amendment to: Engrossed HB 1045

1 A. State fiscal effect: Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.

	2017-2019	Biennium	2019-2021	Biennium	2021-2023 Biennium		
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds	
Revenues	\$0	\$0	\$0	\$0	\$0	\$0	
Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	
Appropriations	\$0	\$0	\$0	\$0	\$0	\$0	

1 B. County, city, school district and township fiscal effect: Identify the fiscal effect on the appropriate political subdivision.

	2017-2019 Biennium	2019-2021 Biennium	2021-2023 Biennium
Counties	\$0	\$0	\$0
Cities	\$0	\$0	\$0
School Districts	\$0	\$0	\$0
Townships	\$0	\$0	\$0

2 A. **Bill and fiscal impact summary:** Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).

As first introduced this bill created a new business entity type known as a Series LLC. The Engrossment no longer contains that provision.

B. **Fiscal impact sections:** Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.

None to the Office of Secretary of State

- 3. **State fiscal effect detail:** For information shown under state fiscal effect in 1A, please:
 - A. **Revenues:** Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.

None

B. **Expenditures:** Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.

None

C. **Appropriations:** Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation or a part of the appropriation is included in the executive budget or relates to a continuing appropriation.

None

Name: Al Jaeger Agency: Secretary of State Telephone: 701-328-2900 Date Prepared: 03/15/2019

FISCAL NOTE Requested by Legislative Council 03/15/2019

Amendment to: Engrossed HB 1045

1 A. State fiscal effect: Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.

	2017-2019	Biennium	2019-2021	Biennium	2021-2023 Biennium		
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds	
Revenues	\$0	\$0	\$0	\$0	\$0	\$0	
Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	
Appropriations	\$0	\$0	\$0	\$0	\$0	\$0	

1 B. County, city, school district and township fiscal effect: Identify the fiscal effect on the appropriate political subdivision.

	2017-2019 Biennium	2019-2021 Biennium	2021-2023 Biennium
Counties	\$0	\$0	\$0
Cities	\$0	\$0	\$0
School Districts	\$0	\$0	\$0
Townships	\$0	\$0	\$0

2 A. **Bill and fiscal impact summary:** Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).

As first introduced this bill created a new business entity type known as a Series LLC. The Engrossment no longer contains that provision.

B. **Fiscal impact sections:** Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.

None to the Office of Secretary of State

- 3. State fiscal effect detail: For information shown under state fiscal effect in 1A, please:
 - A. **Revenues:** Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.

None

B. **Expenditures:** Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.

None

C. **Appropriations:** Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation or a part of the appropriation is included in the executive budget or relates to a continuing appropriation.

None

Name: Al Jaeger Agency: Secretary of State Telephone: 701-328-2900 Date Prepared: 03/15/2019

FISCAL NOTE Requested by Legislative Council 02/28/2019

Amendment to: Engrossed HB 1045

1 A. State fiscal effect: Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.

	2017-2019	Biennium	2019-2021	Biennium	2021-2023 Biennium		
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds	
Revenues	\$0	\$0	\$0	\$0	\$0	\$0	
Expenditures	\$0	\$0	\$80,000	\$0	\$0	\$0	
Appropriations	\$0	\$0	\$80,000	\$0	\$0	\$0	

1 B. County, city, school district and township fiscal effect: Identify the fiscal effect on the appropriate political subdivision.

	2017-2019 Biennium	2019-2021 Biennium	2021-2023 Biennium
Counties	\$0	\$0	\$0
Cities	\$0	\$0	\$0
School Districts	\$0	\$0	\$0
Townships	\$0	\$0	\$0

2 A. **Bill and fiscal impact summary:** Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).

The bill creates a new business entity type known as a Series LLC.

B. **Fiscal impact sections:** *Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.*

To accommodate a Series LLC, FirstStop must be enhanced to accommodate the following filings: articles of organization, articles of amendment, statement of correction, restated articles of organization, statement of authority, statement of amending or canceling the statement of authority, articles of conversion, abandonment of conversion, articles of domestication, articles of merger or exchange, abandonment of merger or exchange, reserve name, notice of transfer of reserved name, cancellation of reserved name, consent to use of name, statement of change of registered agent or address of registered agent, resolution for the establishment of a class or series of membership interests, notice of dissolution, certificate of authority, amendment of certificate of authority, certificate of fact of merger, statement of conversion, application for withdrawal, and annual report.

The agency is required to promulgate rules regarding the connection between each entity within a series, whether or not all in the series will need to file an annual report or only one annual report will be required for all, determination as to whether all in the series will have the same registered agent or if they may each have a separate registered agent, and naming convention for each entity within a given series.

- 3. State fiscal effect detail: For information shown under state fiscal effect in 1A, please:
 - A. **Revenues:** Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.

Revenue will be generated, but the amount is unknown because it is dependent on the number of businesses that may organize under this new entity type. The fees collected are itemized in section 10-32.1-92 of the NDCC. For example, the fee for filing articles of organization for a new LLC is \$135. The fee for filing an annual report is \$50. Revenue collected will be deposited into the state's general fund.

B. **Expenditures:** Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.

See 2B. for details.

C. **Appropriations:** Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation or a part of the appropriation is included in the executive budget or relates to a continuing appropriation.

An appropriation is needed to cover the costs of the programming and to promulgate the administrative rules

Name: Al Jaeger Agency: Secretary of State Telephone: 701-328-2900

Date Prepared: 03/02/2019

FISCAL NOTE Requested by Legislative Council 02/28/2019

Amendment to: Engrossed HB 1045

1 A. State fiscal effect: Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.

	2017-2019	Biennium	2019-2021	Biennium	2021-2023	Biennium
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues	\$0	\$0	\$0	\$0	\$0	\$0
Expenditures	\$0	\$0	\$80,000	\$0	\$0	\$0
Appropriations	\$0	\$0	\$80,000	\$0	\$0	\$0

1 B. County, city, school district and township fiscal effect: Identify the fiscal effect on the appropriate political subdivision.

	2017-2019 Biennium	2019-2021 Biennium	2021-2023 Biennium
Counties	\$0	\$0	\$0
Cities	\$0	\$0	\$0
School Districts	\$0	\$0	\$0
Townships	\$0	\$0	\$0

2 A. **Bill and fiscal impact summary:** Provide a brief summary of the measure, including description of the provisions having fiscal impact (limited to 300 characters).

The bill creates a new business entity type known as a Series LLC.

B. **Fiscal impact sections:** Identify and provide a brief description of the sections of the measure which have fiscal impact. Include any assumptions and comments relevant to the analysis.

To accommodate a Series LLC, FirstStop must be enhanced to accommodate the following filings: articles of organization, articles of amendment, statement of correction, restated articles of organization, statement of authority, statement of amending or canceling the statement of authority, articles of conversion, abandonment of conversion, articles of domestication, articles of merger or exchange, abandonment of merger or exchange, reserve name, notice of transfer of reserved name, cancellation of reserved name, consent to use of name, statement of change of registered agent or address of registered agent, resolution for the establishment of a class or series of membership interests, notice of dissolution, certificate of authority, amendment of certificate of authority, certificate of fact of merger, statement of conversion, application for withdrawal, and annual report.

The agency is required to promulgate rules regarding the connection between each entity within a series, whether or not all in the series will need to file an annual report or only one annual report will be required for all, determination as to whether all in the series will have the same registered agent or if they may each have a separate registered agent, and naming convention for each entity within a given series.

- 3. State fiscal effect detail: For information shown under state fiscal effect in 1A, please:
 - A. **Revenues:** Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.

Revenue will be generated, but the amount is unknown because it is dependent on the number of businesses that may organize under this new entity type. The fees collected are itemized in section 10-32.1-92 of the NDCC. For example, the fee for filing articles of organization for a new LLC is \$135. The fee for filing an annual report is \$50. Revenue collected will be deposited into the state's general fund.

B. **Expenditures:** Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.

See 2B. for details.

C. **Appropriations:** Explain the appropriation amounts. Provide detail, when appropriate, for each agency and fund affected. Explain the relationship between the amounts shown for expenditures and appropriations. Indicate whether the appropriation or a part of the appropriation is included in the executive budget or relates to a continuing appropriation.

An appropriation is needed to cover the costs of the programming and to promulgate the administrative rules

Name: Al Jaeger Agency: Secretary of State Telephone: 701-328-2900

Date Prepared: 03/02/2019

2019 HOUSE INDUSTRY, BUSINESS AND LABOR

HB 1045

2019 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee

Peace Garden Room, State Capitol

HB1045 1/8/2019 30538

□ Subcommittee □ Conference Committee

Committee Clerk: Ellen LeTang

Explanation or reason for introduction of bill/resolution:

Electronic transaction definitions, blockchain technology & smart contracts, number of shareholders & series limited liability companies.

Minutes:

No attachments

Chairman Keiser: Opens the hearing on HB 1045.

Rep Toman-District 34~Mandan: Introduces the bill. This bill seeks to include blockchain technology & the definitions of LLC & corporation documents to be held on the blockchain technology.

Vice Chairman Lefor: Can you go over a blockchain technology? It's not regulated, can a ND consumer be harmed?

Rep Toman: I'll pass out a handout which is an overview of block chain.

5:00

Rep Laning: Is this a super secure way of doing business with communications. Once it's entered into the blockchain, it essentially is locked in & can't be changes. Therefore, you get the security you need for business & financial transactions. True?

