

Certainty of sender **and** integrity of document = digital signature

- 1.) keys are “**separated**”
- 2.) **bijective mapping**
- 3.) use necessarily **alternate**

YTDQHBG ⁺¹
 ZUERICH ⁻¹
 YTDQHBG

Trusted
Third Party

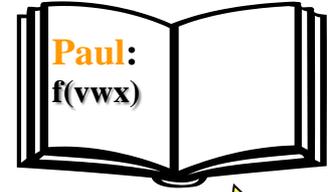
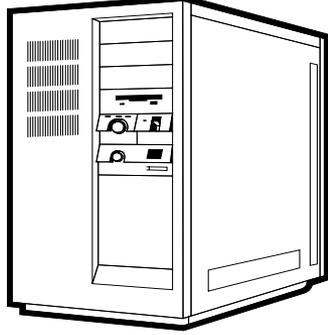
Register

Paul:

Public key:
f(vwx)

Private key:
f(678)

Requests keys
Keys assigned



Paul

“I buy immovable X for €...”
Paul

SIGNATURE

(Paul's) **private** key

“I buy immovable X for €...”
Paul

VERIFY SIGNAT.



Sarah

“I buy immovable X for €...”
Paul

VERIFY SIGNAT.

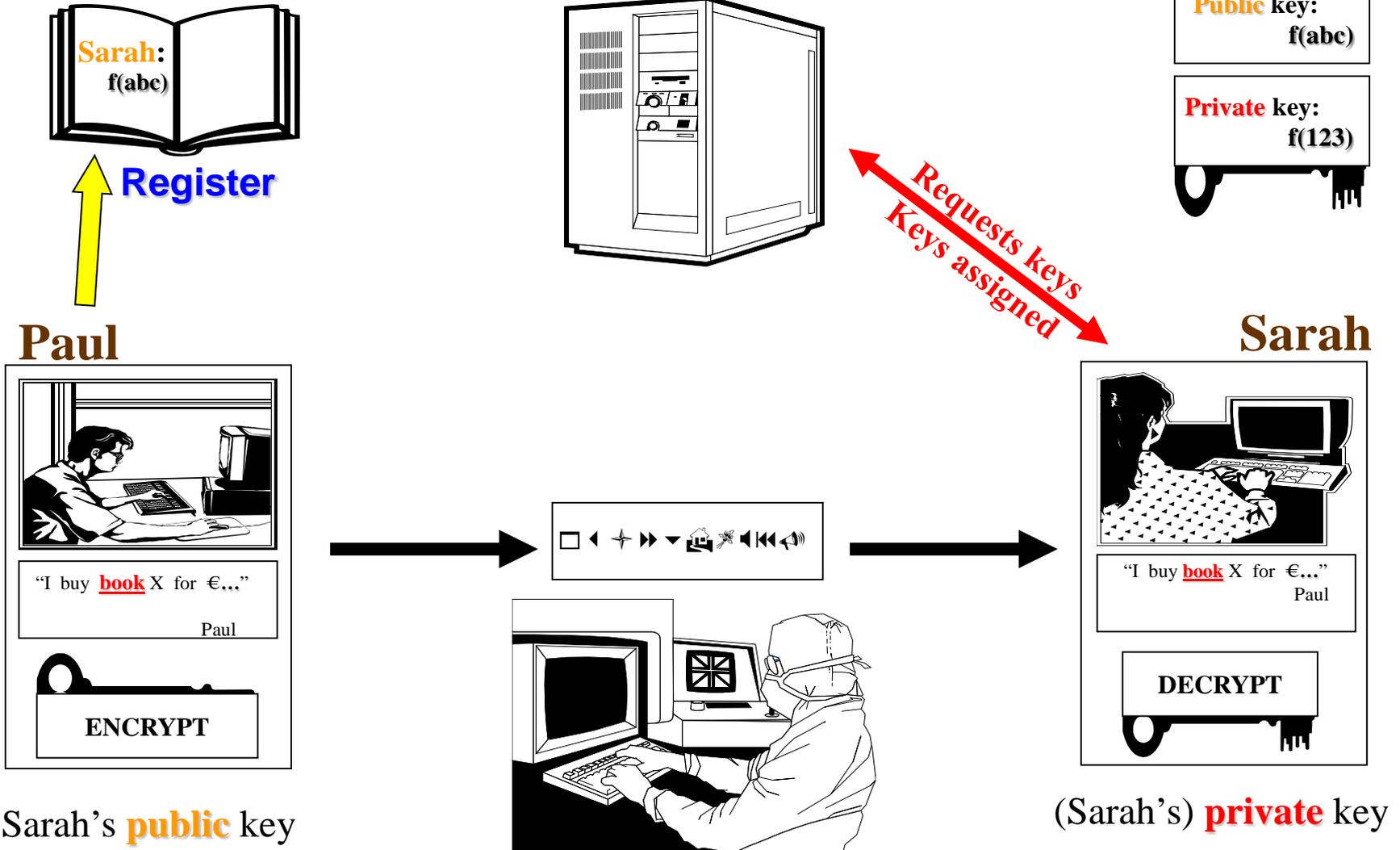
Paul's **public** key

N.B: Private key:
67890 \neq PIN

Certainty of recipient (= confidentiality of communications)

- 1.) keys are “**separated**”
- 2.) **bijective mapping**
- 3.) use necessarily **alternate**

Trusted Third Party



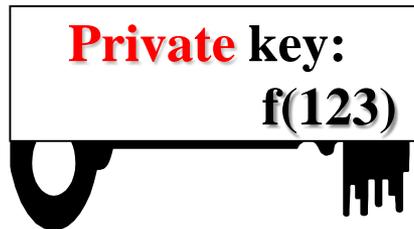
The manufacture of a five-pronged implement for digging results in a fork even if a manufacturer, unfamiliar with the English language, insists he intended to make, and has made, a spade.

Paul Smith

Sarah's **public** key



Register



Sarah's **private** key

The manufacture of a five-pronged implement for digging results in a fork even if a manufacturer, unfamiliar with the English language, insists he intended to make, and has made, a spade.

