

MULTIMEDIA ONLINE TEACHING CASE

Managing Risk to Global Supply Chains COVID-19 CRISIS

TEACHING NOTE

MARCH 2020

This Teaching Note was written by Ed Weenk MSc PDEng,
as an aid to lecturers using the case "The Fresh Connection – Risk Management".
It links to the cloud-based environment of The Fresh Connection business simulation game,
as well as the accompanying book "Mastering the Supply Chain".



The Fresh Connection

THE ULTIMATE VALUE CHAIN EXPERIENCE

Teaching Note “The Fresh Connection – Risk Management”¹

Case synopsis

In the middle of the COVID-19 crisis (“Corona virus”), Toni Rainbow, CEO of medium-sized fruit juice producer The Fresh Connection, is faced with a few big challenges. After being hired by Group President Bob McLaren three years before, the company has recently celebrated the return to positive ROI, the mission Toni Rainbow was initially hired for.

But now due to COVID-19, things have suddenly changed and Bob McLaren is once more pushing for answers and for action in order to get the company through the Corona virus situation in good shape.

In two WhatsApp messages and an email, Group President Bob McLaren confronts Toni with several very important requests. The first two are focused on urgent actions for the short term, the third one looks beyond the specific Corona Virus and aims at a medium to long term response.

Time is running and Bob McLaren is waiting for answers...

Teaching objectives

The case can be used in specialized Operations & Supply Chain Management programs but is also very well suited for more Generalist and business-oriented programs (Economics, Business Administration). Given the open character of the case, its discussion and depth level can be adapted to use in Bachelor level, up to use in Post-Graduate and Executive Education (MBA, EMBA).

The case fits well with generic courses in Strategy or introductory courses on Operations or Supply Chain courses, but can also be used in specific Risk Management (elective) courses, or even as the central case in specific Risk Management workshops or seminars.

The case has a number of objectives:

1. Have students learn and practice how to analyze a specific company’s Supply Chain on the basis of a so-called flowchart (“mapping”), thus creating insight in the structure of the flows, as well as the dimensions and potential issues in the starting situation.
2. Have students learn and practice how to deal with a new and unknown company situation based on a large amount of data from a company database.

¹ This Teaching Note was written by Ed Weenk MSc PDEng, as an aid to lecturers using the case “The Fresh Connection – Risk Management”. It links to the cloud-based environment of The Fresh Connection business simulation game, as well as the accompanying book “Mastering the Supply Chain”.

3. Have students learn and practice how to analyze the potential impact of sudden short-term supply risks and develop potential mitigations.
4. Have students learn and practice how to analyze the potential impact of sudden short-term changes in demand, taking into account that there is uncertainty about these demand changes in terms of size of the fluctuations, as well as the duration of the changes. This all leads to additional uncertainty and may ultimately even impact supply.
5. Have students learn and practice how to develop potential mitigations in order to deal with such increased demand uncertainty.
6. Have students learn and practice how to think about (Supply Chain) risks from a broader and medium to long term perspective. Have students learn and practice how to develop potential mitigations for such medium to long term risks.

Suggested assignment questions

1. What does the current supply chain look like and what do you know about the setup, flows, volumes, etc.? Take a look at the introduction video about TFC to learn about the structure and content of the screens of the tool. Then access TFC's interface and focus on the tabs of the Management Board team members: Purchasing, Operations, Supply Chain and Sales. Take a detailed look at each of the reports per functional area (links at the bottom left hand side of the screens). Try to get a comprehensive view of the as-is situation: customers, production and warehousing, inventory levels, suppliers. You may want to use the map of Figure 3 from the case text as a starting point for your analysis and use specific data from the system to "populate" the map.
2. Formulate an answer for Bob McLaren, addressing his first two messages of the day, which were focused on the potential short-term urgent issues due to the Corona virus outbreak. What would you suggest as an approach and why? Prepare a convincing argument for your proposal.
3. Using the templates from Exhibits 1-3, prepare a comprehensive Risk Assessment with clear actions planned for dealing with the Top-5 identified risks:
 - Beyond the context of Covid-19, identify risks that TFC is facing and map them on the framework for vulnerability (as shown in Exhibit 1 of the case text).
 - "Plot" the identified risks on the probability-detectability-impact chart, or alternatively, calculate the "risk factor" (probability x detectability x impact, using a scale from 1-5 for each dimension, low = 1; high = 5). See Exhibit 2 of the case.