Rep Toman: That's the concept, not being able to change the orders.

Rep Bosch: You use ledger & audit, is this a new accounting application?

Rep Toman: It's a type of ledger. Accounting could come into play. It's a broad brush.

Rep Bosch: In the real world, if you were audited, is it currently being used in that format?

Rep Toman: Yes & no, it doesn't have to be but the potential is out there.

10:50

House Industry, Business and Labor Committee HB 1045 Jan 8, 2019 Page 2

Rep M Nelson: How do you handle mistakes?

Rep Toman: You have to create a new row or block. It's a new transaction, just like accounting in a ledger.

Rep M Nelson: How are they linked, do I click on a link?

Rep Toman: It depends on the digital app. You make a file system on your computer & you have a folder. You go in & see how they designed it. You can see all of your documents & timelines.

Rep M Nelson: We're basically doing a front end for the data.

Rep Toman: Yes, it's the encrypted backend.

Rep P Anderson: Is it a chain of custody (inaudible).

Rep Toman: It could be. It depends on how you're going to use it. Underlying technology can allow for that. You are storing your information in the cloud but it is distributed across this whole network.

Rep Adams: Who is the network? All people participating in the blockchain are the network?

Rep Toman: Bitcoin is considered one network, but there are many other networks. You are verifying for the network.

Rep Adams: Who is the verifier?

Rep Toman: The computer solves the cryptic transactions; you're pooling your resources.

Rep Adams: How do you get paid in bitcoin & where does it comes from?

Rep Toman: They are called rewards & you resolve that transaction, you get rewarded. So it's the work you put in it.

Rep Schauer: Tell me about the security. How does this prevent hacking or does it not?

21:10

Rep Toman: It doesn't protect from hacking. When you put it on a public aspect, I don't know the other nodes. So that inscription brings that layer of security. A person can be hacked but they can't interject a block. It's not hacking but it's taking over the network. The hacking would end on the user side, not on the chain itself.

Rep Schauer: Will we have the same speed for transactions?

Rep Toman: It's faster for financial transactions. It will also depend on your internet speed.

House Industry, Business and Labor Committee HB 1045 Jan 8, 2019 Page 3

Chairman Keiser: It seems to me the major problem is the terminology. To me blockchain is another term for a transaction because it's all digitized & encrypted. Is that fairly accurate?

Rep Toman: That's a fair assessment.

Chairman Keiser: This bill specifically, has given clarity for all the entities? They can use blockchain technology, correct?

Rep Toman: Yes, that is what this bill does.

Chairman Keiser: You could do this right now; the law doesn't prevent it but there is a degree of uncertainty. If it's challenged it helps to put into statue that it's acceptable blockchain technology is acceptable in ND.

Rep Toman: That's correct.

Rep Adams: If I sent money out to her, my transaction becomes a node, right? My transaction not only goes to her but out to everybody?

Rep Toman: If you are sending to her, it's a block. The nodes are verifying these transactions.

Rep Adams: I'm sending her something, why does everyone have to see that transaction?

Rep Toman: It's a ledger & public knowledge. It's machines that are verifying & it's all encrypted.

Chairman Keiser: It seems to me it's like a banking account but it's a transaction & the bank is verifying the transaction.

34:00

Rep Ruby: It's secured, not regulated, but we need to put it in our law to be credible?

Rep Toman: It's technology that is coming. That North Dakota has my back because it's in law creating certainty.

Rep Kasper: What's wrong with the way business are doing business? How is this method improving what is traditionally being done?

Rep Toman: It improves on the global & multi-state transactions.

Rep Kasper: The regulation, it appears to me to hide transactions & profitability & keep it hidden. How is that issue addressed?

Rep Toman: If you are audited, it's like books, you have to prove your transactions to the auditors. It's more transparent.

Rep Kasper: This seems to open up a new auditing area of specialization?

Rep Toman: It could, but if you use the cash out, from that aspect, it's acts like a regular ledger.

Rep Kasper: Currency, under the constitution of the US, we have one currency. This appears to be a different currency because it isn't cash. How does this pass the constitutional currency?

Rep Toman: It's a digitizing transaction, it's a utility token. They are not using it as currency they are using it as verification of those transactions inside of those blocks.

Rep Kasper: Transactions occurs; somebody is paying for goods & services. That is someone is paying & you are saying it is not currency?

Rep Toman: You are using that to track your transactions, you are still using US currency. It just tracking your contracts & transactions.

Rep M Nelson: We are not really dealing with the cryptocurrency question?

Rep Toman: That's correct.

Rep Richter: If my company is sending & receiving invoices. Money is transferred from one account to another. We never see a check or paper. What this does is, it lets companies handle for you in a very secure environment?

Rep Toman: Kind of. They are not a company but it's distributed across the network.

Rep Richter: The company pays a fee to the network that provides that service, correct?

Rep Toman: Yes.

Rep P Anderson: How much is it going to cost to make a blockchain company?

Rep Toman: There's contracts & the more contracts, the more it costs. The cost is variance & as a business it has to make a decision.

Rep P Anderson: Who's going to help them to figure out how much it costs?

Rep Toman: You should find someone who is an expert in that field.

Rep P Anderson: Is that available to businesses in ND?

Rep Toman: Yes, it's on their web site.

Rep Adams: How do I get paid back?

House Industry, Business and Labor Committee HB 1045 Jan 8, 2019 Page 5

Rep Toman: You can set up a wallet & they will have to do that also. It's doesn't cost to set up a wallet.

Chairman Keiser: How do they convert it to dollars?

Rep Toman: You can change it to currency from your wallet. Some other will have to move it & exchange it.

Rep Adams: I'm going to send you my payment today, when you received it, is it still worth the same. How does that conversion work?

Rep Toman: It's not on the stock trading exchange. The volume is always changing. When you cash out it is linked to your bank account. It's locked in at what you send it at. It's not held for an investment. It does have the potential to be up or down at what you actually bought it at.

56:30

Rep M Nelson: How do I audit your books?

Rep Toman: I suppose you would have to get legal involved & subpoenaed those documents.

Rep M Nelson: What if I'm just not going to cooperate.

Rep Toman: There could be a cost to have an expert or budget a person to do that type of auditing.

Rep M Nelson: Is there some way to break in to see the books?

Rep Toman: It's not really breaking in, you just have to know what their ideas, not their key. Than you can audit that idea with the transactions.

Rep M Nelson: What prevents other business to get my ID & look at my books?

Rep Toman: You do.

Rep M Nelson: If I keep it secure, how can I be audited?

Rep Toman: It's the same as hard copy, you can burn it.

Rep M Nelson: How does law enforcement access what is potentially a legal transaction?

Rep Toman: I'm not sure of the process for behind the scenes. You won the private inscription key, so they can't break into your account but they can see the public ledger.

Rep Schauer: What are the economic benefits that occurred in other states?

House Industry, Business and Labor Committee HB 1045 Jan 8, 2019 Page 6

Rep Toman: We are bringing in jobs, for example, AI, AI courses, data storage & IT personnel for examples.

Chairman Keiser: There is a company that is interested about coming to ND. One last question, I know you don't want it regulated but we need something to regulate to catch the bad actors.

Rep Toman: I'll let the commissioner talk about that.

Chairman Keiser: Anyone here to testify in support, opposition, neutral on HB 1045?

Jim Silrum~Deputy Secretary of State: I would like to draw the committee to Section 17, page 24. A new type of entity is created in the state & it's called the Series LLC's. We have several questions. We want to know if the committee thinks it would be wise to put into Chapter 10-32.1, rule make authority to the Secretary of State for the purposed of registering & administrating the ongoing aspect of these LLC's.

Even though there are definitions of LLC's when it occurs within the organization agreement which is outside of the scope of government regulation, there are questions that come up. We understand that the parent LLC would be registered with the state & would have an annual report.

A series under the umbrella of the parent LLC, would they have to go through name availability to determine their name. Would each of the baby LLC's have to have registered agent or would they have the same registered agent as the parent LLC? Would the baby LLC's have to submit an annual report or would they be under the umbrella of the parent LLC?

We are asking the committee to consider that for the sake that we don't necessarily have the time to insert into law, what the legislature wants done with these sorts of questions.

Naming convention, we would like to avoid some multiple naming. We would be available to help.

Chairman Keiser: You currently have rule making authority for all the other forms of corporations? Do you not?

Jim Silrum: I do not believe so. I would have to do research to answer that question.

Chairman Keiser: We will hold this bill.

2019 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee

Peace Garden Room, State Capitol

HB 1045 2/4/2019 32110

SubcommitteeConference Committee

Committee Clerk: Ellen LeTang

Explanation or reason for introduction of bill/resolution:

Electronic transaction definitions, blockchain technology & smart contracts, number of shareholders & series limited liability companies.

Minutes:

Chairman Keiser: Reopens the hearing on HB 1045.

1:10

Chairman Keiser: Repeats the amendment.

Rep Laning: Didn't turn on mike.

Chairman Keiser: What are the wishes of the committee?

Rep Laning: Moves the amendment.

Rep Schauer: Second.

Voice vote ~ motion carried.

Chairman Keiser: We have HB 1045 as amended before us.

Rep Schauer: Moves a Do Pass as Amended.

Rep Richter: Second.

Chairman Keiser: I don't understand this well. My questions is are we getting the cart before the horse?

Rep Schauer: In dealing with IT people, I'm telling you, when they say do it, do it. I support it.