Paul Smith

Certainty of sender **and** confidentiality of communications

Trusted Third Party

Paul:

Public key:
f(vwx)

Private key:
f(678)

Sarah:

Public key:
f(abc)

Private key:
f(123)

Requests keys
Keys assigned

Requests keys
Keys assigned

Register

Sarah:
f(abc) Paul:
f(vwx)

Paul



"I purchase immovable X for CHF ..."
Paul

ENCRYPT

SIGNATURE

Sarah



"I purchase immovable X for CHF ..."
Paul

DECRYPT

VERIFY SIGNAT.

Sarah's **public** key
(Paul's) **private** key

(Sarah's) **private** key
Paul's **public** key



Paul

VERIFY SIGNAT.



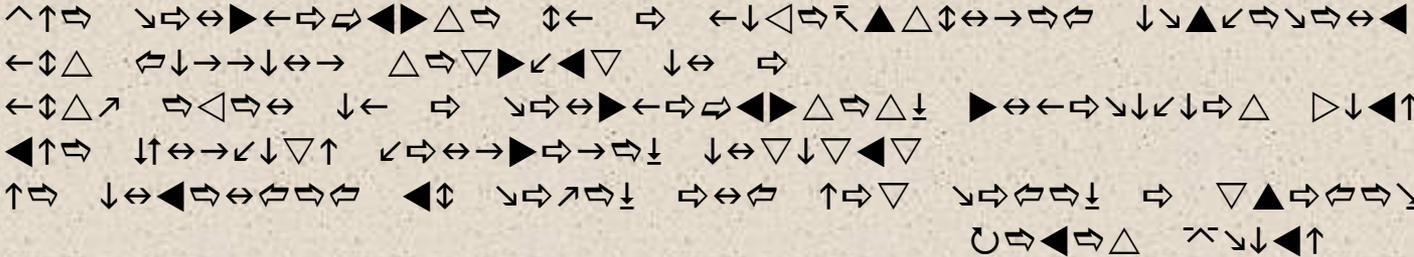
The manufacture of a five-pronged implement for digging results in a fork even if a manufacturer, unfamiliar with the English language, insists he intended to make, and has made, a spade.

Paul Smith

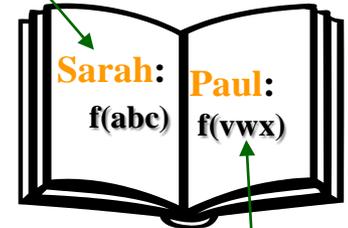
Private key:
f(678)

Paul's **private** key
Sarah's **public** key

Public key:
f(abc)



Register



Public key:
f(vwx)

Paul's **public** key
Sarah's **private** key

Private key:
f(123)

The manufacture of a five-pronged implement for digging results in a fork even if a manufacturer, unfamiliar with the English language, insists he intended to make, and has made, a spade.

