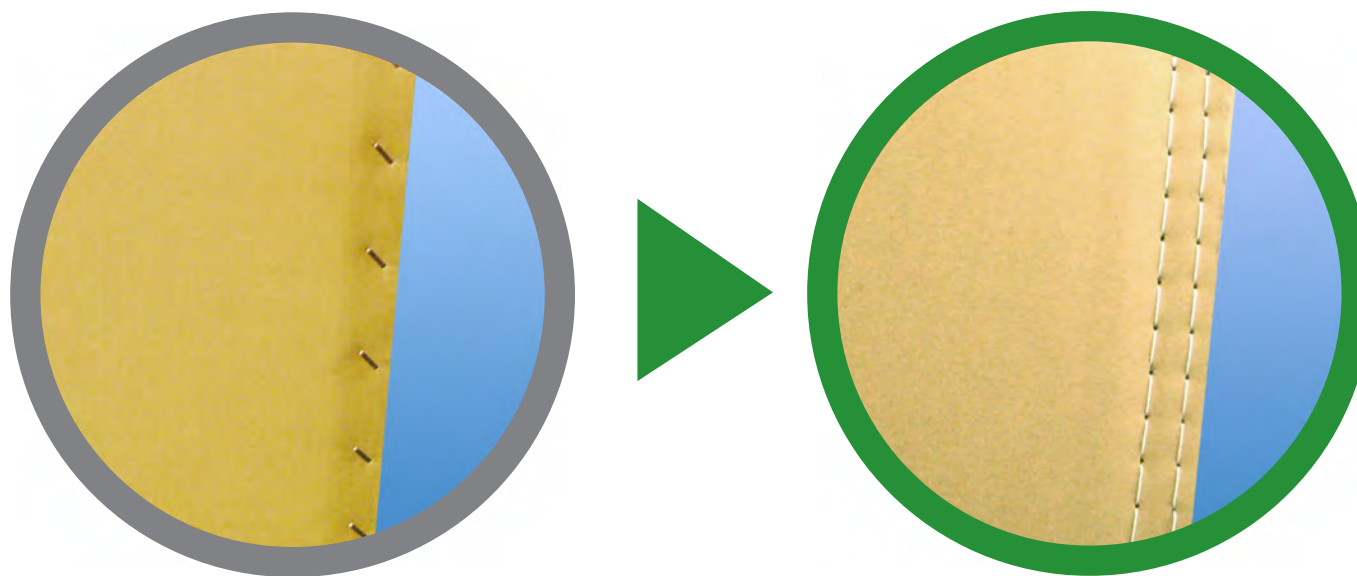
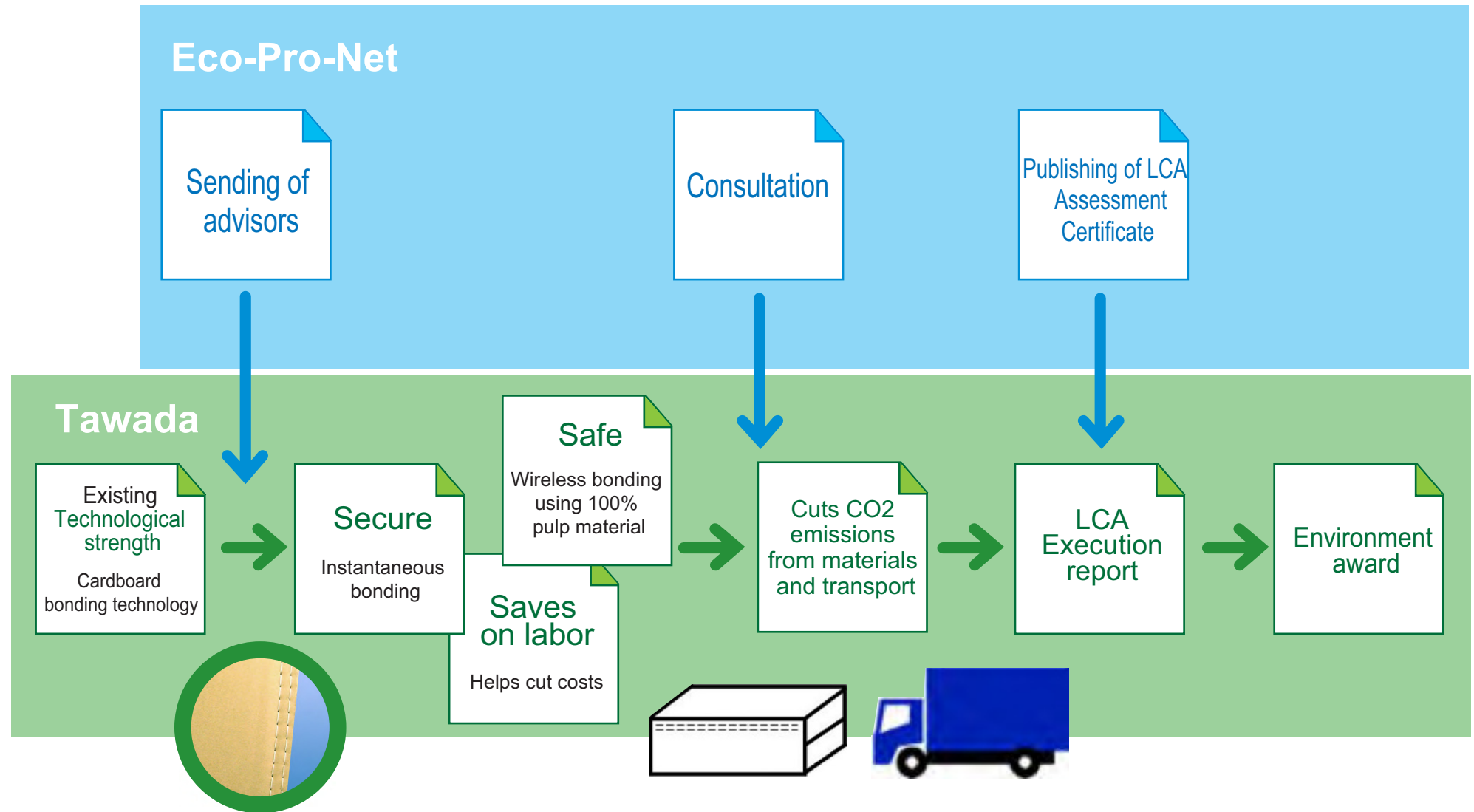