House Industry, Business and Labor Committee HB 1045 Feb 4, 2019 Page 2

Rep D Ruby: Why would people want to list their companies on this platform? It seems odd to me. Seems high technology companies, this is the way they perform. I'm going to support it.

Rep Richter: Other states do electronically because it's faster.

Rep Bosch: I'm not going to support this. There are things in this this bill we don't know or understand. I don't feel comfortable supporting this.

Rep Kasper: I will echo Rep Bosch's concerns. I can't support it.

Roll call was taken on HB 1045 for a Do Pass as Amended with 10 yes, 4 no, 0 absent & Rep Laning is the carrier.

19.0127.01001 Title.02000 Prepared by the Legislative Council staff for Representative Toman January 8, 2019

DP 2/4/19

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1045

Page 29, after line 7, insert:

"14. The secretary of state may adopt rules reasonable and necessary to address requirements related to the secretary of state for registration and continuing existence of the series limited liability companies established under this section."

Renumber accordingly

		SE STA		IG COMMITTEE OTES		
	BILL/RESOLU		10.	1045		
House	Indus	try, Busi	iness a	nd la bor	Com	mitte
		🗆 Sub	ocomn	nittee		
Amendment LC# or Description:	19.	.012	7.010	01 title .02	2000	
	As Amended			Rerefer to Appropriat		
Conter Actions] Place on Cons] Reconsider			Seconded By <u>Rep</u>		er_
Other Actions	Place on Cons Reconsider			Seconded By		Cr No
Conter Actions	Place on Cons Reconsider	9			Schau	
Other Actions	Place on Cons Reconsider	9		Seconded By <u>Representatives</u>	Schau	
Other Actions	Place on Cons Reconsider	9		Seconded By <u>Representatives</u> Rep O'Brien	Schau	
Other Actions Motion Made by Represent Chairman Keiser Vice Chairman Le	Place on Cons Reconsider	9		Seconded By <u>Representatives</u> Rep O'Brien Rep Richter	Schau	
Other Actions Motion Made by Represent Chairman Keiser Vice Chairman Le Rep Bosch	Place on Cons Reconsider	9		Seconded By <u>Representatives</u> Rep O'Brien Rep Richter Rep Ruby	Schau	
Other Actions Motion Made by Represent Chairman Keiser Vice Chairman Lei Rep Bosch Rep C Johnson	Place on Cons Reconsider	9		Seconded By <u>Representatives</u> Rep O'Brien Rep Richter Rep Ruby Rep Schauer Rep Adams Rep P Anderson	Schau	
Other Actions Motion Made by Represent Chairman Keiser Vice Chairman Let Rep Bosch Rep C Johnson Rep Kasper	Place on Cons Reconsider	9		Seconded By <u>Representatives</u> Rep O'Brien Rep Richter Rep Ruby Rep Schauer Rep Adams	Schau	
Other Actions Motion Made by Represent Chairman Keiser Vice Chairman Lei Rep Bosch Rep C Johnson Rep Kasper Rep Laning	Place on Cons Reconsider	9		Seconded By <u>Representatives</u> Rep O'Brien Rep Richter Rep Ruby Rep Schauer Rep Adams Rep P Anderson	Schau	

				Roll Call Vo	te #:	-
	2019 HC	DUSE ST ROLL (NG COMMITTEE /OTES		
	BILL/RESO		NO.	1045		
House	Ind	ustry, Bus	iness a	and Labor	Com	mittee
	□ Subcommittee					
A						
Amendment LC# o Description:	r 					
Recommendation						
	Adopt Amer					
	🔀 Do Pass		t Pass			Idation
	Mas Amende			Rerefer to Appropriation	ons	
	Place on Co	nnsent Ca	lendar			
			icitual			
Other Actions	Reconsider			0 	• • •	
Motion Made by_	Reconsider	nuer		Seconded By $\frac{R_{\odot}}{R_{\odot}}$		
Motion Made by Represe	Reconsider	Yes		Representatives	Yes	No
Motion Made by Represe Chairman Keise	Reconsider	Yes		Representatives	Yes	
Motion Made by Represe Chairman Keise Vice Chairman	Reconsider	Yes	No	Representatives Rep O'Brien Rep Richter	Yes	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch	Reconsider	Yes X X		Representatives Rep O'Brien Rep Richter Rep Ruby	Yes X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson	Reconsider	Yes	No	Representatives Rep O'Brien Rep Richter Rep Ruby Rep Schauer	Yes	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper	Reconsider	Yes × × ×	No	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep Adams	Yes X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning	Reconsider	Yes × × × ×	No	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P Anderson	Yes X X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper	Reconsider	Yes × × ×	No	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep Adams	Yes X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning	Reconsider	Yes × × × ×	No	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P Anderson	Yes X X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning	Reconsider	Yes × × × ×	No	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P Anderson	Yes X X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning	Reconsider	Yes × × × ×	No ×	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P AndersonRep M Nelson	Yes X X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning	Reconsider	Yes × × × ×	No ×	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P Anderson	Yes X X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning Rep Louser	Reconsider	Yes × × × ×	No ×	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P AndersonRep M Nelson	Yes X X X X	No
Motion Made by Represe Chairman Keise Vice Chairman Rep Bosch Rep C Johnson Rep Kasper Rep Laning Rep Louser	Reconsider	Yes × × × ×	No ×	RepresentativesRep O'BrienRep RichterRep RubyRep SchauerRep AdamsRep P AndersonRep M Nelson	Yes X X X X	No

REPORT OF STANDING COMMITTEE

HB 1045: Industry, Business and Labor Committee (Rep. Keiser, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS (10 YEAS, 4 NAYS, 0 ABSENT AND NOT VOTING). HB 1045 was placed on the Sixth order on the calendar.

Page 29, after line 7, insert:

"14. The secretary of state may adopt rules reasonable and necessary to address requirements related to the secretary of state for registration and continuing existence of the series limited liability companies established under this section."

Renumber accordingly

2019 SENATE INDUSTRY, BUSINESS AND LABOR

HB 1045

2019 SENATE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee

Roosevelt Park Room, State Capitol

HB 1045 3/6/2019 Job #33348

□ Subcommittee □ Conference Committee

Committee Clerk: Amy Crane

Explanation or reason for introduction of bill/resolution:

relating to electronic transaction definitions, blockchain technology and smart contracts, number of shareholders, and series limited liability companies; relating to electronic transactions, filing of an annual report by corporations engaged in farming or ranching, Business Corporation Act definitions, knowledge and notice, share certificates, corporate voting list and voting trusts, acceptance of shareholder act by the corporation, corporate records, corporate dissolution procedure, and the filing of an annual report by a publicly traded corporation.

Minutes:

Att. #1-2

Chairman Klein: Opened the hearing on HB 1045. All members were present.

Representative Toman, District 34: introduced the bill. Walked through the sections of the bill and the changes it would make. See attachment #1 for testimony in support of the bill.

Senator Piepkorn: What is it about blockchain that has to be law, in the North Dakota Century Code?

Representative Toman: Essentially this is supplying surety to the implementer and the person signing the contracts with that company. We're saying this is a valid form of incorporation, a valid form of contract so right now we can do it but when it comes to court cases, there might not be surety that it's a legal form of contract.

Chairman Klein: It's new technology and totally new to the century code.

Representative Toman: Correct.

Chairman Klein: Wasn't there a study of bitcoin last session?

Representative Toman: Yes, it's essentially like that technology except we're not talking about implementing bitcoin ATM's or anything, but just digitizing your business and having it hold up in court that it's a valid business structure and it's also valid contracts, if you choose to use both of those or one or the other.

Senator Roers: When we use DocuSign its supposedly very secure is this similar to that?

Representative Toman: That is secure. But this is using cryptography and decentralization which essentially makes this data more secure. So you could use this technology in the DocuSign arena. The application is not limited just to documents though. You can track your shipments. It's not just for security purposes it's for streamlining and verifying, it's kind of unlimited.

Senator Burckhard: Can this be breached?

Representative Toman: That all depends if you're using a private blockchain or a public blockchain structure. The biggest single point of failure would be on a single level if your computer gets breached but that would be just your personal data.

Senator Burckhard: Does this technology transfer us to a paperless world?

Representative Toman: I think we could already be there but yes.

Vice Chairman Vedaa: Is this similar to tracking stuff? Like when you're tracking a package?

Representative Toman: UPS and FedEx could be using this I'm not sure.

Shawn Riley, Chief Information Officer, State of North Dakota: think of blockchain as your highway, it can carry cars, pickups, trucks, they all drive on top of that road. It is a technology that enables us to verify what is on that road with many different people. If a truck were to drive across the road we could all verify the identity of that vehicle. Blockchain uses many different individuals to be able to verify the identity of an action. That can be a transaction within a credit or debit within a ledger or it can be the document in itself. This bill enables us to take advantage of new technologies that allows us to be able to verify documents in an incontrovertible way. In a way that has not been hacked yet. This technology uses a confirmation from many different sources to ensure the accuracy of the object. So not necessarily what the document says, but that the document is legitimate and comes from a legitimate source and is going to a legitimate source. So that technology is being tested and being used in many different cases. The question about tracking of packages, logistics is the number 1 use right now. So to have a complete and absolute chain of custody for any component from any system and that is something the shipping industry is extremely excited about, oil and gas as well, the industries around package management and those industries are already well in development. When it comes to government, you have the accessibility to voting. In the last election West Virginia did its first pilot of the voting system, they allowed the armed forces veterans who are remote of West Virginia to be able to vote via a blockchain system. It is very highly secure and very highly identifiable to who is voting. They have no idea what you are voting so that is still confidential. But they can verify that you as the individual has voted. Those type of tech is not necessarily on our board in North Dakota today. But documents especially land grants, land ownership documents, would have huge potential for value on a blockchain type of system. While the legislature has approved an electronic signature this component of blockchain is nebulous, and whether or not it is really approved through electronic signature and whether or not it's a viable legal signature or not.