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- For your Top-5 risks, use the template from Exhibit 3 of the case and define relevant actions in order to best deal with the risks.
- Using the template from Exhibit 4 of the case, what would the timeline of Risk Management projects look like?

General teaching recommendations

Case discussion delivery: remote and in-class

The case is well-suited for an online class and the description of the case discussion in this Teaching Note is therefore based on teaching remotely. It is also possible to use the case in a face-to-face class after small adjustments to the sequence and activities as described in the Teaching Note.

Depending on the specific program and course in which the case is used, as well as the experience level of the participants with online learning, the case discussion can take place in one session or over a sequence of shorter sessions.

Team or individual case elaboration

The case is presented from the perspective of Toni Rainbow, the CEO of The Fresh Connection. In principle, the case can therefore be elaborated by individual students without any problem. In that case, students will bring their individual findings and recommendations to the discussion.

However, forming teams of 4-5 students can add an additional dimension to the discussion. In the case of teams of 4 students, each student can focus on a particular functional role in the management team (Sales, Purchasing, Operations, Supply Chain Management). In the role play that would mean that Toni Rainbow would have delegated the actual analysis to his fellow Management Team members.

In the case of teams of 5 students, the fifth one can in fact take Toni Rainbow's role and make sure that he mobilizes his Management Team so that Group President Bob McLaren will get the answers he's looking for.

Access to TFC's online environment

The first part of the analysis is about getting to know in much detail the Supply Chain of The Fresh Connection. In order to be able to carry out the analysis, students will need access to the online environment of the simulation game in which they can find detailed data and reports about the company, its products, operations, customers and suppliers. In the case document there is an Annex describing the procedure for registration and access to the simulation environment. In the suggested assignment questions explicit reference is made to accessing the simulation environment.

“Watch only” access vs interactive teaching case

Please note, that access to the simulation for this case is “*watch only*”. This means that students can see all screens, and all look at all of the available data in the system, which is sufficient to develop the case. However, no parameters should be changed, because for this case’s purpose the game cannot be played actively².

Please note that more information about the use of The Fresh Connection business simulation game as an interactive teaching case can be found in the Annex of this Teaching Note.

Case analysis and suggested teaching plan

The central issue of the case consists of two questions related to the short term and one question related to the medium to long term. In order to be able to develop solutions for each of those three questions, a basic analysis of the company’s current situation will need to be carried out. In the teaching plan, each of these elements (basic analysis, three questions) will be dealt with separately, in a logical sequence.

Depending on the specific course setup, e.g. one long session vs several shorter sessions, the course instructor can decide how to spread the different blocks over the different sessions.

Accordingly, all assignment questions can be introduced simultaneously or in a sequence, publishing the next question as soon as discussion of the previous one has finished. From a logical point of view, Blocks 2 and 3 are easiest to combine into one, since both focus on the short term.

Debriefs / discussions can be led by the instructor based on the uploaded inputs from students or teams. Alternatively, students or teams can be asked to present their findings.

A teaching plan based on *synchronous* debrief sessions, e.g. through platforms like Skype, Zoom, Canvas Conferences, etc., could look as follows:

Block	Activity	Time estimation
Block 1: AS-IS situation of the Supply Chain	Analysis at home (individual or team) <i>Optional: upload of findings</i>	60-90 mins
	Debrief: observations per stage in the Supply Chain	30-45 min

² Technically speaking, students can in fact change parameters on the screens, but the game version connected to this case is not prepared for calculation. Please check out the Annexes of this TN to see the options for versions allowing calculation.