Paul Smith

⇒ *Why asymmetric keys?*

- 1.) Sharing of keys between pairs of users does not guarantee the imputability of the messages (a user could send a document to themselves, attributing it to the other possessor of the key);
- 2.) Every pair of users must agree on the key to be used for the exchange of messages: each user must have a key with which to encrypt the messages to and from each different correspondent.

Digital signature

Art. 2702 CC – Effects of private writing

Subject to an action to establish falsity, a private writing constitutes full prove of the origin of the declaration set forth therein in the person who signed such writing, if the person against whom it is asserted recognizes the signature or if the signature is legally deemed to have been recognized.



Art. 21, § 2, Code of Digital Admin. – Probative force of **digitally signed documents**

A digital signature (or any other Qualified Electronic Signature) has the effects provided for in Art. 2702 Civil Code.



Art. 1316-3 Code Civil

An electronic-based writing has the **same probative value** as a paper-based writing.



Section 126, subsection 3, BGB (*German Civil Code*) - Written form

Written form may be **replaced by electronic form**, unless the statute leads to a different conclusion.



Standard trade terms



Art. 1341, paragraph 1, CC - *Standard trade terms*

Standard trade terms that have been drafted in advance by one of the parties are effective towards the other if, at the moment of entering into the contract, that party **was aware** of them or **should have been aware** of them using ordinary diligence.

Example 1: If a backpacker takes a train, and is not aware that a supplement to the normal fare is payable on that train, if he knew of or should have known by using ordinary diligence that the State Railways require a supplement to be paid for travel on such (fast) trains, the term that provides for the supplement is effective (= he is obliged to pay it).

Example 2: Bill leaves his car in a supermarket carpark. At the entrance it *clearly* states that the carpark management applies a penalty to car owners who leave the car in the carpark over night. In this case Bill can't refuse to pay the penalty on the basis that I failed to read the sign.

⇒ *What are the features of the provisions of article 1341, paragraph 1, CC?*

Contractual autonomy implies that each contract has legal effects only as desired by the parties. An essential element of every contract is a “**genuine**” **agreement** between the parties (cf Art. 1325 CC).

In this case it is assumed that certain contents of the contract that the party was not aware of at the moment of entering into the contract, form part of the contract ... **so long as they, in principle, could have been aware of them using ordinary diligence!**

N.B.:

In essence, it is assumed that certain contents form part of the contract even if one of the parties to it has **not** expressed his **will** about it.

In other words, the principle **ignorantia legis non excusat** (“ignorance of [the existence of] a rule of law is no excuse”), that usually applies to the law, also applies towards the party setting down the terms.



Example: Nobody can prevent the application of a statutory provision prohibiting to build less than three metres from his neighbour by claiming ignorance of it. Similarly, nobody can refuse to pay the fare supplement on the grounds that he ignored that a higher fare was payable on the type of train at issue.

Art. 1341, paragraph 1, CC therefore clearly advantages the party setting down the terms, inasmuch as he/she can assert his/her **standard trade terms** provided that they have been adequately publicised (= that is, they have been made recognisable).

Art. 1341, paragraph 2, CC - *Standard trade terms* [Stt]

In any case, terms that establish, for the party who drafted them in advance, limitations of liability, the power of withdrawing from the contract or of suspending its performance, or which impose time limits involving forfeitures on the other party, limitations on the power to raise defenses, restrictions on contractual freedom in relations with third parties, tacit extension or renewal of the contract, arbitration clauses, or derogations from the competence of courts, are ineffective unless specifically approved in writing.

Example: An envelope which John had sent by courier is lost. It had contained a new Rolex. Paul seeks €3.000 in compensation. The carrier objects John’s claim, stating that his standard trade terms limit his liability to €100.

Specific approval in writing of terms listed in Art. 1341, paragraph 2, CC

3. Salvo diverso accordo scritto tra le parti, la Banca ha facoltà di cedere a terzi i contratti conclusi con il Cliente. Salvo diverso accordo scritto tra le parti, il Cliente non può cedere a terzi i contratti conclusi con la Banca. Qualsiasi atto di disposizione del Cliente in merito non avrà alcun effetto per la Banca.