Eco Stitcher : From wire to thread



Tawada Co., Ltd.: LCA(Life cycle assessment) Process



Eco-Pro-Net

Tawada

Existing **Technological strength**
Cardboard bonding technology

ECO  **Stitcher**
エコステッチャー



Eco Stitcher: Cardboard bonding machine

Sending of
advisors

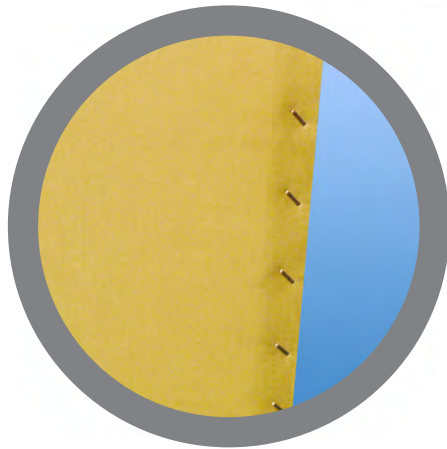
Development goal

Secure

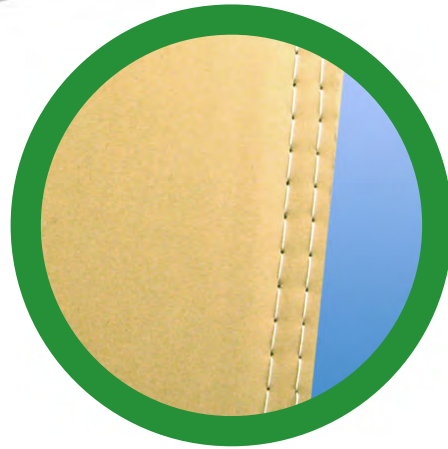
Safe

**Saves
on labor**

ECO Stitcher.
エコステッチャー



Cardboard case using wire



Cardboard case stitched using rayon thread.