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Block 2: Short term supply risk	Analysis at home (individual or team) <i>Optional: upload of findings</i>	30-45 mins
	Debrief: short term supply risks & mitigations	30-45 mins
Block 3: Short term demand changes	Analysis at home (individual or team) <i>Optional: upload of findings</i>	30-45 mins
	Debrief: short term demand changes & mitigations	30-45 mins
Block 4: Medium to long term Risk Management	Analysis at home (individual or team) <i>Optional: upload of findings</i>	60-90 mins
	Debrief: medium to long term risks & mitigations	45-60 mins

An alternative, in *asynchronous* mode, would be to launch assignment questions via a Discussion Forum and facilitate the discussion there, asking students to build on each other's comments. This would not affect the sequence of the abovementioned course plan, however would favor individual preparation rather than team preparation (unless students would appoint a team representative who would be asked to discuss on behalf of the team, something which would most likely increase the risk of having so-called 'free riders'). Asking students to upload elaborated answers in PowerPoint or Word would be less compatible.

The advantage of the asynchronous alternative and due to its slower speed, is the possibility to clearly steer a discussion while it develops, through active discussion moderation / dynamization by the lecturer, raising follow-up questions, challenging students in specific directions, etc. Depending on the course structure and length, the timeslot available per question can be defined (shorter/ longer).

The asynchronous teaching plan could look as follows:

Block	Activity	Time estimation
Block 1: AS-IS situation of the Supply Chain	Analysis at home (individual or team) Discussion Forum: observations per stage in the SC	60-90 mins
Block 2: Short term supply risk	Analysis at home (individual or team)	

	Discussion Forum: short term supply risks & mitigations	30-45 mins
Block 3: Short term demand changes	Analysis at home (individual or team) Discussion Forum: short term demand changes & mitigations	30-45 mins 30-45 mins
Block 4: Medium to long term Risk Management	Analysis at home (individual or team) Discussion Forum: medium to long term risks & mitigations	60-90 mins

Block 1: AS-IS – basic analysis of the Supply Chain of The Fresh Connection

The first block of discussion refers to suggested assignment question 1. Execution of the exercise is straightforward (an example of an elaboration can be found in Exhibit 1 of this TN):

- As indicated in assignment question 1, students can use the map as depicted in Figure 3 of the case text as a starting point and then go into the company system to check out the reports per each of the 4 functional roles. They can “populate” the map with data from the system, leading to increased understanding of the current situation the company is in. *PLEASE NOTE THAT DATA IN THE SYSTEM’S REPORTS REPRESENTS THE SITUATION OF A 6-MONTH’S PERIOD.*
- The main task here could be to have students report on their findings, for example by starting at the downstream end of the supply chain and working your way upstream:
 - **SALES and CUSTOMERS** (mainly based on reports in the function of Sales): starting at the customer end, what do we know about our customers? Who are they? Which of our products are they buying? How much revenue corresponds to each customer? How much margin corresponds to each customer? Etc.
 - **OUTBOUND WAREHOUSE** (mainly based on reports in the functions of Operations and Supply Chain Management): what do we know about the outbound warehouse in terms of size and capacity utilization? What do we know about inventory levels per each of the products? What do we know about product availability? Etc.
 - **PRODUCTION** (mainly based on reports in the function of Operations): what kind of machinery do we have and what has capacity utilization and production plan adherence been like? Etc.

- **INBOUND WAREHOUSE** (mainly based on reports in the functions of Operations and Supply Chain Management): what do we know about the inbound warehouse in terms of size and capacity utilization? What do we know about inventory levels per each of the components? What do we know about component availability? Etc.
- **SUPPLIERS** (mainly based on reports in the function of Purchasing): finishing at the supplier end, what do we know about our suppliers? Who are they and where are they located? Which of our components are they supplying? How much purchasing budget corresponds to each of them, how much transportation budget? What has their delivery performance been? Etc.
- In a remote teaching setting, students / teams can be asked to upload a PowerPoint consisting e.g. of 6 slides with their analysis and findings. These PowerPoints can be graded, if desired, and/or be used by the lecturer as preparation for the debrief discussion:
 - Slide 1: map based on case Figure 3
 - Slides 2-6: main observations per each of the stages in the supply chain
- The main objective of this exercise is to practice the technique of supply chain mapping and to practice getting a grip on a relatively large amount of unknown data, thus creating clarity on the AS-IS of a situation new to the student. Since the company is in relatively good shape, with a positive ROI, this basic analysis is mainly aimed at understanding the AS-IS. It doesn't necessarily have to lead to a list of improvement items for the existing supply chain, although if desired, the lecturer could also push in this direction.