4. Cataloghi, offerte, pubblicità o altri documenti promozionali hanno valore puramente indicativo e, salvo diverso accordo scritto tra le parti, non possono considerarsi in alcun modo parti integranti e/o sostanziali dei contratti conclusi dal Cliente con la Banca, né derogare alle presenti Condizioni Generali.

5. La Banca si riserva la facoltà di anticipare la chiusura delle eventuali offerte promozionali relative ai propri prodotti e servizi naturalmente senza che ciò possa arrecare alcun pregiudizio al Cliente che abbia aderito all'offerta prima della revoca della stessa.

6. Salvo diverso accordo scritto, la Banca presta i propri servizi esclusivamente a soggetti residenti in Italia.

7. La mancata applicazione per uno o più periodi di liquidazione periodica delle spese o delle commissioni dovute in relazione ai servizi prestati dalla Banca non comporta rinuncia alle stesse da parte della Banca.

Art. 112 - Operazioni di Informazione

carico dello stesso Cliente, fatto salvo quanto diversamente indicato nelle condizioni che regolano i singoli servizi e/o prodotti.

3. La Banca è autorizzata a provvedere, anche mediante addebito in conto corrente, alla regolazione di quanto ad essa dovuto.

Art. 114 - Legge regolatrice, lingua utilizzata, Foro competente

1. Il presente Contratto, le operazioni eseguite ed i Contratti conclusi a mezzo del Servizio sono regolati dalla legge italiana, salvo accordi specifici. Tutte le comunicazioni tra la Banca ed il Cliente avvengono in lingua italiana.

2. Per ogni controversia che potesse sorgere in dipendenza del presente Servizio, il Cliente e la Banca convengono che il Foro elettivo per chiamare in giudizio la Banca sia esclusivamente quello di Milano, mentre quest'ultima potrà chiamare in giudizio il Cliente a propria insindacabile scelta sia dinanzi al Foro di Milano che dinanzi ad uno dei Fori competenti ai sensi degli artt. 18, 19 e 20 c.p.c. (Foro generale delle persone fisiche, Foro generale delle persone giuridiche e delle associazioni non riconosciute, Foro facoltativo per le cause relative a diritti di obbligazione).

3. La disposizione di cui al comma precedente non si applica qualora il Cliente rivesta la qualità di consumatore ai sensi Codice del Consumo.

Signature

Il sottoscritto Cliente dichiara di aver preso atto e di accettare specificamente, anche ai sensi e per gli effetti degli artt. 1341 e 1342 del Codice Civile, degli artt. 118 e 126-sexies del TUB, le seguenti clausole: **ai sensi dell'art. 1341, secondo comma Cod. Civ. dell'Art. 118 le seguenti clausole:**