This bill provides clarity. So we know when a person's digital signature is legal, just like the handwritten signature is legal, and now this credential coming from a blockchain also being legal.

Vice Chairman Vedaa: The blockchain part, I've gotten these emails where it identifies me as having to approve something, so then would this blockchain be able to send it right back to my email, to make it secure? So down the road I say I had nothing to do with that. is that what this will do? Will it be able to identify it right back to me and to that email address?

Shawn: We're applying a mathematical formula to you as an individual. When your email address is set up, we apply a very specific mathematical formula. That identity is unique and is verifiable across the chain. Each person that is across the blockchain then identifies that number that that is absolutely and only you. Any change to the process it can tell it's not you. The real technology is a little more complex than that. It assigns you a math value, that value is unique.

Senator Roers: Who owns this?

Shawn: It can be owned in lots of different ways. We can get a private blockchain shared between state government entities and universities. We could also use a public one. There are about 40,000 nodes and a node is a verifier. We could do just US, or north America, or worldwide.

Senator Roers: Who developed this and then who pays for it?

Shawn: The blockchain is an open source technology is paid for by us being one of the nodes. So we choose to be one of the verifiers. This is part of the advantage of the technology, so instead of having to pay for the entirety of this entire system, we can just pay for a piece of it. Because everyone to be able to be on the chain has to agree to the same rules. And that rule set, Representative Toman mentioned Ethereum, which is one of the bodies that created a set of rules of how their blockchain works. You'll hear all of these cryptocurrency names bitcoin, etc. They have changed a certain ruleset and then as we look at those technologies, Ethereum as an example, is being used for documents, voting, other systems. If we agree to be on that system, we pay our part just for that one node but we don't have to pay for the entirety. We just pay for one node with an agreement to play by the rules, and if they don't then they automatically get kicked off the system.

Senator Roers: So if they agree, all the people in the world are gonna pay something though right?

Shawn: It's based on the system you chose to run.

Senator Roers: Who am I writing the check out to?

Shawn: The only place that money goes is to your operational costs. We're not sending money to Ethereum, or Bitcoin or anybody else. You're just paying for the network specifically and to be on it. There is no central body to send you a bill, which is part of the appeal.

Senator Roers: So nobody owns and manages it? So how does it develop?

Shawn: That's the beauty of the internet. It's exactly like Facebook when it started out but Facebook is centralized so it eventually had to monetize to pay for its servers. Since blockchain is not centralized it doesn't. University systems are the ones putting a lot into it because there is a lot of value for research information in this space and being able to do universal verification around research data. No one is paying a central body for this service. There can come down to transaction fees when trying to move cryptocurrency, but cryptocurrency itself is different however. Cryptocurrency is like pulling out my credit card to pay for something. Blockchain is just the technology that allows that to happen. In the world of blockchain we individually pay for each node so we can partake.

Senator Piepkorn: It's almost impossible to believe that nobody is making money off of this. How did you acquire your knowledge?

Shawn: People are making money off of blockchain yes, there is not a subscription. Most often off of cryptocurrency. I personally enjoy looking at cutting edge technology. Blockchain has been popping up for four or five years. Blockchain has the potential to remake everything we do. How many times has the FDA had to backtrack to figure out the food source? My farm was part of the avian flu epidemic. When did that originate is it connected to food etc. That takes months to figure out today. With blockchain that is something we could figure out in a half an hour. I go read about it because I have a personal interest in it.

Chairman Klein: How did you become the guru of IT in our state, what created that sense of learning? Where do you get that drive to move into the future?

Shawn: I have a growth mindset. My parents were entertaining people they had their own addictions. I had spoken publicly in support of the first lady and managing addictions. My experience growing up enabled me to search for a lot of growth opportunities. When I was in sixth grade my dad got a PS2 to do accounting basically and he made me figure it out how to work it. And I've been interested in it ever since. As I've looked through history and seen what has changed the world over and over again, and it's been technology. I've been fascinated by that my whole life.

Senator Piepkorn: What's the importance of this bill being North Dakota law?

Shawn: Look at what 18 other states are working through right now and at the 13 bills Wyoming just passed. This is being recognized as a significant shift for a state to be able to recognize legal authority. That is happening all across the nation. We don't want North Dakota to be left behind. Tech moves extremely fast; we want to enable the legal use of edocuments in the form on a blockchain today so that we can continue to evolve our processes. When I look at some of my customers across the state, I look at department of trust lands, DOT, DHS, they have all brought forward initiatives that would be highly benefited if we could use a blockchain environment.

Senator Piepkorn: But how?

Shawn: Department of trust lands for example, has to have permanent records of any land movements. As they are moving from one environment to another, in their old world that was all done with paper. In their current world they are using a Microsoft access database that is technology that is already twenty years old and very problematic. The advantage of moving us to blockchain in this sense would be we could create a permanent public record and a permanent private record as necessary for the data. But to be able to create that record without having to worry about this system that is archaic today and already cause us all sorts of troubles. So we can move them into a technology that is accessible across thousands of different systems instead of one system where they are individually responsible for that environment. So its managing the risk factor, its creating a much more pliable and flexible technology and its making sure that all of the records for everything the department of trust lands goes through, is maintained in perpetuity whereas today they are going through a constant conversion problem. That is what we are looking to not have to go through, another massive conversion of a system that has to be legacy matched.

Chairman Klein: And it's still very secure?

Shawn: yes

Senator Piepkorn: With the rapid pace and change of technology, how can you be sure this is the technology that is going to be maintained in perpetuity?

Shawn: The difference here is the evolution of the technology so will something else supplant blockchain in five years? Probably. But the amazing capabilities here and why you have so many organizations worldwide that are very excited about this is because once it's in this format, the ability to convert it to the next format becomes infinitely easier. So for the department of trust lands for example, you're using a database structure that was popular when I was in tenth grade in high school. By the time I was I second year of college nobody would have been using that anymore. The conversion process is vastly longer and more expensive. Now, because we didn't keep it moving. The new technology in the blockchain environment when it sits in that data structure, you're getting most of those updates compliments of the automated nature of how the blockchain is continuing to update itself. So you're taking out the long scope upgrade issues as we go through the system so will blockchain be the best world class thing five years from now, it may be. But will it have evolved? That is the most likely scenario and we will be able to take advantage of that. blockchain will evolve.

Vice Chairman Vedaa: That was my question too, how does that kid gonna crack this thing and what are we gonna do about it when it happens?

Chairman Klein: But we need to consistently update the code because of all this technology so we can maintain legally, we can perform legal contracts. This is what we need to do so that we can do that and move on so in 5-10 years when Senator Kreun is chairing the committee and he can change it again.

Senator Roers: The governor has been talking about getting the whole state more sophisticated in its communications and all that, is this part of that plan?

Shawn: Blockchain in this sense needs to become a commodity technology and then we would need to create commodity technologies that every agency can plug into so during that time the problem we're working through; all agencies can get involved into. The reality is that people think that North Dakota acts like an individual company when in reality they look more like the united nations. We probably have every different kind of technology in use in the state right now. It is a foundational step to getting towards that much more united North Dakota way. We have the gateway initiative. Just because we all have the same tire doesn't mean we have the same performance car.

Chairman Klein: I see the tire is \$80,000 to the secretary of state because as we move this forward there are registration issues and?

Shawn: The reality is the tech has different impacts in different areas. Secretary of state will have a different aspect of how they implement business concerns, but there are all these different aspects for documents. We'll have to implement those individually per project. So that will be something that if we have a baseline capacity for project, once we build out primary blockchain environment, we won't have to constantly replicate. We'll have a singular primary blockchain environment and we won't have to create 40-50 different ones.

Chairman Klein: We've always talked about technology saving us money, but we have to spend on the front end to save on the back end.

Shawn: When it comes to IT saving money, there is a cost per unit of service, so what does the singular deliverable cost do, then there is the volume cost. So what is the actual ask form all of our customer base. Then on top of that, we've got the two primary costs, then the other aspect equals the value outcome. So how many people did it take to x amount of work before. This is a problem; the reality is every company goes through this. If I'm spending a dollar on this today, tomorrow it costs me 75 cents, we have lowered the cost of unit per service, we have made this cheaper. The problem is everybody wants two of them now. And the actual cash over cash cost, has gone up. But what does it mean what have we done for the service? So now we can take certain amounts of work out of the staff. We're trying to automate commodity cost. We're trying to make computers do things. If we didn't have computers, we'd need a lot more people doing the same amount of work that one computer can do. The scale of it isn't even comparable.