Block 2: Short-term issue → Supply risk

Block 2 of the discussion is focused on the issue raised by Bob McLaren in his first WhatsApp message: *potential short-term supply issues (case Figure 1)*. It is suggested to not steer students too much in their elaborations. If the lecturer decides to lead the debrief, rather than ask students / teams to present their findings, then the most logical sequence would be to look at the components & suppliers one by one: Orange, Mango, Vitamin C, Pack cartons and PET bottles.

Risk assessment and potential mitigations are influenced by e.g.:

Supplier related aspects

- Importance of the component in terms of money spent

- Importance of the component in terms of the (revenue of the) final products it's part of
- Size of the supplier versus The Fresh Connection³
- Location of the supplier
- Lead time of deliveries from the supplier

Aspects of implementation and feasibility

- Assessment of time and budget required to achieve the change
- Feasibility aspects due to the specific context and general unrest amidst the Corona-crisis
- ...

In a debrief, first focus on assessing perceived risks per component, then assess potential prioritization and then elaborate on potential mitigations.

An example of a table to be used can be found in Exhibit 2 of this TN.

Block 3: Short-term issue → Demand changes

Block 3 is focused on the issue raised by Bob McLaren in his second WhatsApp message: *potential short-term demand changes (case Figure 2)*. Although not explicitly mentioned, it clearly refers to the well-known 'bullwhip' effect. It is suggested to not steer students too much in their elaborations.

A specific characteristic of the demand change issue is that it's based on secondary information from a sister-company, i.e. the real problem hasn't manifested itself yet to The Fresh Connection. This potentially opens the door for additional pro-active responses towards the customers.

If the lecturer decides to lead the debrief, rather than ask students / teams to present their findings, then the most logical sequence would be to develop some scenarios, along different dimensions, such as one customer vs all customers, expected amount of increase per customer and overall, etc.

Risk assessment and potential mitigations are influenced by e.g.:

- Customer importance in terms of sales revenue and sales volume
- Customer size (e.g. indicated by their market share)
- Potential impact on production and storage vs. AS-IS
- Degree of uncertainty around demand change

³ Please note that in the company screens, under the Purchasing tab, you can find out more information about specific suppliers by clicking on the ⓘ-symbol next to the name of the supplier. A little supplier fact sheet opens. One of the facts mentioned is the free production capacity of the supplier with and without TFC, thus allowing to assess the size of TFC as customer of the supplier. A little customer fact sheet can be found under the Sales tab, ⓘ-symbol next to the word "Info" under the name of the customer.

- Degree of uncertainty around duration of the demand change
- Assessment of short-term impact
- Assessment of “the day after”, if and when demand would get back to its original again

Aspects of implementation and feasibility

- Assessment of time and budget required to achieve the changes
- Feasibility aspects due to the specific context and general unrest amidst the Corona-crisis
- ...

In the debrief, first focus on the different scenarios for demand increase, then specific attention for assessing the degree of uncertainty and the flexibility of the different mitigation options (what to do if and when the situation normalizes again). If desired, the debrief can be complemented with an explanation about the ‘bullwhip’ effect.

An example of a table to be used can be found in Exhibit 3 of this TN.

Block 4: Medium to long term Risk Management approach

Block 4 of discussion focuses on the email from Bob McLaren (Figure 4 from the case text). In this case, the issue raised is much more about the medium to long term, i.e. no longer only connected to the COVID-19 outbreak, but open to any perceived risk.