Art. 5 comma 1 (estinzione del rapporto su richiesta di uno solo dei cointestatori); Art. 7 commi 2, 4 e 5 (nomina, revoca, modifica e cessazione dei poteri di rappresentanza); Art. 10 comma 3 (sostituzione nell'esecuzione dell'incarico); Art. 11 (diritto di compensazione ed operatività dei diritti di compensazione e di garanzia nei confronti dei cointestatori); Art. 12 (diritto di pegno e ritenzione, cessioni di crediti e garanzie); Art. 13 (spese e oneri fiscali); Art. 14 Clausola risolutiva espressa; Art. 15 (scelta dell'organismo di mediazione); Art. 16 (foro giudiziario competente); Art. 17 (nullità parziale - esercizio di diritti e prove); Art. 18 Varie; Art. 19 (convenzione di assegno e responsabilità della banca); Art. 20 (compensazione e pagamento di assegni); Art. 23 (versamento in conto di assegni ed effetti sull'estero e bonifici da eseguirsi all'estero); Art. 25, comma 2 (non opposizione della clausola effettivo); Art. 26 Sconfinamenti in assenza di fido; Art. 27 Commissione di istruttoria veloce (eventi straordinari che comportano l'applicazione di commissioni a favore della Banca); Art. 28 commi 3, 4, e 5 (Modifica Unilaterale delle condizioni); Art. 30 (capitalizzazione degli interessi ed oneri); Art. 31 comma 4 (Condizioni approvazione dell'estratto conto); Art. 32 (Conto non movimentato); Art. 33 (recesso dal contratto di conto corrente e/o dalla convenzione d'assegno); Art. 34 (recesso della banca); Art. 35 (effetti del recesso); Art. 36 Esecuzione di operazioni tramite altri intermediari abilitati; Art. 39 (utilizzo delle somme accantonate); Art. 40 (estinzione del conto corrente); Art. 42 comma 6 (Spese per recupero dei fondi); Art. 43 comma 2 (Spese per la comunicazione di rifiuto obiettivamente giustificato); Art. 44 (operazioni di pagamento non autorizzate, non eseguite o eseguite in modo inesatto); Art. 45 commi da 1 a 4 e 6 (Modifica unilaterale delle condizioni contrattuali); Art. 47 (recesso dai servizi di pagamento); Art. 53 comma 1 (spese per la revoca di un ordine di bonifico effettuata oltre i termini); Art. 57 (domiciliazione e addebito di RID); Art. 58 comma 3, 4 e 5 (spese per la revoca di un singolo ordine di pagamento RID effettuata oltre i termini - Esclusione della facoltà di revoca nel caso in cui la Banca sia creditrice del relativo importo - rinuncia alla facoltà di revoca di un singolo ordine di pagamento RID); Art. 61 comma 3 (rinuncia al diritto di rimborso concordata con il creditore); Art. 63 comma 1 (spese per la revoca di un ordine di pagamento di RIBA, MAV, RAV, Bollettino Freccia effettuato oltre i termini); Art. 71 Operazioni di pagamento di pedaggi autostradali- FastPay; Art. 72 Servizio SMS Alert; Art. 73 Erogazione dei Servizi Bancomat/PagoBancomat; Art. 74 Rapporti con Esercenti Convenzionati; Art. 76 Condizioni economiche e autorizzazione all'addebito in Conto; Art. 80 Comunicazioni periodiche e condizioni contrattuali vigenti; Art. 81 Modifica unilaterale delle condizioni contrattuali; Art. 83 Recesso della Banca; Art. 85. Risoluzione del Contratto; Art. 86 Facoltà della Banca di bloccare la Carta; Art. 87 comma 4 (opponibilità della denuncia di smarrimento o di sottrazione); Art. 88 Responsabilità del Titolare per l'utilizzo non autorizzato della Carta; Art. 89 Operazioni non autorizzate o eseguite in modo inesatto; Art. 90 Rimborso a seguito di operazioni non autorizzate; Art. 91 Mancata o inesatta esecuzione di un'operazione; Art. 93 Solidarietà e indivisibilità delle obbligazioni assunte ed imputazione dei pagamenti; Art. 94 Reclami e risoluzione stragiudiziale delle controversie; Art. 95 Legge applicabile, interpretazione a favore del Consumatore e Foro competente; Art. 98 Ambito di applicazione; Art. 99 Conclusione ed efficacia del contratto; Art. 100 Oggetto del servizio; Art. 101 Utilizzo del Servizio in modalità Internet Banking; Art. 102 Disponibilità del Servizio; Art. 104 Rischi; Art. 105 Limiti operativi; Art. 107 Customer Service; Art. 108 Mobile banking e Phone Banking; Art. 109 Esecuzione degli ordini e comunicazioni - Elezione speciale di domicilio; Art. 110 Applicazione delle condizioni economiche e modifiche unilaterali; Art. 111 Nuovi Servizi e Varie; Art. 112 Operazioni di informazioni; Art. 113 Spese a carico del cliente; Art. 114 Legge regolatrice e lingua utilizzata - Foro competente.

S
P
P
e
r
c
i
f
i
c
a
n
p
-
w
r
i
n
g

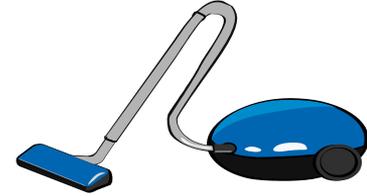
Signature

⇒ *Did the system of protecting the other party laid down by the law work?*

⇒ *Why not?*

Let's consider a **vacuum cleaner**. Imagine that, at the moment when the **vacuum cleaner** is sold, you sign a term which says that, should there be a fault in the machine, the purchaser undertakes to take it back to the nearest authorised centre. Repair is **free**.