Jim Silrum, Deputy Secretary of State: testified in support of the bill. I'm here to explain the fiscal note and provide for you and very small amendment. The last section of the bill calls for a creation of a new business entity type that is known as a series LLC. It is a viable useful form of business identity. For example, a theatre could have a series LLC that would cover the performers, another one for concessions, and another for ticketing. Then if someone bought a cup of coffee and spilled it on someone else, only concessions would be liable. When this bill came into the house we asked the house to adopt an amendment that would allow us to adopt regulations for this. For example, naming series LLC, registered agents, etc. our system is a sequel database, in order to accommodate that, we have to accommodate the listing of the series LLC's. That is what is going to cost \$80,000.

Chairman Klein: So what you're saying is the addition of the series limited corporation is what brought the fiscal note?

Jim: If you eliminated section 17 then you would eliminate the need for a fiscal note. On page 29 line 8, we recommended that this be changed, so our amendment just changes 'and' to 'or' because that is consistent with the administrative rules (see attachment #2 for amendment).

Vice Chairman Vedaa: The house is okay with this change?

Jim: Yes.

Senator Roers: It doesn't say series LLC, is that an oversight?

Jim: No, chapter 24 is the LLC chapter of the century code. So since it is added into that chapter it is seen as a series LLC.

Senator Roers: The reason for creating this section is because there will be some nuances on this that blockchain will need?

Jim: We would've wanted this to be a bill of its own. In a sense you could say this violates the germane but it does qualify because everything else is about businesses of any kind using blockchains to ensure that nothing else is being overlooked. To me, blockchain is how do you take a thing, piece of data, it starts off in one location. How do you know when it's been transferred across 500,000 nodes, that it's still the same piece of data? That's where inscription hashtag technology really comes into play because each data on a server is recognized with a hashtag, and if anybody changes that, the chain breaks. Businesses may want to use that to secure their contractual agreements. This just gives them the opportunity to use that. it truly is section 17 and 18 that are somewhat outside the bill.

Representative Toman: I did neglect to bring that up. The purpose is to put us in a higher playing field. Microsoft will most certainly make the money off the product if they choose to release the product.

Senator Piepkorn: What did you base this bill on where did it come from?

Representative Toman: I based this off of Wyoming's bills. Reading about the blockchain technology, and thought this would be good for North Dakota because we want to be a competitor.

Senator Piepkorn: If I wanted to write a recap of this hearing what would I say?

Representative Toman: Diversify our economy and provide opportunity for 21st century technology development.

Chairman Klein: Continue to move forward. You can tell your constituents you've moved them forward into the future.

Chairman Klein: closed the hearing on HB 1045.

Vice Chairman Vedaa: Moved to Adopt Amendment.

Senator Roers: Seconded.

A Roll Call Vote Was Taken: 6 yeas, 0 nays, 0 absent.

Motion Carried.

Vice Chairman Vedaa: Moved a Do Pass as Amended and Rerefer to appropriations.

Senator Roers: Seconded.

A Roll Call Vote Was Taken: 6 yeas, 0 nays, 0 absent.

Motion Carried.

Senator Burckhard will carry the bill.

19.0127.02001 Title.03000 Adopted by the Senate Industry, Business and Labor Committee March 6, 2019 SC

314

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1045

Page 29, line 8, replace <u>"and"</u> with <u>"or"</u>

Renumber accordingly

BIL	ROLL C L/RESOLUTI		b. <u>1645</u>		
Senate Industry, Business ar	nd Labor			Com	mitte
	🗆 Sub	comm	nittee		
Amendment LC# or Description:	19.0	77.	1.0200/		
□ As Amen	□ Do Not ided Consent Cale		 □ Without Committee I □ Rerefer to Appropria 		datior
Notion Made By	λ	Se	econded By	<u>s</u>	
Senators	Yes	No	Senators	Yes	No
Chairman Klein	X	No	Senators Senator Piepkorn	Yes	No
Chairman Klein Vice Chairman Vedaa	X	No			No
Chairman Klein Vice Chairman Vedaa Senator Burckhard	X X X	No			No
Senators Chairman Klein Vice Chairman Vedaa Senator Burckhard Senator Kreun Senator Roers	X	No			No
Chairman Klein Vice Chairman Vedaa Senator Burckhard Senator Kreun	XXXX	No			No
Chairman Klein Vice Chairman Vedaa Senator Burckhard Senator Kreun	XXXX	No			No
Chairman Klein Vice Chairman Vedaa Senator Burckhard Senator Kreun	XXXX	No			No
Chairman Klein Vice Chairman Vedaa Senator Burckhard Senator Kreun	XXXX	No			No
Chairman Klein Vice Chairman Vedaa Senator Burckhard Senator Kreun Senator Roers	XXXX				No

				Dat Roll Call Vote #:		
Consta Induction	BILL/RE	ROLL		NG COMMITTEE YOTES D045	2	
Senate Industry	y, Business and Lat				Com	imitte
		L Su	lbcomm	littee		
Amendment LC# or	Description:					
Recommendation:	 □ Adopt Amendr ☑ Do Pass ☑ As Amended □ Place on Const 	l Do No		□ Without Committee F ⊠ Rerefer to Appropria		datior
Other Actions:	Reconsider			□		
Sena	ators	Yes	No	Senators	Yes	No
Chairman Klein		X		Senator Piepkorn	X	
Vice Chairman V		X				
Senator Burckha	rd	X				
Senator Kreun		X				-
Senator Roers		X	-			
100000000000000000000000000000000000000					-	
			4 iv			
			-			
Fotal (Yes) _	6		Nc	0		_
\bsent	0					
Floor Assignment		Bu	wch	lavd		_

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

HB 1045, as engrossed: Industry, Business and Labor Committee (Sen. Klein, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS and BE REREFERRED to the Appropriations Committee (6 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1045 was placed on the Sixth order on the calendar.

Page 29, line 8, replace "and" with "or"

Renumber accordingly

2019 SENATE APPROPRIATIONS

HB 1045

2019 SENATE STANDING COMMITTEE MINUTES

Appropriations Committee

Harvest Room, State Capitol

HB 1045 3/14/2019 JOB # 33726

□ Subcommittee □ Conference Committee

Committee Clerk: Alice Delzer

Explanation or reason for introduction of bill/resolution:

A BILL for an Act to create and enact subsection 16 to section 9-16-01, section 9-16-19, a new section to chapter 10-19.1, and section 10-32.1-102 of the North Dakota Century Code, relating to electronic transaction definitions, block-chain technology and smart contracts, number of shareholders, and series limited liability companies; and to amend and reenact sections 9-16-02, 10-06.1-17, 10-19.1-01, and 10-19.1-01.2, subsection 6 of section 10-19.1-66, subsection 1 of section 10-19.1-73.3, sections 10-19.1-76.3 and 10-19.1-81, subsections 2, and 11 of section 10-19.1-84, subsection 1 of section 10-19.1-110, subsection 2 of section 10-19.1-146, and subsection 2 of section 10-35-28 of the North Dakota Century Code, relating to electronic transactions, filing of an annual report by corporations engaged in farming or ranching, Business Corporation Act definitions, knowledge and notice, share certificates, corporate voting list and voting trusts, acceptance of shareholder act by the corporation, corporate records, corporate dissolution procedure, and the filing of an annual report by a publicly traded corporation.

Minutes:

No testimony submitted

Chairman Holmberg: called the Committee to order on HB 1045. All committee members were present except Senator Poolman and Senator Erbele. Chris Kadrmas, Legislative Council and Larry Martin, OMB were also present.

Jim Silrum, Deputy Secretary of State: A fiscal note and an amendment was asked for from the committee chair in the House, but for some reason that I can't explain, it just never came through. Now that's in the Senate it is before you and that is why this is the first time it is being considered. Section 17 of HB 1045 deals specifically with a new entity type in ND called a Series LLC (Limited Liability Companies) and that is a new filing type that we certainly understand the principles behind it, we appreciate that. However, it does not relate to block-chain technology as is the case in all of the rest of the bill. So, I am here today to tell you that if the committee so choses, if Section 17 were removed from the bill to remove Series LLC's, that would eliminate the fiscal note entirely and then in the interim we could work with State Bar Association, we could work with other interested partners to see if Series LLC is a good thing in ND and if so then we could appropriately add them as a business entity type in 2021 when you guys meet again. Otherwise, if you want to have the Series LLC as it appears in this, we would need to have an amendment to this bill that would call for giving us the authority to create administrative rules, would also call for us to

Senate Appropriations Committee HB 1045 03-14-19 Page 2

have a continued effective date so that we could get this ready when the rules are ready as opposed to by July 1st of this year. And with that we would also need a fiscal note of \$80,000 for accommodating all of those things within the system to make this a reality. We agree whole-heartily that Series LLC is something that should be an entity type in the future but we do believe at this time that it would be far better to work with, instead of just having this be in the bill just in the bill because it came from the state of Wyoming, we work with our ND partners to get it right, to make sure it's right.

(0.03.25) Chairman Holmberg: So what you are asking for is actually two directions, both directions require an amendment. One direction would be to remove Section 17 and allow you to work with the various entities in the state and come back with some suggestions in 2021. If on the other hand, we feel that we should pass the bill with Section 17, you would need some room making authority and you would also need the \$80,000.00 fiscal note to be triggered. That was confirmed. And what has happened in other states? Are we the 49th to pass this LLC or are there just a handful of states that have gone down this path?