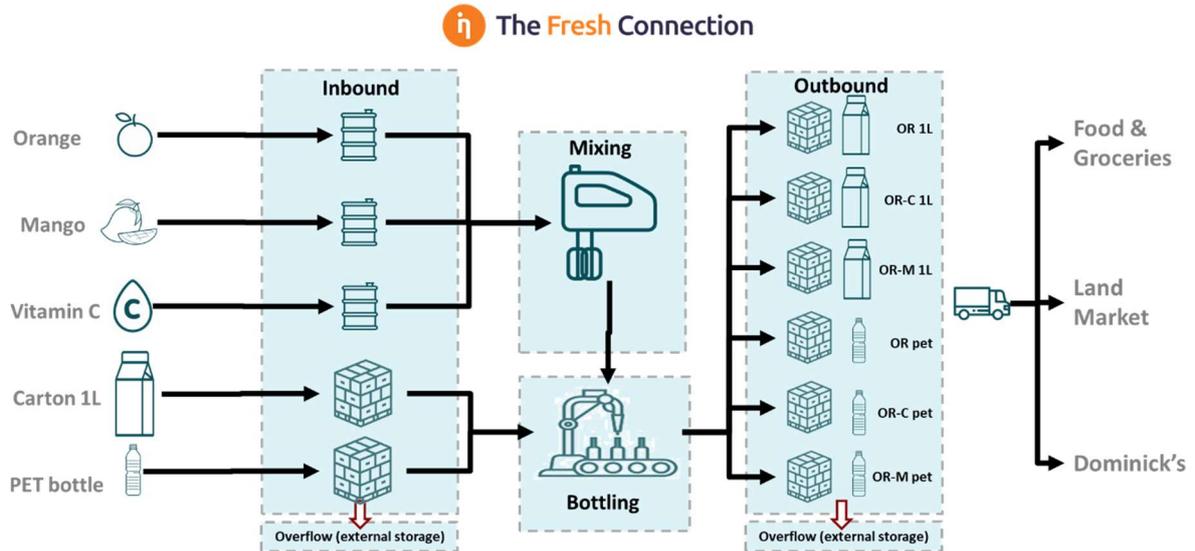
Students are encouraged to use the templates as depicted in Exhibits 1-3 of the case document.

Elements of the discussion can be similar as the ones mentioned in the bullet points of Blocks 2 and 3, however now placed in the wider context of risks, not only the specific Corona-related supply and demand issues.

An example of risks to be placed in the vulnerability matrix can be found in Exhibit 4 of this TN. The other 3 templates for Block 4 are more straightforward and can be found in the case text.

Exhibit 1: Example of elaboration of the AS-IS Supply Chain flowchart (“mapping”)

Empty template from Figure 3 of the case text:



Examples of data from the company database to “populate” the map with (please note that the numbers in the image below can be different to the TFC version you use):