In this way, the producer clearly makes the purchaser responsible for a cost (transporting the **vacuum cleaner** to the retailer) which would otherwise fall to the seller, since a fault in the **vacuum cleaner** represents breach of contract.



The prospective purchaser has the following choice:

1. - sign the contract without reading the *stt* set down by the other party;
2. - read and assess the *stt* and possibly seek a change.

⇒ *Which of the two is the economically rational choice?*

1. In terms of **opportunity cost (OC)**, then, assuming that the time needed to take the vacuum cleaner to the nearest retailer is 15 minutes:

$$1\text{h} = 28 \text{ CHF}$$

$$15 \text{ min.} = 7 \text{ CHF} \quad \text{OC} \approx 7 \text{ €} \quad [\text{includes cost of transport by car}]$$

The probability that a **vacuum cleaner** is faulty is: $P(x) = 1:100$

If the **vacuum cleaner** is bought without the *stt* being read, the value of the **opp. cost** is: $E(\text{OC}) = \text{OC} \times P(x) = 7 \text{ CHF} \times 1/100 = \mathbf{0.07 \text{ CHF}}$

2.

Suppose that the potential purchaser reads the term and then succeeds in being relieved by the retailer of the obligation to return the faulty **vacuum cleaner** to the point of sale. Reading *all* the standard trade terms, and then negotiating, requires the “investment” of 15 minutes by the potential purchaser.

$$1\text{h} = 28\text{ CHF}$$

$$15\text{ min.} = 7\text{ CHF} \quad \text{OC} = 7\text{ CHF}$$

Since it is an expense that the potential purchaser always has to bear: $P(x) = 1$

The **opportunity cost**, in this second hypothesis, is always: $E(\text{OC}) = \text{OC} \times P(x) = \text{OC}$

$$E(\text{OC}) = 0.07\text{ CHF} \quad \Leftrightarrow \quad \text{E}(\text{OC}) = 7\text{ CHF}$$

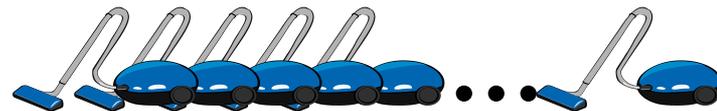
Agreeing to a contract drafted in advance by others without even reading it is, therefore, **economically rational**.

Consider the situation of *the party drafting the terms in advance*.

Supposing that the the party setting down the terms also needs 15 minutes to take back a faulty **vacuum cleaner**, an **opportunity cost** $\text{OC} = 7\text{ CHF}$ is involved for every faulty **vacuum cleaner**.

This is a cost that the party setting down the terms passes on to the consumer, introducing some *stt* that burden the consumer with the transport costs. The overall “saving” (**OS**) can be considerable.

If, hypothetically, 20,000 vacuum cleaners are sold, then:



$$\text{OS} = \text{OC} \times Q \times P(x) = 7\text{ CHF} \times 20.000 \times 1/100 = 1400\text{ CHF}$$



⇒ Why does the law (Artt. 1341 and 1342 CC) favour the party setting down the standard trade terms, who is nearly always a business person?

⇒ Is the law perhaps biased?

The system laid down by the law didn't work because it's based on the unrealistic assumption, that the other party **actually** reads the **stt** drafted in advance.

In fact, in Art. 1341, paragraph 2, CC, the regulations on standard trade terms provide for only one **formal** check, **not** of the content of the contract (**substantial** check):

ie, if there is the **double signature**, the contract is valid in any case!

⇒ Why doesn't the vacuum cleaner manufacturer offer more favourable **stt** with the objective of gaining a larger market share?

N.B.:

Essentially, the party setting down the terms takes advantage of a market failure inherent in the unilateral contract provisions to the exclusive advantage of that party. This is contrary to the notion of **good faith**.

→ **objective good faith**

Directive on unfair terms



Art. 33 ff Consumer Code give effect in Italy to EU Directive 93/13 on **unfair terms**.

EU-Directive 93/13 on **unfair terms** provides for a court scrutiny of the terms which is **not** (solely) **formal**, but extends to the «balance» of rights and duties laid down in the term (**substantial** check):

→ The same regulations exist, with some variations, in **all European Union** countries!



In the UK: *Unfair Terms in Consumer Contracts Regulation 1999*