Jim Silrum: I don't have the exact number of the states in which the Series LLC is there, but Wyoming patterned theirs off of Delaware, so I know those states have Series LLC. I know it is a growing phenomenon across the country because it makes an awful lot of sense for an entity to be able to protect the liabilities of the various parts of its organization. It is a very useful entity type and should be the case in the future. We just want to make sure it's done right according to ND standards and I believe this didn't have the vetting process when it came into this bill. And in our conversations with Wyoming, the Secretary of State's Office, they have indicated that they have had tremendous difficulty registering businesses under the Series LLC based on how their law is crafted so therefore, I think we need to take a look at it further and learn from what they have learned.

Chairman Holmberg: Are there folks knocking on the door asking for this? You're here because the bill is here and would set up something that you're telling us that you don't believe your office is comfortable with initiating without some work being done.

(0.05.56)Jim Silrum: To my knowledge, we do not have anyone knocking on our door asking for this at this time. The only way we knew that Series LLC was going to be a new entity type was when we happened to see it within this bill. We were not consulted ahead of time. That is not a requirement or legislation that affects our office, that we be consulted. But, I am just stating the fact that we were not consulted. I am not sure that the State Bar Association was consulted. I am not sure who was consulted when this bill was drafted.

Chairman Holmberg: This is only part of a much larger bill. You're not testifying about the rest of the bill. You are focusing on Section 17.

Jim Silrum: Correct. The rest of the bill deals with block-chain.

Senator Robinson: Are you telling us that the Secretary of State's Office will review instead over the upcoming interim or should this be a legislative study?

Jim Silrum: We would gladly do that without a study.

Senate Appropriations Committee HB 1045 03-14-19 Page 3

Chairman Holmberg: There are 8 states that currently have this kind of statute.

V. Chairman Krebsbach: What is the difference between the Series LLC and the regular LLC?

(0.08.04) Jim Silrum: The difference as we understand it is that, if I might explain it by way of an example. (He used Belle Mehus for an example for this. (0.07.57-0.09.13) Across the country this is being counted as a new way in which LLC's should form. We always take note when Delaware does something because Delaware is the state of business origination because of their good court rulings, friendly court rulings. I think that is where we are headed. In ND we want to make sure that it's done properly.

Senator Bekkedahl: You discussed amending this. Was that in the policy committee in the Senate, or in the House? If what you are telling us now, the information you are giving us now about Section 17, did this same testimony get to the Senate IBL committee?

(0.10.17) Jim Silrum: It did go to Senate IBL committee. To our discredit, it came to them after the fact, when they had already passed the bill, we went to the committee, asked them and they said since it needs to go to Appropriations let's have it go to Appropriations and if any amendments are necessary, let's do them there.

Chairman Holmberg: And then it goes back to them anyway.

Senator Hogue: Had a question regarding a bill in Judiciary concerning this type of thing but was told by Mr. Silrum it was not related to this issue.

(0.11.36) V. Chairman Wanzek: I googled right away and what is the Series LLC? The Series LLC allows you to form multiple mini LLC's and operate them all under a single umbrella.

Jim Silrum: That is correct. That is exactly why we need to study this because nowhere within this new section of law does it talk about, what are the registered agent requirements of this, do they all have the same registered agent or do they each have their own registered agent; what are their annual report requirements, do they all report under one annual report or do each in the series report this way. That's what we need to discuss and we'll discuss with the appropriate authorities as to whether or not those should be specified in law or specified in administrative role.

Senator Oehlke: I haven't heard of this before. It sounds like an elaborate shell game to avoid liability even more elaborate than the basic LLC and allowing people to invest in something without any risk at all. I think people should have a little responsibility in knowing what they are investing in before they throw their money in, whatever it is. I don't care if it's bit coins or you want to invest in a local tavern, you should have your head about you when you do that sort of thing. Shouldn't you?

Jim Silrum: Are you asking me to make an opinion on this?

Senator Oehlke: I was just making a comment.

V. Chairman Wanzek: Made comments about his farm operation regarding this issue.

(0.14.50) Jim Silrum: That might be a possibility depending on what type of entity you have right now, if you have a corporation or a partnership, then obviously you'd have to convert to the LLC and specifically a Series LLC to do that.

Chairman Holmberg: Is there anyone else going to testify on the bill? Seeing no one, he asked how long do you want to sleep on it?

Senator Grabinger: moved to remove Section 17 in HB 1045. 2nd by Senator Robinson. All in favor say aye. It carried.

V. Chairman Wanzek: Moved a Do Pass as Amended. 2nd by Senator Grabinger.

Chairman Holmberg: Call the roll on a Do Pass as Amended on HB 1045.

A Roll Call vote was taken. Yea:14; Nay: 0; Absent: 0.

Chairman Holmberg: There will be an amendment drafted on this bill. This goes back to IBL. Senator Burckhard will carry the bill.

The hearing was closed on HB 1045.

19.0127.02002 Title.04000 St

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1045

In lieu of the amendments adopted by the Senate as printed on page 867 of the Senate Journal, Engrossed House Bill No. 1045 is amended as follows:

Page 1, line 1, after the second comma insert "and"

Page 1, line 2, remove ", and section 10-32.1-102"

Page 1, line 3, after the second comma insert "and"

Page 1, line 4, remove ", and series limited liability companies"

Page 24, remove lines 3 through 31

Page 25, remove lines 1 through 31

Page 26, remove lines 1 through 31

Page 27, remove lines 1 through 31

Page 28, remove lines 1 through 30

Page 29, remove lines 1 through 10

					Date: <u>3 - 1 4 -</u> Roll Call Vote #:		
	E			G COMMITTEE DTES			
	BILL/RESOLUT		0	1045	-		
Senate Appropriations						Committee	
		🗆 Sub	ocommi	ttee			
Amendment LC# or	Description:						
ecommendation: Adopt Amendment Do Pass Do Not Pass Without Committee Reco As Amended Rerefer to Appropriations Place on Consent Calendar					propriations		
Other Actions: Reconsider			ve sect	ion.			
	Grabenge						
Sen	ators	Yes	No	Senators	s Ye	s No	
Sen Senator Holmbe		Yes	No	Senators Senator Mathern	s Ye	s No	
Senator Holmbe Senator Krebsba	rg ach	Yes	No	Senator Mathern Senator Grabinger	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek	rg ach	Yes	No	Senator Mathern	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele	rg ach	Yes	No	Senator Mathern Senator Grabinger	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma	rg ach 	Yes	No	Senator Mathern Senator Grabinger	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda	rg ach 	Yes	No	Senator Mathern Senator Grabinger	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee	rg ach 	Yes	No	Senator Mathern Senator Grabinger	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever	rg ach : n ahl	Yes	No	Senator Mathern Senator Grabinger	r i	s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Sorvaa	rg ach : n ahl	Yes	No	Senator Mathern Senator Grabinger		s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Dever Senator Sorvaag	rg ach n ahl	Yes	No	Senator Mathern Senator Grabinger Senator Robinson		s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Sorvaa	rg ach n ahl	Yes	No	Senator Mathern Senator Grabinger Senator Robinson		s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Dever Senator Sorvaag	rg ach n ahl	Yes	No	Senator Mathern Senator Grabinger Senator Robinson		s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Dever Senator Sorvaag	rg ach n ahl	Yes		Senator Mathern Senator Grabinger Senator Robinson		s No	
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Oehlke Senator Hogue	rg ach n ahl		Nc	Senator Mathern Senator Grabinger Senator Robinson			
Senator Holmbe Senator Krebsba Senator Wanzek Senator Erbele Senator Poolma Senator Bekkeda Senator G. Lee Senator Dever Senator Oehlke Senator Hogue	rg ach n ahl		Nc	Senator Mathern Senator Grabinger Senator Robinson			

				Date: <u>3</u> Roll Call Vote	<u>-14 -</u> #:	201		
	019 SENATE ST ROLL C RESOLUTION NO	ALL V						
enate Appropriations						Committee		
	□ Sub	ocomm	ittee					
mendment LC# or Descriptio	n:							
X Do P X As A □ Place Other Actions: □ Reco		endar	Rerefer to Ap	propriations				
Notion Made By								
Senators	Yes	No	Senator	S	Yes	No		
Senator Holmberg	~		Senator Mathern		1			
Senator Krebsbach	1 T		Senator Grabinge		V			
Senator Wanzek		_	Senator Robinsor	1	V			
Senator Erbele	~							
Senator Poolman	~							
Senator Bekkedahl	1							
Senator G. Lee	r	_						
Senator Dever	K							
Senator Sorvaag	2					-		
Senator Oehlke	V							
Senator Hogue			· · · · · · · · · · · · · · · · · · ·					
otal (Yes) /	14	No						
	Sen. 1	Bur	okhard .	IBL				
Floor Assignment			· · · · · · · · · · · · · · · · · · ·	IBL		_		

REPORT OF STANDING COMMITTEE

HB 1045, as engrossed: Appropriations Committee (Sen. Holmberg, Chairman) recommends AMENDMENTS AS FOLLOWS and when so amended, recommends DO PASS (14 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1045 was placed on the Sixth order on the calendar.

In lieu of the amendments adopted by the Senate as printed on page 867 of the Senate Journal, Engrossed House Bill No. 1045 is amended as follows:

Page 1, line 1, after the second comma insert "and"

Page 1, line 2, remove ", and section 10-32.1-102"

Page 1, line 3, after the second comma insert "and"

Page 1, line 4, remove ", and series limited liability companies"

Page 24, remove lines 3 through 31

Page 25, remove lines 1 through 31

Page 26, remove lines 1 through 31

Page 27, remove lines 1 through 31

Page 28, remove lines 1 through 30

Page 29, remove lines 1 through 10

2019 CONFERENCE COMMITTEE

HB 1045

2019 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee

Peace Garden Room, State Capitol

HB1045 4/8/2019 34597

□ Subcommittee ⊠ Conference Committee

Committee Clerk: Ellen LeTang

Explanation or reason for introduction of bill/resolution:

Electronic transaction definitions, blockchain technology & smart contracts, number of shareholders & series limited liability companies.