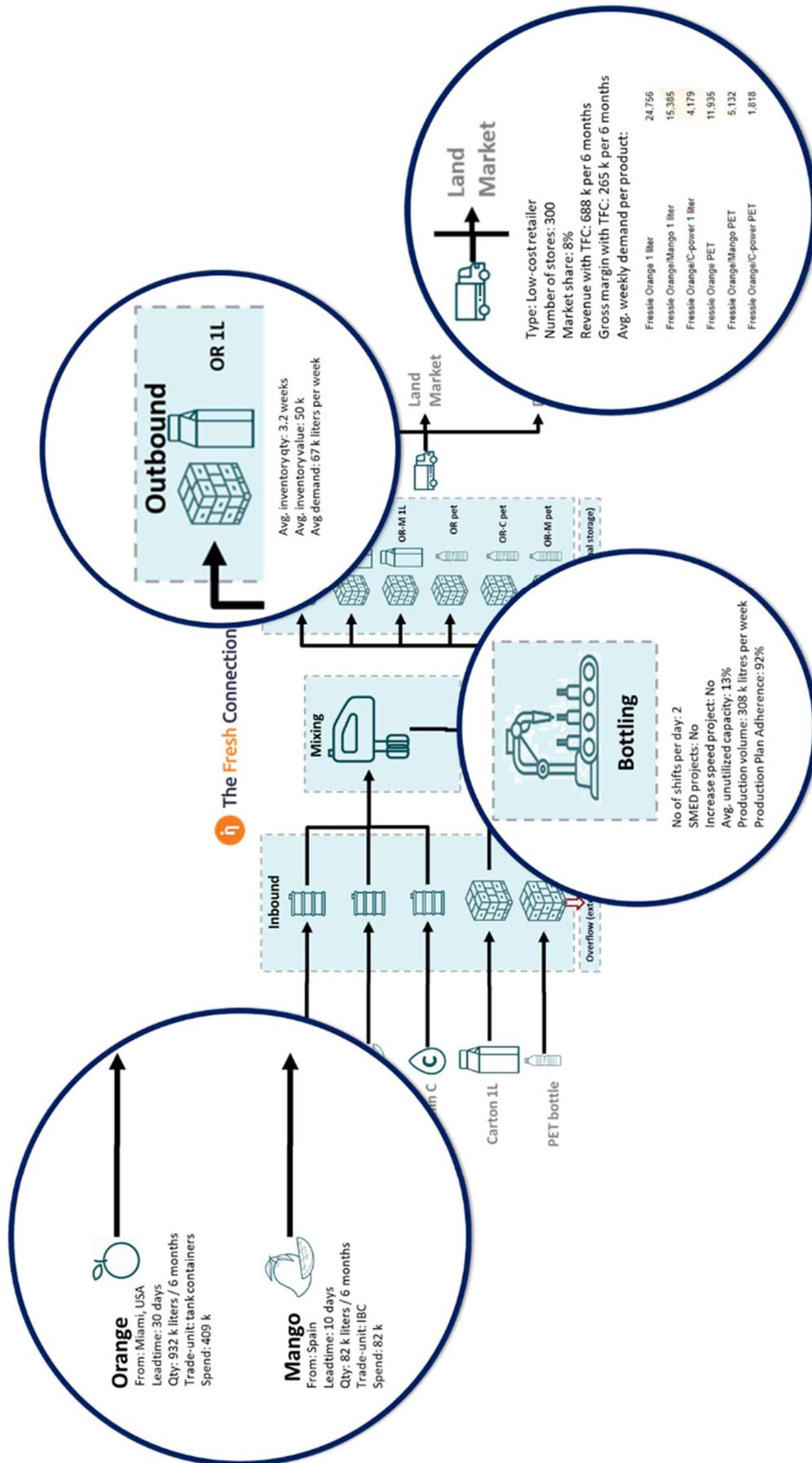


Exhibit 2: Examples of aspects of supply issues

Table for listing supplier-related aspects

Supplier related aspects	PET	Carton pack	Orange	Mango	Vitamin C
Spend per 6 months					
Revenue of Final product					
Size vs TFC					
Location					
Leadtime					
...					

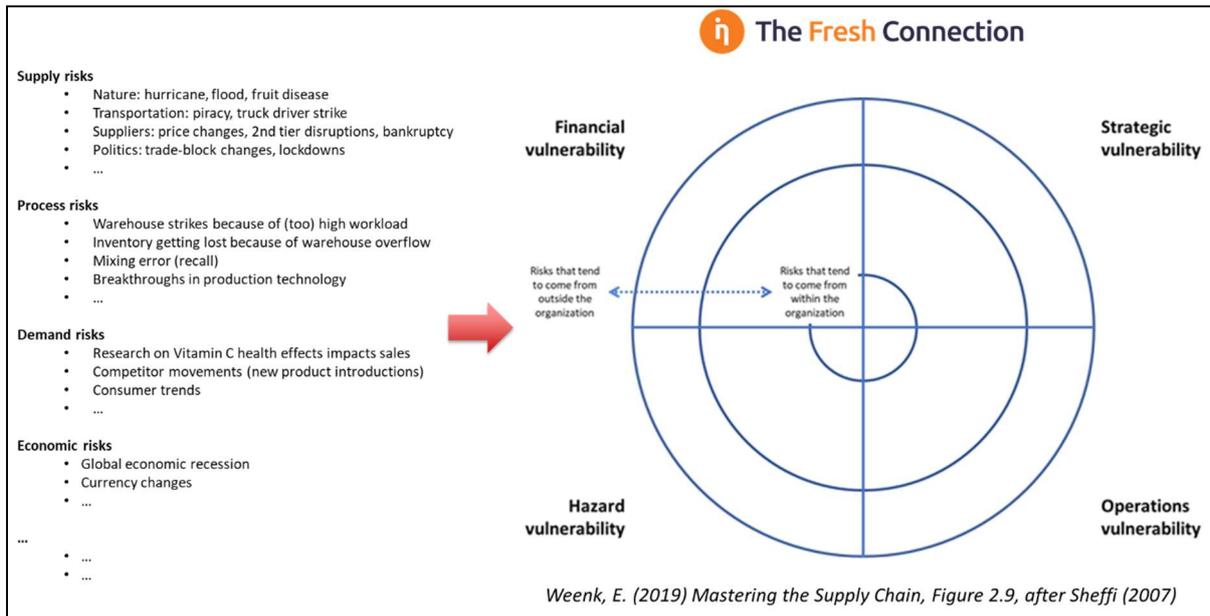
Exhibit 3: Examples of aspects of demand changes

Table for listing aspects related to demand changes

Supplier related aspects	PET	Carton pack	Orange
Customer importance (revenue; % revenue of total)			
Customer importance (market share)			
Additional production & storage required			
Uncertainty of amount of demand change? Impact of uncertainty?			
Uncertainty of duration of demand change? Impact of uncertainty?			
“the day after”? Impact of quick downsizing after peak?			