From wire to thread

Secure

Immediate connection using thread made from pulp

Safe

Wireless
Cardboard case made from 100% pulp material

Saves on labor

Reduced costs

CO2 reduction
Three proposals by Tawada



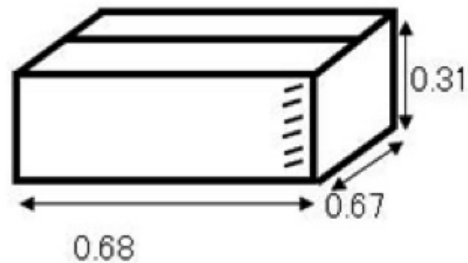
Reduction of cardboard materials

Efficiency improvement of cardboard transportation

From wire to thread

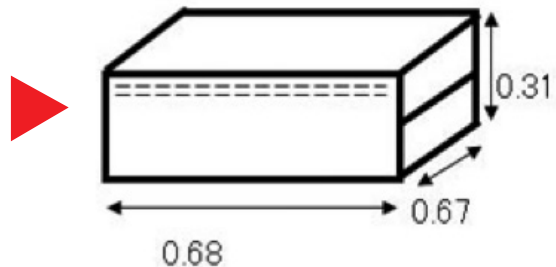
● CO2 reduction from the aspect of materials

Case: 0.68 meters (L) x 0.67 meters (W) x 0.31 meters (H)



Top-Loading Method

CO2 Emissions Amount
11.7g



Side-Loading Method

CO2 Emissions Amount
10.27g

Top-Loading Method

Side-Loading Method

11.7g - **10.27g** = **1.43g** per case can be achieved

A reduction of

● CO2 reduction from the aspect of transportation and materials

Size of cardboard sheet is reduced ► Becomes possible to load more sheets during transportation ► Improved loading efficiency will lead to a reduction in CO2

Top-Loading Method

Amount equivalent to three 4-ton trucks



Side-Loading Method

Amount equivalent to Two 4-ton trucks



Including materials and transportation, how much is the amount of CO2 emissions reduced by changing specifications for cardboard?

► a reduction of **4.9g** per case can be achieved

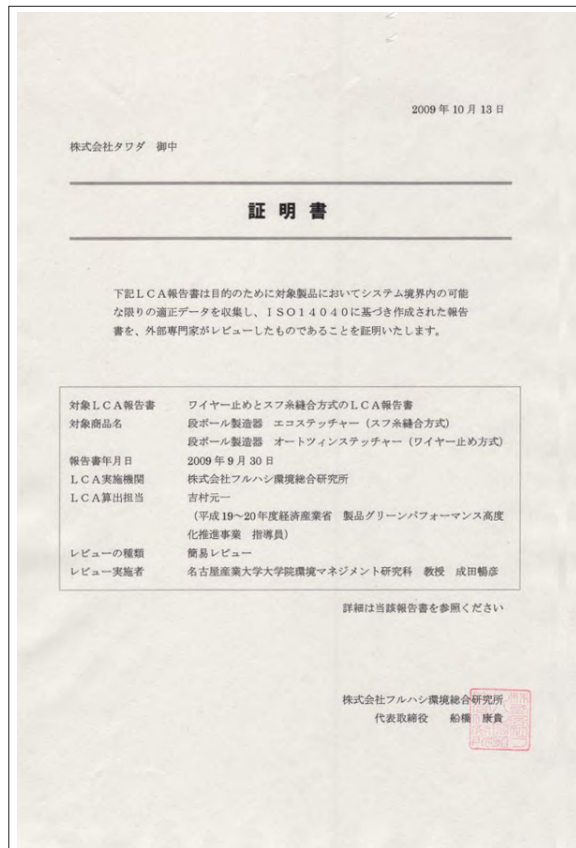
Size of cardboard sheet is reduced ► Becomes possible to load more sheets during transportation ► Reduction in CO2

For example, when performing calculation based on the transportation of 3,400 cases

Case Specifications	No. of Sheets	No. of Transportation Operations	Weight	CO2 Emissions Amount
Top-Loading Method	1,140	Transportation performed 3 times	0.0651 tons (total of 3 times)	19.1 g /1 case CO2 emissions
Side-Loading Method	1,742	Transportation performed 2 times	0.0484 tons (total of 3 times)	14.2 g /1 case CO2 emissions

● Publishing of LCA Assessment Certificate

Eco-Pro-Net



● Environment award

Aichi Environment award 2010