Minutes:

Chairman Laning: Opens the conference committee hearing on HB 1045.

Chairman Laning: This is an up & coming electronic communication, whether we like it or not.

Sen Burckhard: This is up & coming digital technology that's going to come whether we are ready or not. The amendments that the senate side gave to it we the deleted the series limited liability companies. That was at a urging of the Secretary of State as I recall.

Chairman Laning: That's my understanding but haven't been told that directly. They added that on later.

Sen Vedaa: My understanding that there is a fee that it would take care of it, is that right?

Chairman Laning: Not to my knowledge. Just the normal registration fees for the companies. My understanding the \$80,000 was something new in the programing.

Sen Vedaa: That does ring a bell.

Chairman Laning: The series limited liability companies are an important part of the bill. It allows series limited liability companies to come to ND, right now they can't. It's a ground type floor type business opportunity that's coming. My understanding it's Wyoming passed bills addressing this.

By deleting that portion out of the bill it essentially deletes 2 years of time where we could have had those companies coming to ND. There would be one or two opportunities that we would miss by not having this clause in there. The monetary part that was added on & I'm not sure why. If we were to include that, I would assume that we would have to go to back

House Industry, Business and Labor Committee HB 1045 Apr 8, 2019 Page 2

to appropriations. The series limited thing is an opportunity for ND. At least the opening is there for companies coming to ND. The opening is there so that the companies that were interested in coming to ND could at least pursue it.

Rep Lefor: When I looked at this, at the end of the day, in our hearing we had a few block chain bills where the State IT division was here. He talked about that this is going to be a big thing going forward. I believe when we have a new type of business & spread rapidly, ND should have the ability to incorporate, we can be ahead of this process. Rather than coming back in two years & wished we would have done it today. I like how the house had it.

Sen Vedaa: If we would accede, would it go back to appropriations?

Chairman Laning: The fiscal note has nothing on it.

Sen Vedaa: Who was responsible for not preparing for this? Would have been our committee?

Chairman Laning: You amended to strike of the series limited.

Vice Chairman Lefor: Could we have Rep Toman come up & explain that?

Rep Toman~District 34: LLC coincide with the block chain technology. This ducktails into the practices of block chain companies. Page 3, numbers 1, 2, 3 & 4, of why it's important for a company to use this type of incorporation instead of multiple LLCs. The LLC's to protect how data is collected how assets are required by the first two there for security purposed. That is why it's important for block chain.

Rep Lefor: Do you have on page 3 of your handout, explain the paragraph "Delaware of the LLC"? My reading by having LLC's series, we are protecting ND based companies by requiring these bitcoins companies to have records, is that correct?

Rep Toman: That's the way I read it as well.

Chairman Laning: You need the blockchain technology to secure the series limited liability companies & they are an extension of the partnership. It is coming as far as the business world. I don't understand why we would hold it up. This is already passed by 2 different states. I we don't act on it now; we will have thrown two years away.

Sen Vedaa: The amendment was prepared by the senate appropriations committee. Could we go back & approve it with them & meet at another time.

Sen Piepkorn: Is it perhaps fiscal related?

Sen Vedaa: They are calling for another FTE position.

Chairman Laning: Closes the conference committee on HB 1045 & will reschedule.

2019 HOUSE STANDING COMMITTEE MINUTES

Industry, Business and Labor Committee

Peace Garden Room, State Capitol

HB1045 4/11/2019 34646

□ Subcommittee ⊠ Conference Committee

Committee Clerk: Ellen LeTang

Explanation or reason for introduction of bill/resolution:

Electronic transaction definitions, blockchain technology & smart contracts, number of shareholders & series limited liability companies.

Minutes:

Chairman Laning: Opens the conference committee hearing on HB 1045.

Chairman Laning: The Senate & myself talked with appropriations in regard of the fiscal note. The fiscal note is an estimate any agency of what it may cost. However, the fiscal note is not an actual appropriation. This being new technology, I don't see a rapid involvement in companies. They are just getting into this right now. I don't see a stampede of businesses coming into this state. The feeling from the House is the portion amended out is necessary as it allows the limited liabilities to come in.

Sen Burckhard: That is what we are thinking also, the fiscal note is necessary. We think section 17 should be put back into the bill. If we don't get this kind of legislation in, we are going to be two years behind. Our thoughts are the same.

Sen Piepkorn: There won't be any harm & we should be set up to be safe.

Chairman Laning: We should have a motion.

Jim Silrum~Deputy Sec of State: Block chain technology can be implemented without section 17 of the bill. Companies already in the state can utilize block chain technology for issuing of contracts & all of that.

We suggested to the Senate Appropriations & Senate IBL, that the series LLC, as it's purposed in section 17 of the bill, is a tad bit premature. Simply because this new business entity type was a new creation in this. Our thinking is that in the interim, let's have conversations with the ND Bar Association & the tax department.

Series LLCs that exist in other states that come here can & do operate here. It doesn't have to be recognized as an LLC because of its state of origin. We are only concerned about the

House Industry, Business and Labor Committee HB 1045 Apr 11, 2019 Page 2

ones organized here in ND. There are so many unanswered questions by section 17 that much of this would be forced to be put into administrative rule. With our conversations with the state of Wyoming, upon which this was patterned, the Sec of State's office said, 'tread carefully because it's been a miserable experience". We are not saying that we are opposed to series LLCs but let's get it right before we implement it.

Chairman Laning: Without passing that portion of Section 17 would ND be able to accept a new company or series LLC. Our concern would be that we miss or a two-year delay in possibly accepting new businesses in ND. This would be a missed opportunity for ND in allowing a new type of company to come into the state.

Jim Silrum: An LLC, series or otherwise, organized in another state, come into ND as a foreign, can & does have the ability to operate here with or without section 17. We would not be missing anything that organizes outside of ND.

The only thing by removing section 17 is that for now, an LLC can't convert or form in this state to a series LLC. It's kind of like a subsidiary of a corporation. Series LLCs are different in a way. We have so many questions.

Chairman Laning: The bill, I believe, allows you to develop those rules or whatever you feel you need.

Jim Silrum: It does.

Sen Piepkorn: To that point, why not keep section 17 & the outside can come in to operate. Why don't we iron out the details of the formation of LLC with the ND companies. You cannot foresee, without doing something, what might happen. This gives us the frame work & opportunity to do one.

Rep Lefor: The Wyoming experience, do you know how many block chain series LLCs there are?

Jim Silrum: I do not.

Rep Lefor: The wording in section 17, I think it also affords more protection of potential law suits, does it not? In term of knowing the asset information, is that in current code as well?

Jim Silrum: The series LLC does provide greater liability protection on assets. Which is why we are fully on board with implementing these someday. To the same extent that the liability would be protected, no, that's not the case under current statute.

Sen Burckhard: These discussions, wouldn't you have those either way?

Jim Silrum: Yes but I would ask the question in return, has the tax or state bar association commented on any of these to you? Because of a brand new business type was buried in a bill about blockchain, that maybe why it hasn't risen to the surface. I would at least suggest that you consider the possibility of asking the state bar association & tax department what implications there might be. You've heard ours.

House Industry, Business and Labor Committee HB 1045 Apr 11, 2019 Page 3

Rep Lefor: As we are talking here, I believe we have a conflict. We need this, but I also firmly believe in what you are saying. What would happen if we put an implementation date of July 2020?

Jim Silrum: At the very least, we would ask for that because it's going to take us a while to create this.

Rep Lefor: What date would you recommend?

Jim Silrum: The date you suggest is fine. With the understanding that we may have to come back in next legislative session & address some things.

Chairman Laning: Further discussion? We still feel that not implementing this would be a two year missed opportunity. The Sec of State office is going to have to develop this & make some rules. That is going to take some time. None the less, do you want to consider an amendment.

Sen Burckhard: I agree with what we were before where we will recede from the Senate amendment but amend a start date.

Sen Burckhard: Move the Senate recede from the Senate amendment & amends to add July 1, 2020.

Sen Vedaa: Second.

Chairman Laning: Further discussion?

Rep M Nelson: This is the right thing to do. I'm going to support the motion.

Roll call was taken on HB 1045 for the Senate to recede from Senate amendments & amend with 6 yes, 0 no, 0 absent & Chairman Laning & Sen Burckhard are the carriers.

19.0127.02003 Title.05000 Adopted by the Conference Committee

April 10, 2019

DO 9/10/19

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1045

That the Senate recede from its amendments as printed on pages 1233 and 1234 of the House Journal and pages 946 and 947 of the Senate Journal and that Engrossed House Bill No. 1045 be amended as follows:

Page 1, line 4, remove the second "and"

Page 1, line 13, after "corporation" insert "; and to provide an effective date"

Page 29, after line 21, insert:

"SECTION 19. EFFECTIVE DATE. Section 17 of this Act becomes effective on July 1, 2020."