Exhibit 4: Example of TFC risks and vulnerability mapping

Examples of risk items to be placed in the vulnerability mapping:



Annex 1: getting access to TFC data

To provide your students with access to The Fresh Connection (watch only), refer them to the instructions below:

1. Go to the webpage <https://my.inchainge.com> and click on the link "No account yet? Register as a new user".
2. During the registration process you can define your own password, which should meet the following requirements:
 - minimum of 8 characters, of which:
 - minimum 1 CAPITAL
 - minimum 1 number (123)
 - minimum 1 non-alphanumeric symbol (!?#)
3. After registration you will receive a confirmation email on the email address you have specified as username. Follow the instructions in this confirmation email.
4. After registration has been completed, you can now log into the platform again at <https://my.inchainge.com>, using the specified email address and the password you created. On the screen that opens then, there is a field called "Code entry". Here you can insert the course code **RISKSTCASE** and click on submit.
5. After inserting the course code and potentially refreshing the page, you should now find a widget on the right-hand side of the screen called **TFC - Teaching Case Risk Student**.
6. By clicking on **Enter Simulation**, you can get into the system and see the screens with the required company data.

Annex 2: About Online Delivery of TFC as an interactive case

The Fresh Connection is now available at a discounted price as a pilot package to first time users. For more information, go to this page: <https://www.inchainge.com/education/>





Online Delivery Bundle Guidelines

With COVID-19 spreading quickly across the world, it has impacted the training of supply chain professionals and the education of young talent. As schools are shutting down all over the world, teachers are presented with the challenge of keeping their students on track. Now that face-to-face classes are no longer possible, what alternatives are there to safeguard the quality of their education?

 Very important to keep in mind for distant learning is that students are preferably provided with comprehensive content that they can review independently, without further explanation, at their own pace with support options in case of further questions.

 Clearly **our simulations are web-based learning tools** and it is very easy to take classes or courses based on our simulations completely online. To help you out in structuring such online delivery of your courses we have put together a document with tips and tricks. We have also created additional materials for you as well as for your students.

 Everything will be made available through my.inchainge.com. Simply login and go to: TFC Education Materials. There you will find a newly added chapter called 8. Online Delivery. An initial set of documents is already available today. We will continue to add in the coming days. So please check back regularly.

 Let me now provide you with an overview of what support is available at each step of delivering the course. Please note that in case you are restricted in time or resources and wish to outsource any of the below steps to one our experienced education associates please do reach out to us to align on timing and costs.

Check below our **8 steps instruction** on **how you can quickly switch to a digital classroom!**

↓



1. Preparation

Before the start of the course, students need to be informed and registered and should have formed teams.

- a. We have a hassle-free web-based login procedure without the need to distribute passwords and usernames. All you need to do is direct the students to register at my.inchainge.com and let them use the course code that we have provided you.
- b. Students can be assigned to teams or form teams themselves through my.inchainge.com. Instructions for teachers on how this works can be found in the chapter **2. Simulation Management**.
- c. Hand-outs with general instructions for students are of course already available in chapter **7. Hand-out for students** and can be sent around to the students before the course starts.
- NEW** d. In addition, we have now also created a bundle for students to give them access to these documents through my.inchainge.com. The bundle code rather than the documents themselves can then be shared with students before the course starts.



2. Kick-off

For the online kick-off we suggest one of the following options:

- NEW** a. Share an introductory kick-off movie that we have prepared and is available via my.inchainge.com to the students. Advantage is that students can watch at their own pace and time. You determine your own timing when to share the - Kick-off - bundle code that gives access to the introductory movie for your students through my.inchainge.com.
- b. Organize a webinar with screen-share options and use the standard kick off presentation as provided in my.inchainge.com: **3. Simulation Introduction**. We recommend that you record the webinar and provide the link to the recorded session to all students afterwards
- c. Hand-outs with general instructions for students are of course already available in chapter **7. Hand-out for students** and can be sent around to the students before the course starts.



3. Game Play

Students are now ready to enter the simulation. Please note that there is no need for team members to be online at the same time to analyse the information and make changes in the simulation. This can be done asynchronously. Student teams most often use skype to meet online and align on findings and decisions.

All the information that is needed to play The Fresh Connection is in the interface! Encourage the participants of your training or your students to visit the extensive InfoCenter if they would like to learn more about a specific decisions, role or parameter. It is also possible to go directly to the necessary definition by using the "i" icon next to a term.

- NEW** If students have further questions, we can make a support button available within the simulation environment linked to any designated mail address. Students can then use the in-game form to send a question directly to this mail address. (As an additional service it is also possible to outsource this to one of our Education Associate).



4. Debrief

After each round the teacher normally provides a debrief and guidance for further rounds. Similar to the kick-off session we suggest one of the following options:

NEW

- a. Share a standard de-brief movie that we have prepared and is available via my.inchainge.com to the students. Advantage is that students can watch at their own pace and time. You determine your own timing when to share the - Debrief - bundle code that gives access to the debrief movie for a specific round for your students through my.inchainge.com.
- b. Organize a webinar with screen-share options and use the standard debrief presentations as provided in my.inchainge.com: **4. Debrief Materials**. We recommend that you record the webinar and provide the link to the recorded session to all students afterwards.
- c. Hand-outs with general instructions for students are of course already available in chapter 7. **Hand-out for students** and can be sent around to the students before the course starts.



5. Examination

NEW

At the end of the course students will have to be graded. We will provide you with several examples for grading that work particularly well in the case of online delivery and examination. We have put together a course syllabus amended to reflect online delivery and examination. You will also find references to text-excerpts and gradable exercises from the following book:

Weenk, E (2019) Mastering the Supply Chain. Principles, practice and real-life applications, Kogan Page

The referenced text-excerpts and gradable exercises have also been added as separate documents in my.inchainge.com.



6. Technical

Emergency support is available for you 24/7 through the regular channels.

For the delivery of the kick-off or debriefs to students you can use tools such Skype for Business or Zoom. If Skype for Business is not available at your organisation, it is also possible to use personal Skype. It is free, easy to install and register. It will allow you to have up to 50 participants in the call.

With larger groups it is best to keep all microphones muted. To create room for questions and facilitate discussion, encourage the participants to leave questions and comments in the chat section of the webinar for you to address. This will simplify the two-way communication while allowing to deliver the content with minimal interruptions.

It is strongly recommended to record the live sessions and share the recording with the participants.

It might be that your university uses other tools to share content or facilitate webinars with the students. Examples are Adobe Connect, Moodle, Canvas, Full Fabric or Blackboard.

Feel free to reach out to us if you have any questions on how to deliver a kick-off or debrief via Skype, Zoom or other platforms. We are more than happy to show you how to make this work.



7. Virtual Teams

Our simulations are based on team play. Quite often, it is already difficult to align as a team when physically together in the classroom. But now, they might have to work together as a virtual team using additional communication tools (such as Slack, WhatsApp, Telegram, etc.) to align their decisions. Not only does this keep students engaged and involved but it actually also mirrors the reality of today where (supply chain) professionals work together in virtual teams whose members are quite often based all over the world and in the current environment under significant time pressure.

NEW

This is an opportunity for your students to really experience working in virtual teams under time pressure, to deal with it, and reflect on it afterwards. We can also open up the in-game self- and team-reflection based on the Belbin roles that students can use for a reflective assignment.



8. Other options

NEW

To increase student engagement and let them reflect on their decisions during one or more rounds we have put together a list of >20 discussion points students can react to. The list can be found in my.inchainge.com. We recommend to select one or more discussion points per role, share them with the students with the task to reflect on them individually or as a team.

**Please reach out to us if you need more help or information
on how you can quickly switch to a digital classroom!**

**We look forward to hearing from you!
Best regards,**

The Inchainge Team