Date: 4/10/2019

Roll Call Vote: ___1___

2019 HOUSE CONFERENCE COMMITTEE ROLL CALL VOTES

BILL/RESOLUTION NO. HB 1045 as (re) engrossed

House Industry, Business & Labor Committee

- □ HOUSE accede to Senate Amendments and further amend
- □ SENATE recede from Senate amendments
- SENATE recede from Senate amendments and amend as follows
- □ **Unable to agree**, recommends that the committee be discharged and a new committee be appointed

4/10 Yes X X X X X X X X	No	Sen Burckhard	X	4/10 X	Yes X	No
X X		the second se		X	Y	
		Can Vadaa			~	
X X		Sen Vedaa	X	X	X	
		Sen Piepkorn	X	X	X	
		Total Senate Vote			-	-
9.0127		02003	of a	Imendr	nent	
	. 05000 of engrossm					
	6 rman Laning	rman Laning	6 No: 0 rman Laning Senate Carrier 9.0(ス7 02003	6 No: 0 Absent: rman Laning Senate Carrier Sen Burd 9.0(27) 02003 of a	$\frac{6}{100000000000000000000000000000000000$	6 No: 0 Absent: 0 rman Laning Senate Carrier Sen Burckhard 9.0127 02003 of amendment

Add an effective date of July 1, 2020

Insert LC: 19.0127.02003 House Carrier: Laning Senate Carrier: Burckhard

REPORT OF CONFERENCE COMMITTEE

HB 1045, as engrossed: Your conference committee (Sens. Burckhard, Vedaa, Piepkorn and Reps. Laning, Lefor, M. Nelson) recommends that the **SENATE RECEDE** from the Senate amendments as printed on HJ pages 946-947, adopt amendments as follows, and place HB 1045 on the Seventh order:

That the Senate recede from its amendments as printed on pages 1233 and 1234 of the House Journal and pages 946 and 947 of the Senate Journal and that Engrossed House Bill No. 1045 be amended as follows:

Page 1, line 4, remove the second "and"

Page 1, line 13, after "corporation" insert "; and to provide an effective date"

Page 29, after line 21, insert:

"SECTION 19. EFFECTIVE DATE. Section 17 of this Act becomes effective on July 1, 2020."

Renumber accordingly

Engrossed HB 1045 was placed on the Seventh order of business on the calendar.

2019 TESTIMONY

HB 1045

MAKING SENSE OUT OF BLOCKCHAIN TECHNOLOGIES

HB1045 316/19 Att#1

WHAT IS BLOCKCHAIN?

Blockchain is a decentralized digital ledger (a continuously growing list of electronic records) of transactions kept over time and secured using **cryptography** (a kind of algorithmic code). Blockchain ledger data is distributed across a network of computers. Its users can directly interact with stored data in real-time without the need for an intermediary (a "middle-man" or distributor) to authenticate transactions. The technology provides an independent, tamper-resistant, and transparent platform for parties within the blockchain to securely store, transmit, and process sensitive information.

Blockchain Summary:

- Decentralized
- Peer-to-peer
- Tamper-resistant
- Synchronized through consensus
- Eliminates the need for a third-party verifier
- All transactions are visible to all parties involved in the specific blockchain

as a block.

SMART JARGON: UNDERSTANDING BLOCKCHAIN

- Blockchain: A shared digital ledger that provides a reliable means to record business transactions comprised of a sequence of linked data compartments (or "blocks") among a distributed network of members.
- Cryptography: Secure information and communication techniques, which is used in blockchain to send and/or store data so that only intended recipients can access the data.
- Hash: A type of cryptography—in blockchain, it is a coded string of letters and numbers that is permanently unique to each individual block in the chained sequence; also sometimes called the "digital fingerprint."
- Block: A sealed data compartment that contains 1) its own identifying block hash, 2) the hash from the previous block in the chain sequence, and 3) a set of time-stamped transactions.
- Blockchain Transaction: A member-verified data record that provides nearly immutable proof of business dealings-such as financial or contractual agreements.



OW BLOCKCHAIN WORKS

A blockchain is a record-keeping system where multiple sources validate an entry before it gets added to the chain of data. Once data has been added, it cannot be changed and the record is distributed to multiple places within the network. Adding a new record (known as a block) to the blockchain sequence requires verification by multiple members connected to the blockchain network. These blocks of data are all linked to one another forming the chain. All transactions are public to those in the blockchain, but all individual identities are hidden.

Blockchain technology uses an algorithm to assign a cryptographic hash (a unique string of letters and numbers–also sometimes called the "digital fingerprint") to each block. In addition to the hash, each block contains timestamped sets of prior transactions, plus the hash of the previous block–which is what creates the immutable link between sequential blocks in the chain.

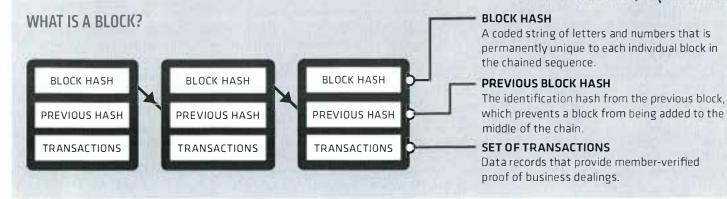
The combination of cryptography and timestamps allows blockchain technology to automatically verify that this progressive hash sequence never changes. This action restricts new blocks from being inserted out of order-thereby preventing transaction data from being altered or falsified after the fact.

A PAYMENT MOVEMENT B Image: Constraint of the point of the peer-to-peer Image: Constraint of the peer-to-peer Image: Co

transaction is approved.

network for verification.





EMERGING USE CASES

A wide variety of applications can use a blockchain transaction database. Existing barriers to wide acceptance of blockchain (e.g., culture, complexity, energy use), will likely be addressed over time. While blockchain's well-publicized roots come from currency and finance, it is already making an impact in many industries, including

- Supply Chain Management: When combined with properly validated business practices, blockchain provides an auditable method to document supply chains. For example, it has been used to ensure conflict-free diamonds,¹ protect against counterfeiting manufacturing in IoT,² and reliably track a product's materials and manufacturing from source to delivery to promote ethical practices.³
- Smart Contracts: Smart contracts offer speed, efficiency, and security by building the terms of the agreement into blockchain transactions. Within the blockchain application, all terms and conditions of a contract for goods or services can be efficiently listed, amended, and agreed upon without the need for physical documents and signatures or for using potentially insecure methods of communication. Smart contracts can also eliminate complex and expensive services of a third-party intermediary for major transactions—such as real estate purchases or new auto loans.
- Health/Medical Records: Blockchain has the potential to standardize secure electronic medical record sharing across providers in a less burdensome way than previous approaches.⁴ It offers the ability to create a decentralized record management system that reduces the need for another organization between the patient and the records to manage access. Blockchain-enabled healthcare applications offer potential benefits such as instantly verifying the authenticity of prescriptions or automatically identifying potential adverse drug interactions.
- Governmental Services: National identity management systems, taxes/internal revenue monitoring, voting, and land management are just a few examples in which a blockchain ecosystem could be leveraged by public authorities. The State of Illinois, for example, recently launched a birth registry and identification system trial.⁵ The African nation of Ghana has also enabled land registration based on blockchain technology.⁶

PROCESSING PERFORMANCE, EFFICIENCY & SECURITY

While the promises of blockchain are great, its algorithms can require significant amounts of compute performance and power from both central processing units (CPUs) and graphics processing units (GPUs)–both in terms of processing bandwidth and the energy consumed to perform operations. Therefore, implementing blockchain applications on a mass scale using current technologies is challenging.

To unleash the potential of blockchain, AMD is developing new processing solutions-designs that can simultaneously deliver more compute performance while consuming less energy. For instance, AMD brings the industry's first high-performance 7nm computing and graphics processors.⁷

THE POWER AND FREEDOM TO GO FURTHER

Blockchain's impact is rapidly expanding across a wide swath of industries and applications. While it is still at a formative stage, the technology's enormous potential shows substantial and unique value.

AMD is currently working with ecosystem partners to bring the transformative potential of blockchain to consumers, new markets, governments and others in a variety of applications.

FOR MORE INFORMATION, PLEASE VISIT WWW.AMD.COM/BLOCKCHAIN FOR MORE INFORMATION ON OUR PRODUCTS OR SERVICES, PLEASE VISIT WWW.AMD.COM

- 1 "The Diamond Industry Is Obsessed With the Blockchain," Fortune, September 12, 2017.
- 2 "Blockchain and the Internet of Things will be used to combat with the counterfeiting of brands." Bit News, August 24, 2018
- 3. "From Farm To Finished Garment: Blockchain Is Aiding This Fashion Collection With Transparency." Forbes, May 10, 2017.
- 4. "Exploring the Use of Blockchain for EHRs, Healthcare Big Data," Health IT Analytics, Feb 5, 2018
- 5. "Illinois Launches Blockchain Pilot to Digitize Birth Certificates," Coindesk, September 1, 2017

AMDZ

- 6. "Ghana Looks To IBM For Blockchain-Based Land Administration," ETHNews, July 11, 2018
- "AMD CTO: "We Went All In' On Zrim CPUs." CRN. August 23, 2018.

©2019 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, EPYC, Radeon and combinations thereof are trademarks of Advanced Micro Devices, Inc. January 2019. PID# 19202964-A

HB 1045 3/6/19 Att#2

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1045

Page 29, line 8, replace <u>"and"</u> with <u>"or"</u>